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ETHIOPIAN SOCIETY OF ORTHOPEDICS & TRAUMATOLOGY

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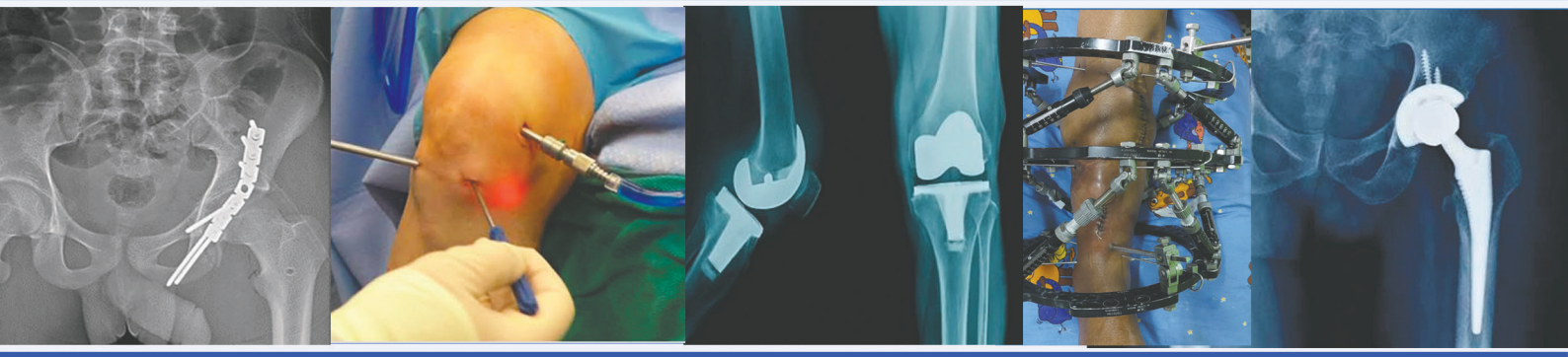
www.ethiopianorthopaedics-esot.org

17TH ANNUAL GENERAL MEETING & SCIENTIFIC CONFERENCE

MANAGEMENT OF FRACTURE RELATED INFECTIONS

Hailé GRAND Addis Ababa

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ESOT
Ethiopian Society of
Orthopedics & Traumatology

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Contents

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Droga Pharma Pvt.Ltd Co. is a private limited company based in Addis Ababa, Ethiopia, aiming on sustainable supply of quality medicines, sutures, Orthopedic and Neuro Surgical Instrument and implants, disposable medical devices and diagnostic medical equipment while offering a very competitive and fair price.

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Presidential Address to the Orthopedic Society

My esteemed colleagues, honored guests, and distinguished members of the Orthopedic Society,

I am profoundly humbled and honored to stand before you today as your President. As we gather for this annual convocation, I am reminded of the extraordinary privilege it is to be part of this esteemed community of dedicated professionals.

Throughout the past year, we have witnessed remarkable advancements in our field. From the development of cutting-edge surgical techniques to the integration of innovative technologies, the pace of progress has been nothing short of breathtaking. As we look to the future, I am confident that our collective efforts will continue to revolutionize the lives of countless patients.

At the heart of our mission lies a profound commitment to excellence. We strive to provide the highest quality of care to our patients, guided by the principles of innovation, evidence-based practices, and compassionate service. Our relentless pursuit of knowledge and clinical refinement ensures that we remain at the forefront of our field.

As we navigate the complexities of the healthcare landscape, it is imperative that we advocate for policies that support our patients and advance our profession. We must work collaboratively with policymakers, insurance providers, and other healthcare professionals to ensure access to affordable and equitable orthopedic care for all.

Beyond our clinical responsibilities, we have a broader role to play in shaping the future of healthcare. We must mentor and inspire the next generation of orthopedic surgeons, fostering a culture of curiosity, innovation, and compassionate service. We must engage with our communities, educating patients and advocating for their health and well-being.

Our society has a proud history of collaboration and partnership. Together, we have overcome countless challenges and achieved significant milestones. As we embark on the next chapter, I urge all of us to continue to embrace the spirit of unity and support that has defined our organization.

In the coming year, we will work tirelessly to:

- Advance clinical research and innovation
- Enhance patient education and advocacy
- Promote diversity and inclusion within our profession
- Strengthen our relationships with other healthcare stakeholders

As we come together in the pursuit of these goals, I am confident that we will continue to make a profound impact on the lives of our patients and the broader community.

This year's theme, management of fracture related infections is a topic close to all of our hearts as orthopedic surgeons. We have had the privilege of treating a significant number of patients with infections related to fractures and trauma, which has only cemented our belief in the need to delve deeper in to the topic, and share our experience with our esteemed colleagues, and partners.

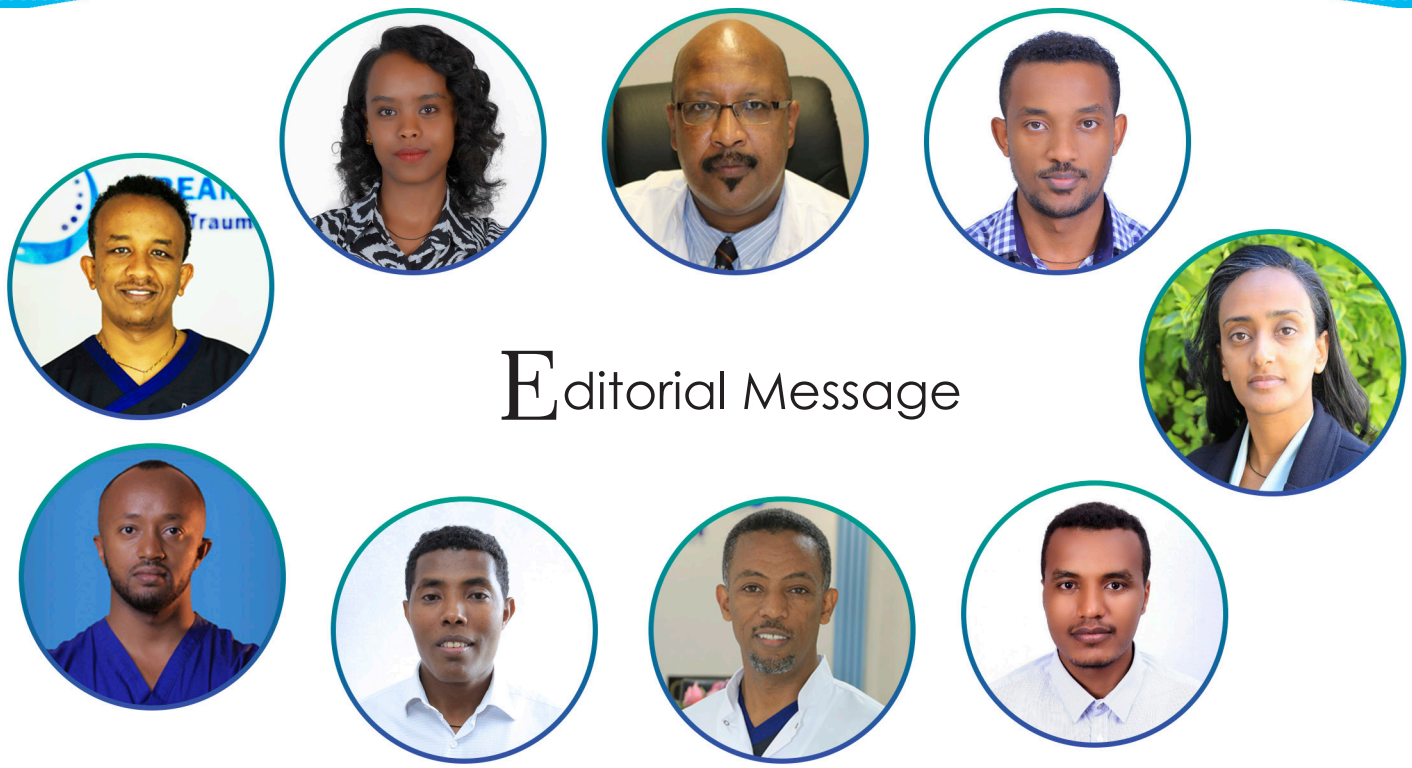
At last, I would like to express my sincere gratitude to our esteemed members, executive committees, and the team working to organize our annual meeting. it is through our collective commitment that our society continues to thrive.

Equally, I would like to render my sincere appreciation to our partner companies, most notably AO- Alliance, ADFA and SIGN international for their unwavering support to the clinical service and educational perspective of Orthopedics across the nation and also to all pharmaceutical companies who have contributed financially to sponsor this event.

Let us embrace the challenges and opportunities that lie ahead with the same passion, dedication, and unwavering commitment to excellence that has always characterized the Orthopedic Society. Together, we will build an even brighter future for our profession and for the countless patients who rely on our care.

Thank you!!

Dr Geletaw Tessema
President



Editorial Message

Dear esteemed readers,
As we navigate through an era marked by rapid advancement in medical technology and evolving patient care paradigms, the filed of orthopedics stand at a pivotal cross road. The Ethiopian Society of Orthopedic and Traumatology (ESOT) is proud to be at the forefront of these exciting developments including dedication to enhance patient outcomes, fostering professional growth and promoting evidence-based practice via innovative researches.

In this 11th volume of the ESOT magazine, we present a remarkable progress and emerging trends that are shaping the future of orthopedic practice in Ethiopia. We present the inspiring success stories of the ever-fast-growing orthopedic institutions across the country and impressive achievements in service provision, academic and clinical research.

Moreover, we are thrilled to showcase inspiring stories from leading orthopedic surgeons who share their experiences, challenges and visions for the future generation. Their dedication to pushing the boundaries of what is possible in orthopedic surgery is truly commendable and serve as a beacon of inspiration for all of us. We believed that the interviews of Dr. Duane Anderson and Dr. Duretti Fufa will be inspiration for most of the young orthopedic surgeons.

The brief biography of the multifaceted orthopedic surgeon, brigadier general Dr. Tadesse Melka, is also included in this volume. Unlike the previous years, we have 22 abstracts published in this volume which shows the significant strive for the development of evidence-based medicine. Most of these abstracts are original articles and will be presented at the podium. As an association, we are committed to provide continuous education and professional development opportunities for our members including courses, webinars, workshops, seminars and annual conferences with the help of our long-term international collaborators including AO Alliance, ADFA, and SIGN International where we included their activity reports in this magazine.

Lastly, we would like to express our heartfelt gratitude to our members, contributors and readers for your unwavering support and dedication to the orthopedic profession.
Sincerely

ESOT Magazine 2023/24 editorial team

List of Graduate and resident Members of ESOT

Founding members

1991
1. Dr.Ahmed Taha Makki (Yeman Citizen)
2. Dr.Eskinder Afework
3. Dr.Lakew W/amanuel

1993
1. Dr.Tawfik Abdulahi
2. Dr.Temesgen Fitru
3. Dr.Tezera Chaka
4. Dr.Worku Mekonen
5. Dr.Wondimu Wolde

1994
1. Dr.Teshome Worku
2. Dr.Woubalem Zewdie

1996
1. Dr.Legesse Yigzaw
2. Dr.Solomon E/yonas

1997
1. Dr.Dereje Tekalign
2. Dr.Mesfin H/mariam
3. Dr.Tadesse Alemayehu

1998
1. Dr.Asfaw Ayele
2. Dr.Dagne Feleke

2000
1. Dr.Hailu Shewa Amare

2001
1. Dr.Gizachew Nigussie

2002
1. Dr.Birhanu Beyer
2. Dr.Wondaferaw Wondimu

2003
1. Dr.Biruk Zewudie
2. Dr.Genanew Admasu
3. Dr.Hailu Legesse

2004
1. Dr.Manyazewal Dessie

2005
1. Dr.Kinfe Araya
2. Dr.Zelalem Tamirat

2006
1. Dr.Biruk Lambisso
2. Dr.Elias Ahmed
3. Dr.Daniel Ayalkibet
4. Dr.Kagnew Wubishet

2007
1. Dr.Birhanu Ayana
2. Dr.Tesfaye Lemma

2008
1. Dr.Abebaw F/sillasie
2. Dr.Dereje Negash
3. Dr.Fikadu Teshome
4. Dr.Fisseha Bekele
5. Dr.Yiheyis Feleke

2009
1. Dr.Andargachew Workineh
2. Dr.Demissie W/kidan
3. Dr.Mekonen Wordofa

All founding members listed above are graduates of AAU

Members Trained in Orthopaedics Abroad

1.Dr. Bahiru Bezabih (founding member)
2.Dr. Berhe Gebreselassie
3. Dr. Duane Anderson
4.Dr. Laurence Wicks
5.Dr. Lishan Assefa (founding member)
6.Dr. Mesfin Etsub
7.Dr. Tewodros Tilahun
8.Dr. Tim Nunn
9.Dr. Zegene Taye (founding member)
10. Dr. Guetahoun Yetbarek
11. Dr. Mengistu
12. Dr. Amare Tessema(Traumatologist)
13.Dr.Stefano Bolongaro
14.Dr.Nigatu Antalew(founding member)
15.Prof.Geofrey Walker(founding member)

Graduates, continued Addis Ababa University (AAU)

2010
1. Dr. Neguissie Seifu
2. Dr. Selamu Dessalegn
3. Dr. Solomon Awoke

2011
1.Dr. Tilahun Desta

2012
1.Dr. Daniel Teferi

2013
1.Dr. Alemayew Silassie
2. Dr. Bezu Chemeda
3.Dr. Mohammed Adem

2014
1.Dr. Nesredin Yusuf
2.Dr. Nigussie Hailu
3. Dr. Samuel Hailu
4.Dr. Tadesse Shimelis
5.Dr. Teshome Mosissa
6. Dr. Wondwossen Tekola
7.Dr. Sisay Birhanu

2015
1.Dr. Ebrahim Ahmed
2.Dr. Geletaw Tessema
3. Dr. Tekalign Tsegaye
4.Dr. Sham Abrahim
5.Dr. Worku Belay
6.Dr. Solomon Goshu

2016
1. Dr. Ephrem G/Hana
2. Dr. Esubalew Abebe
3. Dr. Habtamu Bayissa
4. Dr. Mamo Deksisa
5. Dr. Tewodros Daba
6. Dr. Tinsae H/Michael
7. Dr. Yoseph Zekarias
8. Dr. Zerihun Tamirat

2017
1. Dr. Addissu Chala
2. Dr. Biruh Wubishet
3. Dr. Leul Merid
4. Dr. Yared Solomon
5. Dr. Milkyas Tsehaye
6. Dr. Getnet Asnake

2018
1. Dr. Abduhrehaman Ahmed
2. Dr. Ably Worku Haile
3. Dr. Ananya Kassahun Admassu
4. Dr. Ermias Gizaw H/Meskel
5. Dr. Eskinder Kebede Tadesse
6. Dr. Getayie Temesgen Kebede
7. Dr. Zeynu Zuber
8. Dr. Mahder Eshete Yilma
9. Dr. Melesse Gardie Belete
10.Dr. Misgana Temesgen Workneh
11. Dr. Menewer Yirga Ahmed
12. Dr. Mohammed Issa Dawod
13. Dr. Nardos Worku Ketema
14. Dr. Samson Tule Sadiko
15. Dr. Seid Mohammed Yasin
16. Dr. Sintayehu Bussa Teresa
17. Dr. Sisay Belete Berga
18. Dr. Tadesse Esayas Wae
19. Dr. Yebchaye Wondafrash Geneda

2019
1. Dr.Abdirashid Ismael
2. Dr.Ahmed Seid
3. Dr.Ayele G/Selassie
4. Dr.Bahru Atnafu
5. Dr Baru Legesse
6. Dr. Semir kassa
7. Dr. Biniyam Teshome
8. Dr. Birhanu Ayinetaw
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10. Dr. Chernet Leka
11. Dr. Chol William
12. Dr. Fasil Nigusse
13. Dr. Habtamu Tamrat
14. Dr. Helawi Tewabe
15. Dr Hiwot Hailu
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17. Dr. Mengistu G/Yohanes
18. Dr. Michael Habtu
19. Dr. Moa Chali
20. Dr. Mohammed Shikur
21. Dr. Mulusew Tibebu
22. Dr. Oumer Seid
23. Dr. Tewodros Asegie
24. Dr. Thomas Melese
25. Dr. Tofik Kedir
26. Dr. Tsega Yilma

2020
1. Dr. Admasu Tibelt
2. Dr. Ahmed Abdusemed
3. Dr. Eyueal Ambaye
4. Dr. Fikir Tesfaw
5. Dr. Fitsum Lakew
6. Dr. Fre Alemseged
7. Dr. Getachew Berhe
8. Dr. Getahun G/Egziabher
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14. Dr. Tegenu Dinku
15. Dr. Teshale Ayana
16. Dr. Tewodros Taye
17. Dr.Tsegaye Mamo
18. Dr. Yonas Amiga
19. Dr. Yazachew Yimenu
20. Dr. Zenaye Wude
21. Dr. Teshome Tena

2021
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2. Dr. Habtamu Akalu
3. Dr. Melkamu Alemu
4. Dr. Kaleab Tesfaye
5. Dr. Yemane G/Yohannes
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10. Dr. Tezera Tadesse
11. Dr. Aelaf Aseged
12. Dr. Belete Hubena
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14. Dr. Henok Dagnachew
15. Dr. Daniel Banksira
16. Dr. Gemechis Amano
17. Dr. Matiyas Seid
18. Dr. Senay Mekonen
19. Dr. Fantahun Solomon
20. Dr. Abdo Dames

2022
1. Dr. Abdulwasi Jemal
2. Dr.Abel Jemberu
3. Dr.Addisu Deribe
4. Dr.Amanuel leulseged
5. Dr.Asana Bersisa
6. Dr.Barnabas Wondimu
7. Dr.Beakal Bogale
8. Dr.Elleni Atnafu
9. Dr.Elsa Daniel
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11. Dr. Hailegebriel Degefu
12. Dr.Mehari Temesgen
13. Dr.Melkamu Tafesse
14. Dr.Mohammedamin Kelil
15. Dr.Samrawit Esayas
16. Dr.Shikuria Lemma
17. Dr.Tadesse Debrye
18. Dr.Tadesse Dugasa
19. Dr.Tesfahun Tekle

20. Dr.Tewodros Fikadu
21. Dr. Yalew Tsegaye
22. Dr. Said Osman

2023

1. Dr. Abebaw Muhabaw Zegey
2. Dr. Alpha Seifu Ail
3. Dr.Belay Tsega Ayenew
4. Dr. Biruk Fekadu Tebeka
5. Dr. Daniel Demie Abiebie
6. Dr. Endrias Habte Belay
7. Dr. Getaneh workneh Kassa
8. Dr. Milkiyas Tsegaye Haile
9. Dr. Shikure Esmale Mossa
10. Dr.Tamirat Hankoro Hadello
11. Dr. Yasin Awil Elmi
12. Dr. Mohamed Mohamad Farah

2024

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2. Dr. Getasew Alehegn
3. Dr. Bethel Zeleke
4. Dr. Bezawit Teferi
5. Dr. Demelash Besha
6. Dr. Tewolde Birhane
7. Dr. Dagim Matebie
8. Dr. Anteneh Bekele
9. Dr. Natnael Shewatatek
10. Dr. Kidanu Chala
11. Dr. Adamu Belete
12. Dr. Ridwan Mohammed

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1. Dr. Abas Abubeker
2. Dr. Abay Birhan
3. Dr.Addis Abebe
4. Dr. Alazar Menbere
5. Dr. Ayenew Mulualem
6. Dr. Binyam Dagnaw
7. Dr. Dawit Getachew
8. Dr. Bisrat Tilaye
9. Dr. Haileyesus Abdisa
10. Dr. Kassahun Anteneh
11. Dr. Lopiso H/Mariam
12. Dr. Mehariw Zena
13. Dr.Mengistu Gebeyehu
14. Dr. Muhammed Fentaw
15. Dr. Surafel Esmelealem
16. Dr. Teklegiworgis G/Medin

AAU-R3

1. Dr. Abraham Workineh Azale
2. Dr. Adonias Ager Sinshaw
3. Dr. Habtamu Minwagaw Admassie
4. Dr. Fentahun Bantigegn Seyoum
5. Dr. Nebiyu Eliyas Aliyu
6. Dr. Bizuayehu Amanu Aynalem
7. Dr. Tefera Belay Abera
8. Dr. Fentahun Melese Meneye
9. Dr. Wondimagegn Tibebu
10. Dr. Yisak Destalem

AAU-R2

1. Dr.Abel Kifle Shume
2. Dr.Berhanu Amare Taye
3. Dr.Habtamu Menkir Gebo
4. Dr.Hamid Mohammed Adem
5. Dr.Hanan Nigusse Ayechew
6. Dr.Mekonnen Dessalegn Alemu
7. Dr.Rediet Yifru Mammo
8. Dr.Yehun Woldesemayat Yemisrach
9. Dr.Yonathan Endale Bekele
10. Dr.Solomon Mengesha Wesenyeleh
11. Dr.Mickey Bekeshe Mamo
12. Dr.Gezahegn kebede tesema
13. Dr.Esmael Mohammed Hassen
14. Dr.Selamawit Abraham Abebe

AAU-R1

1. Dr.Abel Amare Tadesse
2. Dr.Alayou Dagnaw
3. Dr.Amanuel Ayichew Whib
4. Dr.Amanuel Berhaneselassie
5. Dr.Basliel Binyam
6. Dr.Celestin Twiringiyimana
7. Dr.Dawit Kidane Sibane
8. Dr.Dawit Tekle Gebremedhin
9. Dr.Fekadu Hunie
10. Dr.Kirubel Teferi
11. .Dr.Melkamsew Yirgu
12. Dr.Milkessa Ketema
13. Dr.Samson Solomon
14. Dr.Semehal Berihun
15. Dr.Patrick Rwego
16. Dr.Tinsae Yoseph
17. Dr.Tofik Aman Kersema
18. Dr. Tsegay Zeray

AAU Ortho-Trauma Subspecialty AAU- Toronto 1st Graduates

1. Dr. Menewer Yirga
2. Dr. Misgana Temesgen

2022

1. Dr. Biniam Teshome

2023

1.Dr. Teshome Tena

2024

1.Dr. Solomon Melaku

Fellows in training

1. Dr.Gemechis Regasa Idosa
2. Dr.Getahun Gebregziabher

AO/Cure Ethiopia Children's Hospital Peadiatric orthopedic Graduates

2017

1. Dr.Leul Merid

2018

1. Dr. Nardos Worku

2019

1. Dr. Tekalign Tsegaye

2020

1. Dr. Bekalu Wubshet

2021

1.Dr. Netsanet Abebe
2.Dr. Wubshet Aderaw

2022

1. Dr. Cherinet Leka
2.Dr. Dawit Alemayehu

2023

1. Dr. Belay Tsega

Current Peadiatric orthopedic Fellow in training

1. Dr.Ararso Gonfa

AAU -COSECSA graduates

1. Dr.Maedot Mihrete
2. Dr.Tesfahun Ali

MCM/Korean Hospital-COSECSAtrainee

1. Dr.Mickyas Aberham Mamo

Graduates of St. Pauls' Hospital Millenniun Medical college(Sphmmc)

2020

1. Dr. Getasew Tessfaw
2. Dr. Bereket tsegaye
3. Dr. Teshale Lodamo
4. Dr. Netsanet Abebe
5. Dr. Aytegeb Ayehu
6. Dr. Samuel kebede

2021

1 .Dr. Ashenafi Ayalew Mihret
2.Dr. Ashenafi Udessa Biftu
3.Dr. Beza Gireff Tadesse
4. Dr. Habtewold Mulat Ayele
5.Dr. Idris Hassen Mussa
6.Dr. Kalkidan Ayalew Mulat
7.Dr. Meron Kelil Mohamed
8. Dr. Mulugeta Bekele Geneti
9.Dr. Sintayehu Tekle mamo
10. Dr. Soaleh Ebrahim Molla
11.Dr. Omer Mohamed Farah

2022

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2.Dr. Anteneh Damena
3. Dr. Bekele Chimdesa
4. Dr. Berhanu Andarge
5. Dr. Bezayit Tesfaye
6. Dr. Cheru Beyene
7. Dr. Daniel Teklu
8. Dr. Dawit Alemayehu
9. Dr. Desta Girma
10.Dr. Endalamaw Fentie
11.Dr. Giday Zeru
12.Dr. Kirubel Girma
13.Dr. Lelisa Merga
14.Dr. Sahle Tsegabrhan
15.Dr. Tolasa Dibisa
16.Dr. Tsegaw Tamene
17.Dr. Zerfu Balla

2023

1. Dr. Abberu Eyasu
2. Dr. Samuel Workineh
3. Dr. Mateyas Bizualem
4. Dr. Sirage Abnew
5. Dr. Eyob Ketema
6. Dr. Yohannes Shugie
7. Dr. Ararso Gonfa
8. Dr. Sani Hussen
9. Dr. Fuad Elias
10. Dr. Gemechis Ragasa
11. Dr. Biniam Tadese
12. Dr. Teyib Ababiya
13. Dr. Lemessa Gonfe
14. Dr Ashenafi Negash
15. Dr. Birhanu Mekuria

2024

1. Dr. Amir Wodaje
2. Dr. Aragaw Kibret
3. Dr. Daniel Endale
4. Dr. Kajela Abu
5. Dr. Moti Molatu
6. Dr. Senayad Benti
7. Dr.Tariku Beriso
8. Dr. Tesfatsion H/Michael
9. Dr. Teshome Eshetu
10. Dr. Tilahun Mulu
11. Dr. Tuji Mohammed
12. Dr Biniyam Assefa
13. Dr.Ayalew Komande
14. Dr. Mohammed Ahmed
15. Dr. TeklebirhanGebrekirstos
16. Dr. Leake Tirfe

Sphmmc-Graduating class

1. Dr. Abubeker Shikur
2. Dr. Abdalla Abdirahman
3. Dr. Bereket Argaw
4. Dr. Cherenet Fikadu
5. Dr. Eyoel Tesfaye
6. Dr. Natan Wondwossen
7. Dr. Nasradin Ahmed
8. Dr. Salih Adem
9. Dr. Solomon Almaw
10. Dr. Tsadiku Tsegaye
11. Dr. Yeabtsega Degu
12. Dr Amana Bedassa

SPHMMC-R3

1. Dr. Abdifetah Mohammed
2. Dr. Abel Assefa
3. Dr. Abera Nigussie
4. Dr. Gachana Moti
5. Dr. Khadar Abdi
6. Dr. lokoya Innocent
7. Dr. Moti Teshome
8. Dr. Natnael Fikru
9. Dr. Samuel Husien
10. Dr. Sultan Kelil
11. Dr. Tefera Addise
13. Dr Mitiku Leulseged
14. Dr. Nigat Tefera

SPHMMC-R2

1. Dr. Abdulrehman Yusuf
2. Dr. Birhanu Kassaye
3. Dr.Lemi Tesfa
4. Dr.Mesay Lopiso Adore
5. Dr.Mulugeta Belay Wolde
6. Dr.Shimels gumataw abate
7. Dr.Wondesen Gemechu Ayana
8. Dr.Yeabtsega Tadesse Abebe
9. Dr.Mintesinot Tesfaye Beyene
10. Dr.Hailemariam Weldeyesus Dejen
11. Dr.Ketema Tabore Meskela
12. Dr. Gezahegn Mula
13. Dr. Solomon Gebrie

SPMMC R1

1. Dr. Kaleb Alene
2. Dr. Nyandwi Eugene
3. Dr. Sabiti Tumisime
4. Dr. Fekadu Netere
5. Dr. Abdirahman Hassen
6. Dr. Desalegn Ayalew
7. Dr. Rediwan Siraj
8. Dr. Jimmy Ishimwe
9. Dr. Lamesgin Abebayehu
10. Dr. Lomelinr Hakim
11. Dr. Wondmu Teklu
12. Dr. Zinabu Fereja
13. Dr. Abdirahman Tahir
14. Dr.Alemayehu Fereja

Bahir Dar University Graduates

2019

1. Dr. Aderaw Getie Mewahegn
2. Dr. Almaw Bitew Asres
3. Dr. Bekalu Wubshet Zewudie
4. Dr. Binyam Biresaw Netsere
5. Dr. Birhanu Beza Tegegne
6. Dr. Daniel Adane Derso
7. Dr. Solomon Kassaye Enigida
8. Dr. Tafere Wasie Fentie

2020

1. Dr. Mulate Abie Mesele
2. Dr. Yeab Mulat Mesfin
3. Dr. Biniam Zemedu Assefa
4. Dr. Biruk Ferede Zewdu
5. Dr. Misganaw Alemu
6. Dr. Wubshet Aderaw Workneh
7. Dr. Gashaye Tagele Ayele
8. Dr. Getachew Wuhib Shumye

2021

1. D.r Solomone Melkamu
2. Dr. Birlew Teshome
3. Dr. Nagaasaa Habetamu
4. Dr. Abiy Misganaw
5. Dr. Diress Yeshaneh
6. Dr. Dawit Asmamaw
7. Dr. Milkessa Hunde
8. Dr. Workineh Mengesha
9. Dr. Abrham Amare
10. Dr. Melkamu Adamu

2022

1. Dr. Tsegalem Birlie Tesfaye
2. Dr. Mikias Hailu Sahlu
3. Dr. Sabboona Idae Daba
4. Dr. Alemneh Zemene Kassa
5. Dr. Ephrem Bekele Kebede
6. Dr. Adugnaw Bogale Worku
7. Dr. Nuredin Hamid Mohammed

2023

1. Dr.Abriham Gebre
2. Dr.Ashraf Chumeto
3. Dr.Asefa Chukala
4. Dr.David James Wani Loro
5. Dr.Gadissa Mulat
6. Dr.Sehal Ahmed
7. Dr.Yonatan Abie

BDU-Graduating class

1. Dr.Biniyam Marie
2. Dr.Dereje Melak
3. Dr.Endalk Fenta
4. Dr.Getye Bantayehu
5. Dr.Habtamu Woretaw
6. Dr.Mesay Tamrat
7. Dr.Moges Molla
8. Dr.Zewdie Abebaw

BDU R-3

1. Dr.Amanuel Tesfahun
2. Dr.Dawit Alem
3. Dr.F/Mariam Melese
4. Dr.Habtamu Fekadu
5. Dr.Natnael Assefa
6. Dr.Samson Bitew
7. Dr.Tariku Mezgebu

BDU-R2

1. Dr.Eskezia Jembru
2. Dr.Getachew Diress
3. Dr.Habtamu Ayalew
4. Dr.Lakachew Mogninet
5. Dr.Nibret Mognhodie
6. Dr.Worku Tarekegn

BDU R1

1. Dr.Asfaw Minale
2. Dr.Bekalu Alemu
3. Dr.Moges Yegoraw
4. Dr.Girma Tadesse
5. Dr.Ermiyas Dganew
6. Dr.Melese Fentahun
7. Dr.Ahmed Hassen
8. Dr.Assegid Atnafu

University of Gondar (UOG) Graduates

2023

1. Dr. Desalegn Talu
2. Dr. Wodage Mesele

Graduating class

1. Dr. Hailemariam Wuetu
2. Dr. Koyachew Abate
3. Dr. Demis Hailu
4. Dr Sileshi Serebe

UOG-R3

1. Dr. Tigistu Atalay
2. Dr Wuletaw Muchie

UOG -R2

1. Dr.Nardos wuhabie
2. Dr.Melkamu Bihonegn
3. Dr.Awoke yigrem
4. Dr.Abel Hailemariam
5. Dr.Mekonin Setegn
6. Dr.Elias Ebabu
7. Dr.Tamiru yitayew

UOG-R1

1. Dr.Awoke Tsehay
2. Dr.Getinet Worku
3. Dr.Moges Kebede
4. Dr.Solomon Teshome
5. Dr.Sisay Zemene
6. Dr.Wondale Fentaw
7. Dr.Yifredew Mequanint

Mekele University Graduates

2021

1. Dr. Aguer Ayul Warabek
2. Dr. G/Her Mahtsun
3. Dr. G/Michael Aregawi
4. Dr. Ketema H/mariam
5. Dr. Kout Mabior Leek Dang
6. Dr. Million Tareke
7. Dr. Solomon Ayele
8. Dr. Tewelde Nuguse

2022

1. Dr. Kahsay G/Aregawi Weldemihret
2. Dr. Goitom Brhane Gebreegziabher
3. Dr. Beyene Abebe Nrea
4. Dr. Kidanemariam Abrha Teka
5. Dr. Yohannes Gebremedhin

2023

1. Dr. Berhe Birhane G/silassie
2. Dr. Biniam Assefa Alamer
3. Dr. Kibrom Hadush Syum
4. Dr. Solomon Tikur Gelaye
5. Dr. Tsegay Birhane Bisrat

2024

1. Dr. Yohannes Mezgebe

Graduating class

1. Dr. Biniyam Marie
2. Dr. Mesay Tamirat

R3

1. Dr.Abadi Woldu
2. Dr.Amanuel G/yohanes
3. Dr.Endrias Wolde
4. Dr.Mezgebe aregawi
5. Dr.Yirga yeshiwondim

R2

1. Dr.Hayelom Atsbha
2. Dr.Kibrom adane
3. Dr.Kalayu abraha
4. Dr.Tsehaye Hailemariam
5. Dr.Ataklti Gereziher
6. Dr.Shushay Teklay
7. Dr.Frewoini Gebregziabher

R1

1. Dr.Darge Habe
2. Dr.Misgana Gebremariam
3. Dr.Nebiyu Mesfin
4. Dr.Samuel Desta
5. Dr.Siye Gebremedhin
6. Dr.Teklegiorgios Gebrehiwot
7. Dr.Tsegaye Belete
8. Dr.Yifru Mezgebu
9. Dr.Yirgalem Zeberhe
10. Dr.Yoftahe Endeshaw

Hawassa University

Graduating Class

1. Dr. Afework Mabrie
2. Dr. Biruk Dubale
3. Dr. Chanyalew Dires
4. Dr. Feysel Mifta
5. Dr.Hizkyas Kassaye
6. Dr. Peter Garang
7. Dr. Toloasa Dinsa
8. Dr. Wondifrew Kebede

HU-R3

1. Dr. Bereket Abeje
2. Dr. Bereket Petros Beyene
3. Dr. Enyew Getachew Siyum
4. Dr. Mesele Matusala Mera
5. Dr. Israel Wakjira
6. Dr. Morris Justin Jakwot
7. Dr. Tumsa Beyene Turo
8. Dr. Zuber Hussen Zuber

HU-R2

1. Dr.Ashenafiw tademe taye
2. Dr.Araya tilahun donka
3. Dr.Dagmawi knife haile
4. Dr.Habtamu kidane tadesse
5. Dr.Jifar jemal shedo
6. Dr.Kibru demeke getaneh
7. Dr.Robel esayas doye
8. Dr.Wondimagegn worku biruk

HU-R1

1. Dr. Enyew Tesfaye Gebreab
2. Dr. Teshale Tadesse Abreham
3. Dr. Meneberu Shimels Worku
4. Dr.Yidnekachew Bade Woldetensae
5. Dr. Tamene Takele Fanta

Soddo Christian Hospital (PAACS)Graduates-

2022

1. Dr. Temesgen Zelalem

Graduating class

1. Dr. Abenezer Eyasu
2. Dr. Yohannes Nigusu

SCH - R4

1. Dr. Ebsa Bekako

SCH - R3

1. Dr. Naol Jigi

SCH-R2

1. Dr.Dawit Beyore
2. Dr.Dereje Hunduma

SCH-R1

1. Dr.Nahusenay Alemayehu

Jimma University

JU - R3

1.Dr. Sherefedin Hassen
2.Dr. Abdulhakim Kemal
3. Dr. Andualem Tesfaye
4.Dr. Sudi Temam
5.Dr. Hana Umer
6. Dr. Menal Mohammed

JU - R2

1.Dr.Shakir Abdi
2.Dr.Nurtata Shemsu
3.Dr.Samuel Olani
4.Dr.Tessema Adafrie
5.Dr.Kedir Seid
6.Dr.Yohannes Zerihun

JU - R1

1.Dr.Bizuayehu Ayele
2.Dr. Gemechu Dereje
3.Dr.Kango Kariso
4.Dr.Omar Mohamed
5.Dr.Mohammed Melaku

Adama Hospital Medical College ADHMC

ADHMC-R3

1. Dr. Bereket Bura
2. Dr. Bereket Desalegn
3. Dr. Fitsum Temesgen
4. Dr. Mathewos Admasu
5. Dr. Michael Ermias

ADHMC-R2

1.Dr.Efa Teklu Weyesa
2.Dr.Dame Fikadu Keneni
3.Dr.Tibebe Gamie Wordofa
4.Dr.Sharew Delelegn Tesema
5.Dr.Sharmarke Sead Awed
6.Dr.Teshome Balcha Nege
7.Dr.Bol Koul Nhomrom

ADHMC -R1

1.Dr. Abdiasis Hussein
2.Dr. Bedadi Debeli
3.Dr. Dagim Getachew
4.Dr. Deribu Abebe
5.Dr. Tariku Alemu
6.Dr. Tsegaye Fekad

Haramaya University (Hiwotfana Hospital)

HU - R3

1. Dr. Tesfahun Kebede Nunne
2. Dr. Olifan Getachew Wakjira
3. Dr. Hunduma Bikila
4. Dr. Oliyaad Dokter

HU -R2

1. Dr. Gashaw Bayu
2. Dr. Yhun Binega
3. Dr. Tadesse Belete
4. Dr. Surafel Dagne

HU-R1

1. Dr.Woldemedhin Roba
2. Dr.Dawit Fikadu
3. Dr.Abdulkariim Fadluu
4. Dr.Fayisa Fikadu

Wachemo University, Hosanna (WCU)

WCU-R2

1.Dr. Semalign Paulos
2.Dr. Iyasu Abayneh
3.Dr. Cherinet Zeme
4.Dr. Natnael Pawlos

WCU-R1

1.Dr.Gizachew Ashebir Alemu
2.Dr.Andualem Fiseha
3.Dr.Endalew eyayu ayalew

Total Number of Graduates(Seniors) **352**
Total number of residents (**275**)
(TASH(**58**),St.Paul(**53**),BDU(**29**),Hawassa(**29**),
Mekele(**24**),UOG(**20**)Adama(**18**),Jimma(**17**),
Haromya((**12**),Wachamo(**7**),
SCH(**7**),COSECSA(**1**))

List Organized by
Dr.Tezera,Prof.Biruk.L,
Dr.Binyam Dagnaw

All rounded Orthopedic surgeon: A brief Biography of Brigadier General Dr. Tadese Melka Jilcha: 1942- 1993 G.C

Brigadier General Doctor Tadese Melka was born from his father, "Amsaleka" Melka Jilcha, and his mother Mrs. Belaynesh Yegezu on July 7, 1942 G.C. in Addis Ababa. He was born in the area formerly known as Kechene-Medhanealem, uniquely called "Wayu Sefer" (currently called Gulele sub-city, Woreda 7). He was the first and only son of the family and had two younger siblings named Mrs. Mamite and Mrs. Birtkwan Melka.

Brigadier General Dr. Tadese Melka started his first education at the nearby church school, traditionally called Kes timihirt bet, and continued his primary education at "Entoto Kuskuam" school. Then he attended his secondary school at the former "Teferi Mekonen", currently called "Entoto" Technical College. Later on, he attended "Abadina" Police College in Addis Ababa, trained and graduated as an officer. Due to his high academic performance, he joined Gondar College of Health Sciences where he graduated as a health officer. In 1962 G.C, he travelled to Congo with the Ethiopian army on a peace keeping mission and he served the United Nations peace keeping force as a health professional.

Due to his esteemed service, he was sent to Yugoslavia for higher education in 1969 G.C, trained at the University of Belgrade in the field of medicine and graduated as a Doctor of Medicine. He returned home in 1973 G.C and started service in Addis Ababa Police Hospital. Later he was assigned to Eritrea, which was one of the provinces of Ethiopia.

In 1977 G.C, he was again sent to the University of Zagreb (Yugoslavia) School of Medicine for advanced training. He also got a chance to train in Italy, Bologna at large volume hospital with 3000 beds and 26 operating theaters at that time. His stay in Italy benefited him a lot & he finalize his thesis once he returns back to Yugoslavia. After training for more than four years, he graduated as a senior specialist in orthopedics and traumatology surgery and he returned back to Ethiopia in January 1980 G.C, to serve the country and the people.

When Brigadier General Doctor Tadese Melka returned to his country, he was assigned as the director of the police hospital in Asmara in an area called Hazazi. In addition, he was serving in "Kagnew Shaleka" (Gejeret) hospital. He was busy in operating 10-20 patients per day. Since he was the only doctor in the area, he was having his own private hospital at Piasa in the area called "Kebele 2" in Asmara, serving the civilian population.

He was married to Mrs. Maria Melka (Slovenian) and had two children Margarita and Solomon. Solomon unfortunately died in 2004 G.C. He also had a daughter named Ayda from his former Ethiopian partner. Ayda had a son called Jonathan who also died in 2014 G.C. Margarita has three children. Brigadier General Doctor Tadese Melka's second child and

grandchildren now live in Slovenia with their mother.

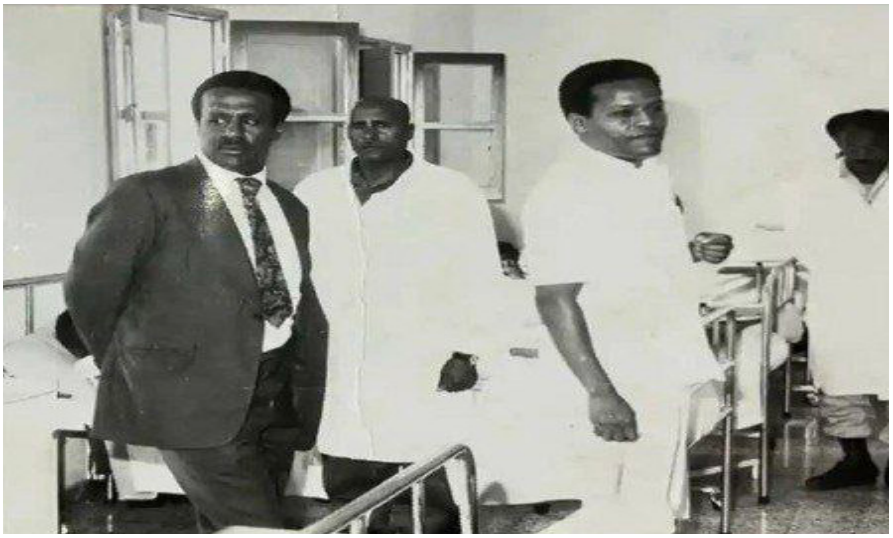
Brigadier General Dr. Tadese Melka is well known with his love to his country and profession. He gives all the priorities to his work and he used to get his families at lunch time where his children come and meet him at his working hospital every day since he returns back to home late night once his children are slept.

On May 1990 G.C, due to the escalation of the war between Ethiopian forces and Eritrean People Liberation Front (EPLF), his wife Maria asked him to leave Asmara but he refused to leave the injured soldiers that were depending on him.

A few hours before the EPLF (Shabia) took control of Asmara, he received a call from the Eritrean Red Cross Society and was told that he could continue his work. When he could have left like all the other generals and senior officials, he decided to stay with his patients. After the EPLF took control of Asmara, he was taken to prison from his work post with Colonel Dr. Yamam Amede who was the only person accompanying him. Ayda, his eldest daughter, was given the task of delivering food for him. Unfortunately, she was not lucky enough to meet him in person. Later, the Eritrean government forces claimed the house and she was forced to leave and come to Addis Ababa to her aunt's house.

His wife Mrs. Maria Melka had repeatedly asked the Eritrean government that her husband, Brigadier General Dr. Tadese Melka, was having chronic sickness and needed medical attention. She even tried to deliver medicines to him but failed. Later on she was not even allowed to step foot in Asmara let alone claiming their properties.

Mr. Igo Jovoice then Ambassador of Yugoslavia in Addis Ababa received an answer from Hayele Markos (Eritrea's representative in Ethiopia) on November 1994 G.C claiming to have forwarded their request to the government and the response was that Brigadier General Dr. Tadese Melka was not with them. A 4 -page copy was given to his wife Mrs. Maria.



All the requests were submitted to Prime Minister Meles Zenawi and Tamrat Layne, representatives of governments, diplomatic missions, international organizations, Ethiopian human rights and Eritrean Embassy have not been answered.

Because of his sole focus on his work, the whole family faced serious troubles. It also seems that the country he loved and served tirelessly has forgotten him. The payment he received for all these years of service came to nothing. He had no pension, no house, no property. He left behind a poor family who live their life in exile. Lately it was known as he died in 1993 G.C at the age of 52 years where he can serve his country to the maximum.

Story complied by: - Media section of EFDRE Federal Police HQ &Commissioner Dr. Dereje Tekalegn, Dr. Tezera Chaka & Prof. Biruk L.W

Source: Tezera Chaka. The Journey of Orthopaedics &Trauma care in Ethiopia. Challenges, Opportunities and Lessons Learned at a Tertiary Hospital in Ethiopia. Ethiop med journ. April 2024 Vol 62 Supp 62 Editorial.

Correlation between tibial nail length and olecranon to fifth metacarpal head measurement at Tikur Anbessa Specialized Hospital, Cross-sectional study

Anteneh Bekele, *Biniyam Dagnaw, Samuel Tesfaye, Biruk Lambisso, Yordanos Girma*

Introduction: The gold standard of care for a tibial shaft fracture is an intramedullary nail. When selecting the correct nail size, it is crucial to assess the length of the tibial bone before surgery. This study aimed to evaluate the feasibility of using the length of the olecranon to the fifth metacarpal head as an alternative method for determining the appropriate length of a tibial nail in situations where measurements using the contralateral tibia are not possible.

Method: A Cross-sectional study was conducted at Tikur Anbessa Specialized Hospital, involving 150 volunteers aged 18 or older attending the orthopedics outpatient department as patient's attendant. Two observers conducted measurements using a tape meter. The length of the tibial nail was estimated by measuring the distance from the tibial tuberosity to the medial malleolus (TMD). Forearm measurement was obtained from the tip of the olecranon to the tip of the fifth metacarpal head, with the wrist in a neutral position and the hand clenched (OMD). Pearson's correlation test was used to assess the correlation between the two measurements. Hierarchical regression analysis was conducted to examine the impact of age, gender, and BMI on these measurements and their associations.

Result: A significant positive correlation between TMD and OMD was observed (Pearson correlation coefficient of (r) 0.927 ($p < 0.001$). The mean OMD measurement was 34.19 cm, while the TMD measurement was 34.1 cm. A hierarchical regression analysis revealed age, gender and BMI did not have statistically significant influence on these measurements and their correlation.

Conclusion: the study suggests that tibial nail length can be estimated using forearm measurement in situations where contralateral tibia measurement is not possible

Keywords: Tibia, Nail, length, olecranon to metacarpal head, forearm, correlation

Accuracy of Predicting Implant Head Size by Digital Templating with and Without Radiographic Marker in Hip Hemiarthroplty: A retrospective record review

Natnael Shewatatek, *Misgana Temesgen, Biruk Lambisso, Tadios Niguss*

Introduction: Preoperative templating has paramount importance for both Total Hip Arthroplasty and hemiarthroplasty. The purpose of this study is to assess accuracy of predicting implant head size by digital templating with and without an external radiographic marker in hip hemiarthroplasty.

Method: A retrospective record review was conduted. Two blinded observers used digital software (Radiant Dicom viewer) to template the femur head size of 35 individuals who had undergone hip hemiarthroplasty in Tikur Anbessa Specialized Hospital from september 2022 to September 2023 using two different methods, external radiographic marker and fixed magnification factor. The templated head size values are then compared to the head size of actual implants used intraoperatively to assess the accuracy of each method. Cohen's kappa value was used to calculate inter- observer variability.

Result: The accuracy of predicting implant head size in hip hemiarthroplasty using both methods is similar with a mean relative error of method 1 (2.8 & 3.1% f or observers A & B, respectively) and method 2 (3.3 & 3.4% for observers A & B, respectively), p-value for both observers A & B is 0.46 & 0.59, respectively. Interobserver agreement f or both method 1 & 2 is excellent when a precision scale of 1 size is used with a kappa value of 0.84 and 0.93 respectively.

Conclusion: Digital templating of hip hemiarthroplasty using a f ixed magnification f actor is as accurate as the radiographic marker method in predicting implant head size with excellent inter-observer reliability.

Keywords: Hemiarthroplasty, Templating, femur head size, external radiographic marker, fixed magnification factor

Outcome of Patients with Combined Orthopedic and Vascular Injuries in Tikur Anbessa Specialized Hospital, Ethiopia: 5-year retrospective study

Aelaf Aseged, *Samuel Hailu, Henok T/selasse, Feron Getachew, Abebaw Muhabaw, Gabriel Alemayehu*

Introduction: Combined orthopedic and vascular injuries are associated with higher mortality and morbidity as compared to isolated musculoskeletal injuries. The objective of this study is to analyze the pattern of clinical presentation, treatment provided, outcome of patients and associated factors with combined musculoskeletal and vascular injuries at Tikur Anbessa Specialized Hospital, the largest center in Ethiopia managing complex orthopedic and vascular conditions.

Method: This case series study was conducted between September 1, 2016, and November 30, 2021. Patients with combined orthopedic and vascular injuries were evaluated to assess the pattern of clinical presentation, treatments given, outcomes of patients and complications identified. Data was gathered from patient charts and HMIS database. Data was analyzed using SPSS software package 28.

Result: Within the study period, 50 patients with 58 arterial injuries and 56 orthopedic injuries were identified. The mean age of the patients was 27, with male being seven times highly affected than female. The most common cause of injury was gunshot (24/50 patients; 48%). Humerus fracture emerged as the most common orthopedic injury (19/56 injuries; 34%), while the brachial artery was the most frequently injured vessel (20/58 arteries; 34.5%). The median time from injury to presentation was 24 hours (range: 1.5-360 hours), with vascular shunting performed at referring hospitals in 8 of the 50 patients. Ultimately, 63% of the limbs were salvaged and surgical site infection was the most frequently reported complication (63%). Notably, the Mangled Extremity Severity Score, Motor Deficit, and Sensory loss emerged as highly significant predictors of limb salvage ($p < 0.001$), with Age also demonstrating significance ($p = 0.045$), albeit to a lesser extent.

Conclusions: There is significant delay in presentation of patients with combined orthopedic and vascular injury. Furthermore, the majority of patients were referred without having vascular shunting performed on the injured limbs. Low Mangled Extremity Severity Score, intact neurology and younger age are associated with better limb outcome.

Keywords: Combined orthopedic and vascular injuries, Fracture with vascular injury, GA IIIC fracture

Assessment of Functional outcome of Distal Femur fracture treated using Distal Femur locking plate and its associated Factors.

Yonatan Tsegaye

Introduction: Distal femur fracture accounts 6 % of all femur fractures. Treatment of distal femur fracture is one of the orthopedic challenges. In this study, functional outcome of distal femur fracture treated with distal femur locking compression plate was assessed.

Methods: This prospective cohort study was carried out among adult patients with distal femur fracture treated by open reduction and internal fixation using distal femur locking plate at Tibebe Ghion Specialized Hospital from August 2022 to July 2023. Using convenient sampling technique, a total of 60 patients with both AO Type A and Type C fracture were included. All patients were followed at 2, 6 ,12 weeks and 6 months. Functional outcome was assessed using Neer's scoring system. Data was entered and analyzed using SPSS 27. Multinomial logistic regression was used to test the association of independent variables with functional outcomes.

Results: Out of 60 patients, 53.3 % of patients were male and 88 % of them were between 18 and 40 years old. Among all patients, 48.3% patients had excellent, 30% had good, 10% had fair and 11.7% of patients had poor functional outcome. Comparing with open fracture, closed distal femur fracture had 2.5 times higher chance of having excellent functional outcome (AOR, 2.49). Patient with regular follow up had 7 times higher probability of excellent functional outcome than those who had no regular follow up (AOR 7.16).

Conclusion: This study concluded that Distal femur locking plate is reliable option for treatment of AO type A and AO type C distal femur fracture. The study found excellent to good functional outcome in most of the patients. Closed fracture and regular follow up were good predictors for better functional outcome.

Keywords: distal femur fracture, Neer's score, distal femur locking plate, ORIF, Functional outcome.

A case report on two patients presenting with Fibrodysplasia Ossificans Progressiva at Tikur Anbessa Specialized Hospital, Ethiopia

Alazar M. Haile, *Abrham W. Azale, Birhanu Ayana*

Introduction: Fibrodysplasia Ossificans Progressiva (FOP) is an ultra-rare disorder that leads to progressive bone formation in extra-skeletal tissue, affecting the patient's quality of life and mobility. It is diagnosed mostly clinically, and health professionals are often unaware of the condition. Only 37 cases have been reported in Africa, with only one case reported in Ethiopia so far. Treatment is generally symptomatic, with a focus on avoiding factors exacerbating flare-ups.

Case presentation: Our first patient was a 7-year-old boy presented with stiffness and soft tissue "lumps" on his body, along with bilateral great toe deformity. On examination, the patient had multiple fixed, non-tender, and bony hard masses of variable sizes all over his body with restricted range of motion at his neck and hips. Radiographs showed bony outgrowth on his tibia, bilateral hallux valgus, and extensive ossification of the posterior paravertebral soft tissue. The second case was also 11-year-old girl presented with neck and elbow stiffness of 2 years duration. She has multiple soft tissue swelling over her trunk and bilateral great toe deformities that were initially noticed at birth. On examination, she also has multiple firm, non-tender swellings all over the body, bilateral hallux valgus, lateral deviation of the trunk, restricted neck range of motion, and fixed flexion deformity of the left elbow. Radiographs and CT showed extensive long band-like intramuscular ossifications over the paravertebral, shoulder and arm. For both patients, after a multidisciplinary discussion, it was decided to follow the patient conservatively and avoid potential triggers including biopsy. The family was advised on the disease course and preventative measures to limit further flare-ups.

Conclusion: The report emphasizes the importance of educating caregivers on the principle of "do no harm" and serves as an entry point to find more patients with similar conditions early in their clinical course.

Keywords: Fibrodysplasia Ossificans Progressiva, iatrogenic intervention, Tikur Anbessa Specialized Hospital

Histopathological patterns of Pediatric musculoskeletal tumors at CURE Children's Hospital of Ethiopia

Belay Tsega, *Tewodros T. Zerfu, Mesfin E. Kassahun, Timothy R. Nunn, Laurence Wicks, Stefano Bolongaro*

Introduction: Childhood musculoskeletal tumors represent a diverse group of neoplasms. These tumors encompass a spectrum of benign and malignant lesions, each with distinct clinical presentations, histopathological features, and treatment approaches. This study aimed to demonstrate the histopathological pattern of musculoskeletal tumors presenting to a specialized Children's Orthopedic Hospital.

Methods: A retrospective descriptive study of 84 patients with histopathological confirmed musculoskeletal tumors was done from April 2014 to September 2023 at CURE Children's Hospital of Ethiopia. Triangulation of the histopathological results as well as the Patient's X-rays in the hospital PACS radiology system and the electronic medical records (EMR) was done before including the patients in the study. Descriptive data was analyzed using SPSS version 27.

Results: During the study period, 84 patients with musculoskeletal tumors were diagnosed through histopathological means after biopsy. Males accounted for 55 %(46 patients) and females constituted 45 %(38 patients). Swelling was the most common chief compliant of patients presenting with MSK tumors followed by pain, deformity and Limping. 84.5% of tumors were benign (71 patients) and 15.5 % were malignant (13 patients). The most common benign tumors include Osteochondroma (17%), Fibrous Dysplasia (13%), and Multiple Hereditary Exostosis (12%). The most common malignant tumors was Osteosarcoma (12%).

Conclusion; The spectrum of bone tumor diagnoses is similar to that published elsewhere in the literature from East Africa. Good biopsy specimens and access to quality histopathological services is key to diagnosis.

Key words; musculoskeletal tumors, histopathology, Pediatric, CURE

Flexible Nailing Technique Without Image Intensifier, a local experience.

Bekalu Wubshet Zewdie

Introduction: Pediatric long bone fractures are among the most common childhood fractures and the ideal management option varies depending on age, fracture personality, growth potential, and availability of resources. Elastic Stable Intramedullary Nails are preferred for the age group of 5-12 years with intraoperative imaging, in resource-limited setups both flexible nails and or intra-operative images may not be available. We didn't find any papers using these nails for fixation of femoral fractures without a C-arm. In this series we show that if flexible nail implants are available, nailing can be done without C-arm.

Methods: A surgical technique was developed mainly from our SIGN nail experience with landmarking, tactile sensation, and nail length and size measurement. Data was captured from 6,12 and 24-week follow-ups at Tibebe Ghion Specialized Hospital, Bahir Dar University. Patients were followed from 6 to 24 months, and removal was indicated between 9 and 12 months.

Result: We have done 8 femur fractures aged 7-11 years, 2 females and 6 males. Road traffic accident accounts for 6 patients and fall for 2 patients. All were closed femurs without associated injuries except one. All of them had good reduction, and stable fixation, but one had a prominent nail. In their follow-up of 3 to 12 months, all had knees flexed more than 90 degrees, pain-free full weight bearing, squat, and smile. Squat and smile were examined from 8-12 weeks. Follow-up after 12 months was not needed because of waiting time for implant removal, and no complication was reported in this period.

Conclusion: From our experience in resource-limited setup, flexible nailing for children can be done without C-arm using landmarks and SIGN techniques expecting an excellent outcome. The study's limitations are the small sample size and its retrospective nature.

Keywords: flexible nail, intramedullary nailing, image intensifier

Pediatric Knee Arthrodesis for Septic Sequelae of the Knee: A patient-reported outcome.

Bekalu Wubshet Zewdie, *Tewodros T. Zerfu*

Introduction: Pediatric knee arthrodesis is performed in children with unsalvageable knee conditions. Despite being one of the treatment options offered in our practice, there is a lack of studies examining the functional outcomes of pediatric knee fusion. This study compares pre and postoperative patient-reported outcomes of pediatric patients treated with knee arthrodesis. Additionally, we also provided insight into the techniques employed for achieving knee arthrodesis using a Taylor Spatial Frame.

Methods: We retrospectively reviewed patients who underwent knee arthrodesis for septic knee sequelae at CURE Ethiopia Children's Hospital from 2013 to 2018. Pre and post-operative Lower extremity functional scale (LEFS) scoring was carried out. We compared their pre and postoperative function. A minimum clinically significant change of 9 points on the scale, as suggested by Binkley et al, was used for comparison.

Results: A total of 21 knee arthrodesis procedures were performed during the study period, with 13 knees in 13 patients included. All the patients improved postoperatively on the scale. All patients exhibited postoperative improvement on the scale, ranging from 1.8 to 5.8 times the minimum clinically significant scale point difference, resulting in a mean increase of 36.23 (p-value 0.0001).

Conclusion: Pediatric knee fusion can be safely performed with the expectation of significant functional improvement in children with old septic arthritis or tuberculosis leading to significant deformity. Gradual correction using a TSF frame reduces the amount of bone resection, consequently minimizing the LLD and post-op neuropathy.

Key words: pediatrics Knee, Arthrodesis, Septic sequalae, TSF frame

Efficacy of Growth Modulation with Eight-Plate for Coronal-Plane Knee Deformities: Etiology Specific Retrospective Case Series

Wubshet Aderaw Workneh, *Tewodros Tilahun Zerfu*

Introduction: Eight plates have been an important tool in treatment of varus-valgus knee deformities with a high reported efficacy of gradual angular correction and minimal complication compared to the traditional acute correction with osteotomies. The main aim of this study is to assess the efficacy of eight-plate as a growth modulation tool for the gradual correction of varus-valgus knee deformities. It also determines factors, which are against complete correction.

Methods: We conducted a single-center retrospective investigation. Patients were studied together, and in sub-groups of pathologic deformity and idiopathic deformity. We used an IBM®SPSS Statistics Version 26 software for analysis. We calculated frequencies for demographic variables and Pearson's correlation, Chi-square test, and regression analysis was conducted for correlations and association. We set statistical significance at 0.05.

Result: We included one hundred fifty-eight patients (255 limbs) in the study of which 50.6% (129) were in the pathologic group. Overall, 62% (97/255) of the deformities corrected to the normal physiologic range. On the other hand, nearly half (65/129) of the pathologic and more than two- third (93/126) of the idiopathic deformities corrected to the normal physiologic range. The higher the initial deformity, the higher the chance of under-correction in both treatment groups.

Conclusion: Eight-plate is an effective treatment tool for gradual correction of varus/valgus deformities. It is more effective at idiopathic deformities. In spite of its lesser efficacy in the management of pathologic deformities, eight-plates ease or delay more aggressive surgical intervention if at all fails to avoid.

Key words: Knee deformity, growth modulation, eight plate

Functional Outcome and Associated Factors of Subtrochanteric Fractures Treated with SIGN Intramedullary Nailing in a Resource-Limited Setting

Eyoel Tesfaye Tamiru, *Habtewold Mulat Ayele*

Introduction: Subtrochanteric fractures pose a significant challenge in resource-limited settings due to their complexity and limited access to advanced interventions. While cephalomedullary nails offer optimal treatment, affordability and infrastructure requirements often restrict their use. The SIGN nail, designed for resource-limited environments presents a potential alternative. This study aimed to evaluate the functional outcome of subtrochanteric fractures treated with SIGN intramedullary nailing at AaBET Hospital, Addis Ababa, Ethiopia, between 2015 and 2021, and identify factors associated with poor outcome.

Methods: A retrospective analysis of 43 patients with subtrochanteric fractures treated with SIGN nail was conducted. Data on demographics, medical history, injury characteristics, treatment details, and functional outcomes (modified Harris hip score) were collected through chart review, review of the SIGN database website and via telephone calls. Logistic regression analysis assessed the association between explanatory variables and poor functional outcome (score <70). Odds ratios (OR) and p-values were calculated to quantify the strength and significance of these associations.

Results: The median age was 28 years, with males comprising 81.4% of the sample. Motor vehicle accidents and bullet injuries were the leading causes of trauma. Open fractures were present in 27.9% of patients. The median modified Harris hip score was 78, with good outcomes (score ≥70) achieved in 67.4% of patients. Age (OR = 1.19, p = 0.02) and blood transfusion requirement (OR=9.7, p=0.037) emerged as significant independent predictors of poor functional outcome.

Conclusions: At AaBET Hospital, Addis Ababa, Ethiopia, SIGN nails offered a promising and affordable treatment option for subtrochanteric fractures. Functional outcomes were comparable to those achieved with other intramedullary nails. Age and blood transfusion requirement were identified as independent risk factors for poor outcomes, highlighting the importance of tailored management and minimizing blood loss.

Further research is warranted to explore the underlying mechanisms and personalize interventions for optimal patient care in resource-limited settings.

Keywords: Subtrochanteric fracture, SIGN nail, resource-limited setting, functional outcome, blood transfusion

Redefining Pelvic Inlet and Outlet view Angles in the Ethiopian population

Solomon Melkamu, *Gabriel Alemayehu, Samuel Hailu*

Introduction: Accurate radiographic assessment is pivotal in evaluating trauma patients with suspected pelvic ring disruptions especially in resource limited countries where computed tomography scan is not available. The conventional 45° inlet and 45° outlet radiographs for pelvic injury evaluation may not consistently align with varying lumbopelvic anatomy. This study aimed to determine optimal inlet and outlet radiographic angles to assess clinically relevant pelvic osseous landmarks and to investigate variations based on age, sex, and sacral dysmorphism.

Methods: This cross-sectional study was conducted at Tikur Anbessa specialized hospital, Ethiopia on non-trauma patients above 18 years without pelvic ring pathologies, using abdominopelvic computed tomography scans between January 1, 2023, and June 30, 2023. Midsagittal reconstruction and 3D rendering of 148 CT scans facilitated the measurement of pelvic inlet and outlet angles. Standard techniques based on previous studies were used to determine ideal angles. Statistical analyses investigated mean pelvic inlet-outlet view angles, and correlations with age, sex, and sacral dysmorphism using linear and logistic regression models.

Results: The mean pelvic inlet angle was 23.8±8.4° (95% Confidence interval (CI): 22.4-25.2°), while the outlet averaged 40.1±24.3° (95% CI: 39.2-41.1°). Male patients exhibited greater inlet angles (27° vs. 20°), whereas females had larger outlet angles (41° vs. 39°). Dysmorphic pelvis showed a 3.6° increase in outlet angles compared to normal sacral anatomy. An inverse relationship between age and inlet angle was observed, but age did not significantly impact the outlet angle.

Conclusion: This study highlights that the recommended 45° angles for pelvic inlet and outlet views might not align optimally with the Ethiopian population's anatomy. The findings suggest that ideal inlet and outlet angles for this population are 25 and 40 degrees, respectively. Understanding these variations is crucial for optimizing pelvic radiographic views in trauma evaluation, potentially leading to more accurate assessments and improved patient care in this demographic.

Key words: Pelvic x-ray, pelvic inlet, pelvic outlet, Caudal tilt, cranial tilt

Removal of broken solid intramedullary Nail of femur: A case report on removal technique in resource limited setup

Gemechis Regassa, *Binyam Dagnaw*

Introduction: Intramedullary nail is the main stay of treatment for femur shaft fracture. One of the potential complications of intramedullary nailing is nail breakage which can occur due to trauma or nonunion at any part of the nail. Removal of the distal end of solid nail which is away from the fracture or nonunion site is difficult which requires special devices.

Case presentation: This is 60-year-old male sustained road traffic injury 12 years back and treated for right floating knee injury (Femur shaft fracture, patellar and tibial plateau fracture) managed with retrograde nail of femur, tension band wiring for patella and plating for tibial plateau. Currently, presented with knee and distal thigh pain with decreased range of motion. Imaging shows right femur shaft nonunion with broken intramedullary nail and interlocking screw at the level of the proximal dynamic hole. We removed the proximal part with sign nail extraction system and the distal part of the solid nail was removed by pushing it to the tip of greater trochanter using another broken nail after opening over greater tuberosity.

Discussion: Broken nail far from the previous fracture or nonunion site are quite difficult to remove the distal end. It is technically demanding procedure that requires different techniques and special extraction tool. Several techniques have been described including widening the canal, development of bony windows, Pushing or pulling using various instruments.

Conclusion: Broken distal end of solid retrograde nail can be removed by pushing with another nail to the tip of greater trochanter in resource limited setup. Nail removal should be performed with meticulous preoperative planning and preparation of different extraction devices.

Keywords: -solid Nail, Extraction, broken, removal of nail

A Life Devoted to Ethiopian Orthopedic Excellence: Healing the fractured bone and build local capacity

When we see the history of modern orthopedic development in Ethiopia, there is one giant person mentioned as one of the pioneers in providing advanced orthopedic service and significantly boost the orthopedic academia in Ethiopia. Based on his significant involvement for Ethiopian Orthopedics, Ethiopia Society of Orthopedics and Traumatology (ESOT) interviewed Dr. Duane Anderson, who has dedicated most of his life at Sodo Christian Hospital (SCH) in Ethiopia, for the 2024 Annual General Meeting (AGM) and scientific conference magazine. ESOT invites readers to enjoy his impressive interview below.

ESOT: It is our pleasure to interview you for our 2024 AGM. To start with, can you share your medical background, family life, and what led you to pursue a career as an orthopedic surgeon?

Dr. Duane: My journey began with a calling from God I felt at a young age, inspired by a missionary nurse. After marrying my wife, Jackie, I pursued medical school, driven by a desire to serve. Residency, children, and the loss of my father delayed my mission work. So, my practice in the US totaled 17 years but throughout those years the call persisted.

ESOT: What inspired you to leave a successful orthopedic practice in Idaho and relocate to Soddo, Ethiopia?

Dr. Duane: In 1998, I was diagnosed with prostate cancer. It felt like a wake-up call from God, urging me to pursue my calling before it's too late. I began medical missions in West Africa Cameroon. In 2003, at a conference, I met Harold Adolph, the founder of Soddo Christian Hospital (SCH) and he invited me to visit. The next year, I brought a set of surgical nails and performed the first SIGN Nail in Ethiopia at Otona Hospital, which was previously a Mission Hospital. In September 2005, I transitioned to SCH. Despite challenges, the calling to serve in Ethiopia was undeniable. Initially, I faced challenges as the only orthopedic surgeon in southern Ethiopia. Patient volume was low, so I actively sought out cases and gradually built up the practice. Eventually, the demand grew, and I operated and saw patients daily.

ESOT: How has practicing orthopedic surgery in Africa differed from your experiences in other parts of the world?

Dr. Duane: Transitioning to practicing in Africa from my experiences in the US was starkly different. The spectrum of orthopedic cases in Africa, from fractures to tropical diseases, is diverse. In the US, acute trauma cases like sprains and fractures are common in emergency rooms, whereas in Africa, diseases like tuberculosis and polio are more prevalent. In Africa, we deal with a broader range of orthopedic problems, including Chronic fractures, dislocations and traditional practices like the "Wogesha". Despite the difficulties, my 18 years in Ethiopia at Soddo Christian Hospital have been incredibly rewarding. I believe it was part of God's plan for me.

ESOT: Can you share any particularly memorable patient experiences from your time at Soddo Christian Hospital?

Dr. Duane: Patients like Melesse, my Ethiopian son, a young boy who snuck into the clinic with severely disabled legs caused by Polio; and over the years following multiple surgeries to straighten out his legs transformed from a disabled child to an employer of 25 to 40 disabled individuals.

Another memorable patient is a woman from the Somali region who came in with a severely infected femur fracture. Over four years and nearly ten surgeries later,

including complications like septic arthritis and cellulitis, she became like a daughter to me. Despite numerous setbacks, including a broken elbow and nerve damage, she maintained her resilience and determination. Recently, I operated on her knee, and while her progress has been slow, her determination is unwavering. These patients' stories highlight the resilience and compassion that I've encountered during my time at SCH.

ESOT: What are some of the key lessons you've learned throughout your career?

Dr. Duane: One key lesson I aim to impart is the importance of over preparing for surgeries to ensure the best possible outcomes. This implies know the anatomy, think through each step of the operation and strive for innovation, perfection in your approach. Minimize surgical trauma while maximizing accuracy and safety, even if it means making larger incisions.

ESOT: Balancing patient care, training residents, and administrative responsibilities can be challenging. How do you manage these tasks effectively while running SCH?

Dr. Duane: Collaboration, delegation, and prioritization are essential. A supportive team and family contribute to maintaining a balanced workload and personal well-being.

ESOT: You were honored with the humanitarian award from the American Academy of Orthopaedic Surgeons (AAOS) in 2024. How has this recognition impacted your work and personal perspective?

Dr. Duane: Receiving the humanitarian award was a humbling experience

and a testament to the collaborative efforts of many individuals, including my colleague Lewis Zirkle, whom I nominated for the award actually. It reaffirms the importance of our collective efforts in promoting orthopedic care in Ethiopia. It inspires me to continue making a positive impact.

ESOT: What motivates you to continue your work in Ethiopia, after 18 years of dedication?

Dr. Duane: As a Christian orthopedic surgeon, my motivation stems from a desire to improve the lives of patients medically and spiritually. Seeing patients recover from debilitating conditions and witnessing the transformation in their lives is incredibly rewarding. SCH has provided a platform to not only provide quality medical care but also share the message of God's love and redemption through Jesus Christ. This dual mission drives me to continue serving in Ethiopia, knowing that our work has eternal significance.

ESOT: What advice do you have for young orthopedic surgeons aspiring to make a difference in underserved regions?

Dr. Duane: I can't stress enough the significance of collaboration and teamwork in delivering high-quality orthopedic care. Having access to essential technology such as implants, X-ray, and a C-arm is necessary for good outcome. Furthermore, building a committed team of healthcare professionals, including nurses and anesthetists, is vital for ensuring excellent patient care. Young surgeons need to advocate for the resources required to effectively serve underserved areas with dedication to create a lasting impact.

ESOT: Can you share a bit about how your family has been involved in your work? Any memorable experiences or sacrifices they've made along the way?

Dr. Duane: Well, the one who's made the biggest sacrifice is my wife, Jackie, and we have four children and 11

grandchildren. All of those grandchildren were born in the last 18 years, when we were in Ethiopia; we made the births for some of them, not all of them. And we've missed many birthdays, many Christmases; many holidays with family. My family's sacrifices and support have been invaluable. Despite missing milestones, their unwavering commitment inspires and sustains me.

ESOT: What are some of the most significant changes or advancements you've witnessed in orthopedic care during your career?

Dr. Duane: Improvements in acetabulum fracture care, retrograde nailing, and the direct anterior approach to the hip have revolutionized orthopedic surgery. Understanding of elbow injuries through the work of Dr. Shawn O'Driscoll has also evolved significantly.

ESOT: How do you envision your involvement in orthopedic surgery or humanitarian efforts looking forward: Any plans for continued service or mentorship?

Dr. Duane: Continued mentorship, research, and collaboration are priorities for me. Online platforms like the SIGN WhatsApp group, the cubitus Mundi WhatsApp group and the file sharing group that I started are things I want to continue to engage in.

We have a number of ongoing studies at Soddo, that I would like to publish and hopefully popularize including the treatment of proximal Tibial fractures with traction and minimal fixation, our anterior approach to the acetabulum, treatment of chronic shoulder dislocations and more. Doing Zoom teaching webinars, individual mentorship of my partners in Ethiopia, operating and my administrative role at SCH will continue for the foreseeable future. I am constantly thinking about how I can empower and advance the Ethiopian orthopedic surgery landscape.

ESOT: Thank you very much for your willingness and time for this interview. Wishing you long life and many more years of service.

(Interviewed by: Dr. Amanuel Leulseged, Orthopedic Surgeon at Sodo Christian Hospital)

Impact of Traditional Bone Setting on Functional Outcome and Quality of Life After Musculoskeletal Injuries: A Population-Based Study in Sidama Region, Ethiopia

Ephrem Gebrehana, *Taye Gari, Mengistu G Mengesha, Endrias Markos Woldesemayat, Eden Alemu, Claude Martin Jr., W James Harrison*

Introduction: At the community level, evidence regarding the burden of musculoskeletal injuries is scarce and the impact of traditional bone setting is difficult to assess. The main objective of this study is to take a community-based approach to determine the clinical outcomes, risk factors, and Health-Related Quality of Life (HRQoL) following a musculoskeletal injury in the Sidama Region, Ethiopia.

Methods: From December 2022 to January 2023, we conducted a population-based cross-sectional study and identified 830 participants who sustained extremity injuries. Demographic data, injury and type of treatment details, complications, and patient-reported HRQoL were collected using a pre-tested questionnaire. The association between complications, HRQoL, and risk factors was analysed using binary logistic and linear regression models, respectively.

Result: Over half of the participants (56 %) developed complications and 558 (67 %) were treated by a traditional bone setter (TBS). An increased risk of developing complications was associated with: low economic status (AOR 2•96, 95 % CI: 1•91- 4•58, P < 0•001), lack of formal education (AOR 2•38, 95% CI: 1•43- 3•98, P = 0•001), and TBS treatment (AOR 4•15, 95% CI: 2••88-5•97, P < 0•001). Similar factors were found to increase the risk of poor HRQoL.

Conclusion: With a high incidence of complications among the study population, TBS treatment, lack of education, and poverty were found to increase the risk of developing complications and having a poor HRQoL. The Ministry of Health should regulate the scope of TBS' practice to prevent severe injury-related complications, especially among the vulnerable population.

Keywords: Musculoskeletal injury, fracture, Sidama, TBS, complications, BOSAD study

Determinants of early complications in femur neck fractures following operative management: A single center retrospective study

Teshome Tena, *Mengistu G Mengesha, Gabriel Alemayehu, Samuel Hailu*

Introduction: The early outcome of femur neck fracture in resource limited set up is not well studied. This study assesses factors affecting early complications after fixation of femur neck fracture.

Method: This is a three-year retrospective study where all fixed femur neck fractures from a single tertiary institution in Addis Ababa, Tikur Anbessa Specialized Hospital, were reviewed. Data was analysed with SPSS version 29 and results were summarized by text and table. The association between risk factors and the outcome variable was assessed using statistical significance set at p <0.05.

Results: A total of 78 patients were included where 57 (73%) patients were male and mean age was 37 years. The average time from injury to surgery was 17.8 days; more than two third of patients were operated after 07 days of the injury. Sixty-seven (85.9%) were displaced and 9 were classified as Pauwels type III (angle >70°). There were 22(28.2%) non-acceptable fracture reductions according to Garden alignment index. Twenty-nine (37.2%) patients had developed complications where fixation failure was commonest occurring in 20(25.4%) followed by non-union 6(7.7%) and AVN 3(3.8%). From the multivariate analysis, patients who had unacceptable garden alignment index were significantly associated with early complications (AOR - 27.43; 95%CI 5.62-133.95, p<0.001), while the presence of revision was marginally associated with early complications (AOR- 21.7, 95% CI 0.69-1000, p= 0.079).

Conclusion: In fixation of femur neck fracture, achieving anatomic reduction, assessed via the immediate postoperative Garden alignment index, predominantly influences early complications. Time from injury to surgery doesn't significantly impact early outcomes, suggesting operability beyond 7 days in resource-limited settings.

Keywords: Risk factors, Femur neck fracture, early complications, Garden Alignment index, Ethiopia

Orthopedic postoperative infection profile and antibiotic sensitivity of 2038 patients across 24 countries – Call for region and institution specific surgical antimicrobial prophylaxis

Mengistu G Mengesha, *S Rajasekaran, MICROS study collaborators*

Introduction: Improper utilization of surgical antimicrobial prophylaxis frequently leads to increased risks of morbidity and mortality. This study aims to understand the common causative organism of postoperative orthopedic infection and document the surgical antimicrobial prophylaxis protocol across various institutions in order to strengthen surgical antimicrobial prophylaxis practice and provide higher-quality surgical care.

Methods: This multicentric multinational retrospective study includes 24 countries from five different regions (Asia Pacific, South Eastern Africa, Western Africa, Latin America, and Middle East). Patients who developed orthopedic surgical site infection between January 2021 and December 2022 were included. Demographic details, bacterial profile of surgical site infection, and antibiotic sensitivity pattern were documented.

Results: A total of 2038 patients from 24 countries were included. Among them, 69.7 % were male patients and 64.1 % were between 20 and 60 years. Around 70 % patients underwent trauma surgery and instrumentation was used in 93.5 %. Ceftriaxone was the most common preferred antibiotics in 53.4 %. Early SSI was seen in 55.2 % and deep SSI in 59.7 %. Western Africa (76 %) and Asia-Pacific (52.8 %) reported a higher number of gram-negative infections whereas gram-positive organisms were predominant in other regions. Most common gram-positive organism was Staphylococcus aureus (35 %) and gram-negative was Klebsiella (17.2 %). Majority of the organisms showed variable sensitivity to broad-spectrum antibiotics.

Conclusion: Our study strongly proves that every institution has to analyse their surgical site infection microbiological profile and antibiotic sensitivity of the organisms and plan their surgical antimicrobial prophylaxis accordingly. This will help to decrease the rate of surgical site infection, prevent the emergence of multidrug resistance and reduce the economic burden of treatment.

Key words: MICROS study, postoperative infection, microorganism, sensitivity

Risk Factors for Delayed Presentation Among Acute Trauma Patients in Southern Ethiopia

Mengistu G Mengesha, *Lewam Mebrahtu, Ephrem G Adem, Sintayehu Bussa, Anteneh Gadissa, Trauma Thematic Study (TTS) Group**

Introduction: The burden of injuries is high in low- and middle-income countries such as Ethiopia, where access to trauma care is limited. Delayed presentation to hospital can worsen trauma-related disability. Understanding risk factors for delayed hospital presentation will assist in guiding trauma system development.

Methods: A total of 1,262 patients with trauma presented to one government tertiary institution (Hawassa University referral Hospital), and two private institutions (Yanet trauma center and Alatiyon general Hospital) were included. We used multivariate logistic regression to evaluate the association between delayed presentation and 23 covariates including age, sex, education level, occupation, season of injury, day of injury, injury mechanism, referral status, residence, body part involved, financial coverage and others.

Results: The mean age of patients were 33 (+/- 15) years and 84 % were male. Around 88 % were covered their medical treatment from out of pocket (OOP) payment. Mean time from injury to presentation was 11 +/- 24 hours and weekdays account majority of trauma (73.7%). Only 13.8% were having severe trauma and 47.2% presented with ambulance to the health facilities.

Around 65% of trauma patients presented delayed for treatment. Private institution (OR, 2.42 [1.75,3.35]), rural residency (OR, 1.57 [1.14,2.17]), bullet injury (OR, 10.1 [2.79,36.57]), lower extremity injury (OR, 2.48 [1.71,3.6]), OOP financial coverage (OR, 1.68 [1.11,2.54]) and presence of bleeding (OR, 4.78 [3.45,6.61]) were independently increased the risk of delayed presentation.

Conclusions: Delayed presentation to the hospital after trauma was common in southern part of Ethiopia. Interventions are needed to improve access to bullet injury with bleeding and lower extremity injury patients.

Key words: Trauma thematic study, delayed presentation, risk factors, Ethiopia

Pollicization of Index fingers for Bilateral Hypoplastic Thumbs of Twin Babies: Case series at Cure Children's Hospital of Ethiopia.

Tuji Mohammed, *Tewodros Tilahun Zerfu, Mesfin Etsub Kassahun, Tesfaye Mulat Jimma*

Introduction: Thumb hypoplasia is a congenital birth defect in which a child is born with an underdeveloped or missing thumb. It is a rare condition affecting approximately 1 in 100,000 live births and occurs equally in both males and females. Pollicization is a surgical procedure used to treat severe thumb hypoplasia by transferring another finger to the thumb position.

Case presentation: Twin girls aged two years and eight months, born to a 42-year-old para III mother, presented with bilateral thumb hypoplasia. There was no family history of similar complaints, and no consanguinity was identified between their parents. After excluding other associated anomalies, index finger pollicization was performed for all four hands of the children according to modified Buck-Gramcko techniques, with modifications from Ezaki et al.

Conclusion: Generally, index pollicization executed with careful preoperative, intraoperative, and postoperative planning will lead to aesthetically and functionally attractive thumbs for children with congenitally severe hypoplasia or absent thumbs.

Key words: Pollicization, Thumb hypoplasia, Congenital, Twin Baby

Atypical cause of Femoral artery vascular injury secondary to arrow injury: A case report

Getaneh Workneh kassa

Introduction: Despite the most common causes of vascular injuries are road traffic accident, bullet and stab injuries, vascular injury following arrow injury is rare. This is a unique and atypical form of injury where there is no bone involvement hence doesn't need skeletal stabilization. Arrow injury are rare form of trauma worldwide and damages tissue by perforation, laceration or cutting but there is no adjacent soft tissue injury unlike that of bullet and road traffic injury. Management of vascular injury after arrow injury requires meticulous techniques for removal and vascular repair.

Case presentation: This is a 25 years old female patient presented with arrow injury to the left thigh of 2 hours duration; she had no trauma in other body parts. On examination she had in situ arrow in the left antero-medial mid-thigh but distal pulse was diminished with intact sensation and motor function. She was taken immediately to the operation theater after x-ray imaging and meticulous arrow removal and successful femoral artery repair done, patient discharged with full recovery.

Discussion: Arrow injuries are rare form of injuries globally so that most of the surgeons don't have basic skill and knowledge how to treat these injuries. It can involve any part of the body in which management depends on the anatomic site involved, patient stability at initial presentation and the presence of experienced personnel. Vascular injury following arrow injury is different from other causes of trauma because the arrow usually will stack in the vessel especially great vessels creating tamponade effect and preventing from exsanguination. Treatment of vascular injury due to arrow injury is always surgical and requires careful exploration to avoid secondary injury because of the presence of blebs or hooks in the arrow.

Conclusion: In evaluation of arrow injury patients, it is always wise to do through physical examination to rule out repairable vascular injury so that we will have a clear and backup plan for vascular surgery. Exploration for suspected vascular injury should be meticulous to avoid secondary trauma from removing the blebs.

Key words: Arrow; Arrow injury; vascular injury; vascular repair

Prevalence and Associated Factors of Surgical Site Infection after Intramedullary Nailing for Open Femur Fracture at Tibebe Ghion Specialized Referral Hospital, Bahir Dar, Ethiopia

Ashraf Chumeto, *Workneh Mengesha, Gebeyaw Wude, Dawit Alem*

Introduction: Surgical site infection (SSI) is disastrous in orthopedic practice. Despite being a preventable complication of surgical procedures, SSIs continue to threaten public health with significant impacts on the patients, the health-care resources; It was expected to have similar impact at Tibebe Ghion Specialized Hospital (TGSH). This study aimed to assess prevalence and associated factors with surgical site infection after intramedullary nailing with Surgical Instrument Generation Network (SIGN) of open femur fracture.

Methods: A cross sectional study was used to conduct the study on all patients admitted with a diagnosis of open femur fracture and operated with SIGN nails in the orthopedic and trauma surgery department at TGSH from January 1/2020 to July 1/2023. Those fulfilling the inclusion criteria were included in study group. The data was collected from patient charts, hospital records and SIGN surgical database. Analyses were made by Binary logistic regression to find out the association between infection and associated factors. The strength of association was estimated using AOR with 95% confidence interval and P <0.05.

Result: A total of 115 of 125 patients (92%) were included and 100 were male patients with the mean age of 30 years. The estimated prevalence of SSI was 12.2%. Binary logistic regression showed that timing of starting antibiotics from injury (AOR, 3.9; 95%CI 1.1-15.3) and number of debridement before definitive surgery (AOR, 3.9; 95%CI 1.1-14.0) was significantly associated with SSI.

Conclusion: The prevalence of SSI was relatively low which might be due to increased experience of orthopedic team in TGSH managing patients with open fracture timely. Delayed timing of starting antibiotics more than 6 hour and more than one debridement before definitive surgery were statistically associated with surgical site infection.

Key words: Femur fracture, intramedullary nail, Open fracture, surgical site infection

Psoas Abscess caused by Retained Pencil of Eight years: A rare case report

Temesgen Zelalem, *Samson Tule, Biruk Tafesse*

Introduction: Iliopsoas abscess, characterized by suppurative fluid accumulation around the psoas and iliac muscles, typically arises from hematogenous or contiguous spread of infection. While psoas abscesses due to foreign bodies have been reported, cases involving a retained pencil are exceedingly rare.

Case Presentation: A 22-year-old male presented with a history of falling onto a sharpened pencil eight years prior, resulting in injury to his right flank. Five years later, he developed right hip pain, leading to surgical drainage for an abscess around the lateral hip. Persistent discharge from the surgical site prompted further investigation, revealing a foreign body within the right psoas muscle. Open surgery was performed to remove the retained pencil, following which the patient showed improvement.

Conclusion: Psoas abscesses secondary to foreign bodies' present unique challenges. Imaging modalities such as computed tomography and MRI aid in diagnosis. While most cases are managed conservatively, prompt intervention, including open surgery for foreign body removal, may be necessary in select cases of penetrating trauma.

Keywords: Psoas abscess, foreign body, pencil, computed tomography, open surgery, Soddo Christian

Clubfoot Treatment in Ethiopia: From neglect to Public Health issue

Birhanu Ayana

Introduction: An estimated 5000 babies are born per year with clubfoot in Ethiopia. Congenital idiopathic talipes equinovarus(clubfoot) is one of the most common and disabling conditions affecting children. The majority of these children are not able to get treatment early, and they grow up with deformities, making the management challenging for the care provider and the family. The treatment methods have been controversial over centuries till the innovative technique has emerged (The Ponseti method). In 2005, the method was adopted at the Department of Orthopedic Surgery, School of Medicine, Black Lion Hospital. A collaborative partnership was created between stakeholders in 2007 to implement a national clubfoot care program using Ponseti method of treatment. This presentation aims to review the clubfoot treatment experience over the past 18 years and the challenges encountered.

Methods: A nationwide program establishment and a clubfoot clinic set up at regional general hospitals and university hospitals were undertaken. Gradual expansion of clubfoot service throughout the country implemented and expected to expand more. An experience of the Ponseti method was reviewed since it was adopted.

Results: At the beginning of the program, six clinics were established which are still active, and currently, the number has increased to 63 clinics. A total of 25 thousand patients have been treated so far and freed from clubfoot disability. Most clinics have problems with provider turnover, logistics and ownership issues.

Conclusions: Overall, the establishment of a nationwide club foot treatment program was successful and has played a crucial role in expanding the Ponseti clubfoot treatment all over the country to prevent lifelong clubfoot disability. In a low-income country like ours with many demands on health funding, different challenges need to be addressed. The supply of materials, clinic staff issues, barriers to treatment and ownership problems require further study.

Key words: Club foot, neglect, public health, Ethiopia

Understanding Radiation Safety Precautions Among Orthopedic Residents and Consultants in Addis Ababa, Ethiopia

Kalkidan Ayalew Mulat, *Milkyas Tsehaye, Gizachew Taddesse Akalu, Kumlachew Abate, Mebratu Abraha Kebede*

Introduction: In the realm of orthopedic practice, the use of fluoroscopy is commonplace, facilitating both preoperative planning and operative interventions. However, mounting evidence highlights the escalated risk of radiation exposure associated with this practice. Despite this, there persists a notable deficiency in the knowledge, attitude, and practice of radiation safety precautions among orthopedic residents and surgeons.

Objective: This study aims to evaluate the comprehension, perception, and implementation of radiation safety precautions among orthopedic residents and surgeons at Addis Ababa Burn, Emergency, and Trauma Hospital and Tikur Anbessa Specialized Hospital.

Method: Institutional based cross-sectional study was conducted from January to March 2020 among 114 participants who are working in the operation room. Data collection was executed by trained orthopedic residents and analysis was done by SPSS version 23. Both descriptive and analytical statistics were employed.

Results: Of the 114 participants, the majority were under 30 years old (57 %) with a mean age of 29.8 (±3.3). Most of them were male (88.6%) and 90.4% of participants were orthopedic residents. Findings revealed that 48.2%, 52.6%, and 43.9% of orthopedic residents and consultants exhibited poor knowledge, negative attitudes, and inadequate practices concerning radiation safety, respectively. Notably, exposure to training emerged as a statistically significant variable associated with attitude (AOR; 10.96 (95%CI; 2.90, 41.39).

Conclusion: This study shows that there is significant lack of knowledge, negative attitudes, and poor practices towards radiation safety precautions among orthopedic residents and consultants. As such, there is a critical need for heightened awareness through tailored training or educational interventions targeting this demographic to mitigate the risks associated with radiation exposure.

A Gifted hand surgeon: A surgeon trained in both Orthopedic and Plastic Surgery Fellowship

Most of the time, once we finished the undergraduate medical school, we want to proceed with residency program followed by specialty and sub specialty training to master specific skill and knowledge in depth. When there is a cross cutting disciple like hand surgery, there may be a need to do fellowship in both separate, but interrelated disciplines. One of the world leading hand surgeons who have such type of experience is Dr. Duretti Fufa, and for this year ESOT 2024 Annual General Meeting (AGM) and scientific conference magazine, we interviewed her and invite you to read her astonishing achievement.

ESOT: Thanks a lot for your time and accepting our invitation for interview. Tell us a bit about your upbringing.

Dr. Duretti: I was born and raised in Minneapolis, Minnesota. My father was the second Ethiopian to come there in 1973, and my mother came to the US from Hong-Kong and they met while they were in college. Me and my sisters were raised there until university, and I went to the east coast afterwards in Harvard for university, and medical school. I often get asked if any one form my family is a doctor but both my parents were teachers and I think that has influenced my interest in being a teacher in orthopedic surgery as well as a surgeon.

ESOT: we have all been intrigued to know more about your dual fellowships in orthopedics and micro vascular surgery. Can you tell us about the motivation behind it and how it has enhanced your practice?

Dr. Duretti: when I was in medical school, my other interest on top of orthopedic surgery was plastic surgery, and hand surgery was a nice specialty to find because it was a mixture of both, and as I got in to my hand surgery fellowship, I really liked the soft tissue reconstruction aspect and I asked a mentor, Scott Levin who up until recently was the chairman of orthopedic department at the university of Pennsylvania, and I did not know him at all but he was the father of Ortho-plastic surgery and so I walked up to him in a meeting and said I want to do what you do, how do I get the training and he told me that I should do this fellowship in Taiwan, a well- known international fellowship. It's not very common in the US to do two fellowships but I did another year in training, and I got to live in Asia which is the other half of my heritage. So, the motivation to do this was I wanted to develop the skill for hand surgery from the plastic surgery side and get more skill to really be confident on soft tissue coverage and free flap.

ESOT: How was the inclusion of female orthopedic residents and fellows in your program during your training years, and how do you assess the progress that has been made so far.

Dr. Duretti: There is a progress but there is a long way to go to get where we want to be in terms of being able to be doctors who represent the types of patients we take care of .In my residency, more than a decade ago now, fortunately close to 25% were females which was probably a little bit ahead of most orthopedic programs, and also Hospital for Special Surgery had a very good culture where we had established female orthopedic surgeons so they were good role models for us and we knew very well that females could be orthopedic surgeons. Today, I am the residency program director and working on the hospital culture and recruiting quality men and women in to our specialty. Now our residency is 1/3 female, and in the new class of 9 residents we have, 6 of them are women which is the first time we have majority women trainees, so I think it's an exciting time in terms of including more women in our specialty.

ESOT: How did you start your CURE Ethiopia children's hospital campaign?

Dr. Duretti: I was really lucky to see a presentation by Dr

Scott kozin about places he had been to and he had Ethiopia listed as one of the places he will be going to. I did not know him at the time but I just emailed him saying "I have family

heritage there and I have done some outreach before do you have any space on the trip", he said "yes" and now we are on our 7th trip. Of course, the family connection is what started it but I have done some international work previously in China, and couple of other countries, and the concept of learning how medicine is practiced in other countries is interesting to me.

ESOT: How do you assess the impact it has made to the care of hands in Ethiopian children?

Dr. Duretti: Every time we are there, we keep tracking the number of children we see and we operate on. We also keep close contact with Doctors in CURE to know how they are doing and get follow up. But I think the most impactful part is the relationship we were able to form over the years working with the same surgeons and being able to do the surgeries on their own now and whatever number of patients we treat in one week is multiplied by so many more when the skills are transferred all year round, so there are quantifiable things we do on the week there but much more meaningful is the knowledge exchange and the ongoing care our friends and colleagues are able to give.

ESOT: What is your favorite memory in Ethiopia?

Dr. Duretti: I have only been to Wollega once but it really left such an impression on me, how beautiful it was there, and how life is being lead. Addis is a big city and it looks much more modern and bigger now than it looked when I first got there. The place where my dad is from, there is still no electricity, and running water in some places, they farm the food they eat, I thought it was so beautiful there and it's amazing to me that my dad was born there and I have been lucky to be born here in one generation. They also showed me the avocado tree my dad planted and I was able to see how everything stayed the same.

ESOT: What is the major difference between your orthopedic practice in Hospital for Special Surgery (HSS) and the one you have seen in Ethiopia.

Dr. Duretti: My hospital is an orthopedic specialty hospital. It allows the practice and the business to be very specialized and provide an exceptional care, CURE is a really impressive example in Ethiopia, in that way I see some similarity. For some hospitals like Black Lion, the difference is like the practice in HSS and a big county hospital where orthopedics is only the small part of the big hospital and you need so many resources to care for the super sick patients and orthopedics may not get much attention, but the commitment and the outstanding skill of the physicians had come to be similar, and Dr Scott and myself were very impressed with the knowledge, skill, and hunger for knowledge of the residents.

ESOT: For all the young female surgeons who follow your path, what do you advise them to thrive in orthopedics and create a family- career balance

Dr. Duretti: It's a challenge not only for women but for everybody to let go of the workaholic and realize that it's really important to balance life and take care of ourselves and maintain the relationships we have with our family. In the US, we have a big focus on physicians burn out and how physicians and especially women are leaving medicine and some of them taking their lives too. To me, the worry that I need to work harder to keep up with my male colleagues may be good to push yourself further but sometimes it will tire you so it's important to give ourselves space and time to continue to be ourselves.

ESOT: What are your hopes for the future of orthopedics in Ethiopia

Dr. Duretti: I will say ever thing I have seen exceeded whatever I had in mind going in with how orthopedics might be practiced in Ethiopia, and the training there. I wish to see more sub-specialized care for patients and I know we have more opportunity to develop surgical skill and autonomy for residents where they have opportunity to do hands-on training with cadavers, simulations and other virtual training models, and we are focusing on ways to assess skill as it is harder than knowledge to evaluate more objectively. I hope for trainings to acquire such opportunities, and for centers to develop tools to evaluate when residents are safe to practice if they are given a chance to scrub with surgeons, especially in Ethiopia where trainees are expected to practice in different environments. I hope as more people get exposure to sub-specialties either by training abroad or from visiting doctors, their trainings will be given in Ethiopia like what I saw in CURE and hope that will continue to grow as well.

ESOT: Thanks a lot for your time and sharing your amazing experiences.

(Interviewed by: Dr. Bezawit Teferi, Orthopedic Surgeon at Tikur Anbessa Specialized Hospital)

A Journey of Growth: The Orthopedic Department at Haramaya University, Harar

The Orthopedic Department at Haramaya University, Harar, was under the stewardship of a single orthopedic surgeon, Dr. Tekalegn Tsegaye before 2019. When Dr. Tekalegn embarked on a one-year pediatric orthopedic fellowship, he left behind a unit comprised of two recent graduates from Tikur Anbessa Hospital - Drs. Bruh Kefale and Moa Chali. At that time, the department operated under general surgery, equipped modestly with essential resources, including a functioning SIGN nail program. We conducted surgeries twice a week, sharing operating days with general surgery and gynecology, and managed a limited capacity of ten beds.

Some of the Staff and residents during a TSF and Ilizarov frame application training program

Despite the challenges, our team persevered with diligence and dedication over the subsequent three years. By 2022, our efforts bore fruit as orthopedics was elevated to an independent department. Physically relocated to a separate trauma center, where we expanded our capacity to accommodate over 27 beds and introduced two dedicated operating rooms with round-the-clock access. Furthermore, we were granted authorization to initiate our own residency program, which currently includes eleven residents distributed across three cohorts: four in the first year, four in the second year, and three in the third year.

Morning teaching led by Dr. Tekalign

In the following two years, our team welcomed three additional staff members: Drs. Beakal Bogale, Biruk Fikadu and Tsegalem Birilie. With this expansion, our department has flourished, fueled by a youthful, dynamic, and motivated workforce. We are grateful for the unwavering support of Haramaya University administration and have forged robust partnerships with esteemed organizations such as the Australian Doctors for Africa (ADFA), the AOA Foundation, the Spanish Agency for International Development Cooperation (AECID), and our longstanding benefactors, the SIGN organization.

Currently, we are in discussions with university and hospital administrators to further enhance our services, both in education and patient care, with the aim of doubling our current capacity within one year. We extend an open invitation to other organizations interested in collaborating with us, as we aspire to become the premier orthopedic center in Eastern Ethiopia. Our journey continues, driven by a commitment to excellence and a vision of continual improvement.

Compile by -Dr Bruh Kefale

Two of our COSECSA laureates, Dr.Beakal(Right) and Dr.Biruk(Left)

Adama Hospital Medical College: A Legacy of Healing and Education

Established in 1943GC by American missionaries as a health facility, Adama Hospital has stood as a beacon of healthcare in our community for over eight decades. Originally founded to serve the medical needs of the local population, the hospital underwent a significant transformation in 1981GC when ownership was transferred to the government and it was renamed Hailemariam Memorial Hospital.

In 2011GC, a pivotal moment in our institution's history arrived as we embraced our role as a teaching hospital. With this evolution came a new name - Adama Hospital Medical College (AHMC) - signifying our commitment to both healthcare and medical education. This milestone marked the beginning of a journey toward excellence in medical training and patient care.

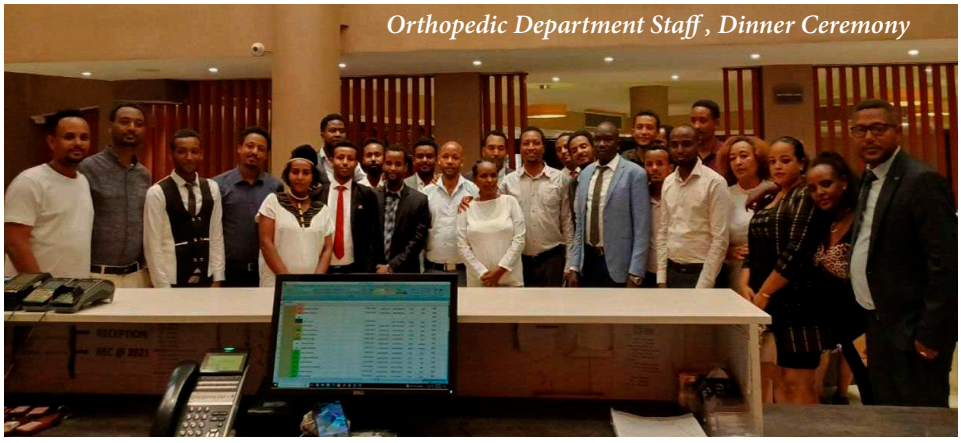
One significant development in our medical services occurred in 2011GC with the establishment of the Orthopedic Department. This addition enhanced our capacity to provide specialized care for orthopedic conditions and traumatic injuries, addressing crucial healthcare needs within our community.

In 2018 GC, we further expanded our surgical capabilities with the introduction of the Surgical Implant Generation Network (SIGN) surgery. This initiative enabled us to offer advanced orthopedic procedures, improving outcomes for patients with complex musculoskeletal conditions.

Building on our commitment to medical education, AHMC launched its residency program in 2022 GC. This program provides aspiring physicians with comprehensive training in Orthopaedics surgery, ensuring a pipeline of skilled healthcare professionals to serve our community and beyond.

Pic 1. First Orthopedic Surgery Residency Batch, Welcoming ceremony

Today, Adama Hospital Medical College boasts a dedicated team of healthcare professionals, including seven orthopedic and trauma surgeons, with one undergoing subspeciality training. Our residency program has seen three batches of residents, totaling 18 individuals, who are passionate about advancing their medical knowledge and skills.



Orthopedic Department Staff , Dinner Ceremony

As we look toward the future, Adama Hospital Medical College remains steadfast in its commitment to excellence in healthcare delivery, medical education, and community service. With a total of 32 patient beds and two operating room tables dedicated to the Orthopedic Department, we continue to prioritize patient-centered care and surgical excellence.

At the helm of our institution is Dr. Sintayehu Tekle (MD, Orthopedic Surgeon), hospital provost; whose leadership and expertise drive our mission of healing, education, and innovation.

Compiled by-Dr Sintayehu Tekle

Hawassa University College of Medicine & Health science, Department of Orthopedic: Aspire to be the leading institution in Clinical service delivery, Research and Academia

It has been nearly nine years since Orthopedics practice has been developed in Hawassa University, College of Medicine and Health Science under the leadership of Dr. Ephrem G Adem in 2015. Now, Department of orthopedics in Hawassa University become one of the leading mother departments in providing high label clinical service with specialist and sub specialist physicians, evidence generation with problem solving clinical studies and leading the teaching and learning process for orthopedic residency and undergraduate medical students. These all activities are being done with the help of unreserved support from Hawassa University Administrative bodies coupled with long time collaborators including AO Alliance, Australian Doctors for Africa (ADFA), SIGN international fracture care, NOTAA, Cure International Children Hospital, Addis Ababa University, Tikur Anbessa Specialized Hospital and many other institutions and non-profit organizations.

Orthopedic Residency Program in Hawassa University: After long waiting time, one of the landmark achievements that happened in the department of orthopedic is the launching of Orthopedics Residency program in 2021. Currently the department has 29 residents in row from first year to graduating class (8 are graduating class). In order to create favourable teaching-learning process, the department design a new norm of teaching where the consultants will give lecture series on specific topics (like Spine and pediatric orthopedic) in addition to the resident major seminar, so that learning will happen from both sides.

Orthopedic surgery Staff status: Currently, there are numerous engagements with ten full time senior physicians including four subspecialists (two in Advanced Trauma and Arthroplasty, one Orthopedic spine surgery and other one subspecializes on pediatric orthopedic surgery). Soon, the fifth orthopedic surgeon will go abroad for Arthroscopy and sport sub speciality training. Currently, the department has different units to fasten the service including unit of general orthopedics, Advanced trauma and joint replacement, Spine unit and pediatric orthopedic surgery unit.

Clinical service and Infrastructure: Over the past years, Hawassa University, department of Orthopedic perform numerous activities to strengthen the clinical service provided for the patients and build infrastructures including inpatients ward renovation, outpatient clinic and establishment of a new brand operation theatre room.

The newly established orthopedic dedicated operation theatre was inaugurated on march 26, 2023 in the presence of Dr. Selamawit Mengesha, Sidama national regional state Health Bureau head; Dr. Ayano Berasso, Hawassa University president; Dr. Graham Forward, ADFA founding director and CEO; Dr. Claude Martin, AO Alliance managing director; different stakeholders and invited guests. Now, the new theatre is fully equipped and become an asset to deliver the state-of-the-art orthopedic service including Advanced pelvic and acetabulum surgery, spine surgery and other C-arm requiring procedures.

Clinical Research and Trainings: One of the main new paradigms that the orthopedic department at Hawassa university brought to the field is local evidence generation for evidence-based practice. To achieve this, the research unit is strengthened with human power and infrastructure and undertaking many problem-solving researches and disseminating the findings with different outlets. Now the research unit start to conduct high label research including randomized control trial locally and at national label. Based on the study findings, the unit is delivering training for different stakeholders, media briefings and webinars. These all happens with the significant contribution from our long-term collaborations and stakeholders. As part of giving training for the young generation, until recently, we have successfully run nearly 30 rounds of AO Alliance Non-operative fracture management course for Medical Interns during their first week of Surgery attachment. The short-term knowledge acquisition and long-term impact of the non-operative fracture management course for medical interns is being analysed and the evidence will be disseminated for stakeholders thinking incorporating this two days training into their undergraduate medical interns curriculum.

Compiled by-Dr Mengistu G Mengesha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ORTHOPEDICS
OPERATION ROOM

WACHEMO UNIVERSITY NIGIST ELLENI MOHAMMED MEMORIAL COMPREHENSIVE SPECIALIZED HOSPITAL ORTHOPEDICS AND TRAUMA SURGERY DEPARTMENT

Nigist Elleni Mohammed Memorial Comprehensive Specialized Hospital (NEMMCSH) is one of the oldest hospitals in Southern Part of Ethiopia serving for the last 40 years, established in 1976 EC. It is located in the capital city of the current Central Ethiopia Region, Hossaena, which is found 230 km south west of Addis Ababa.

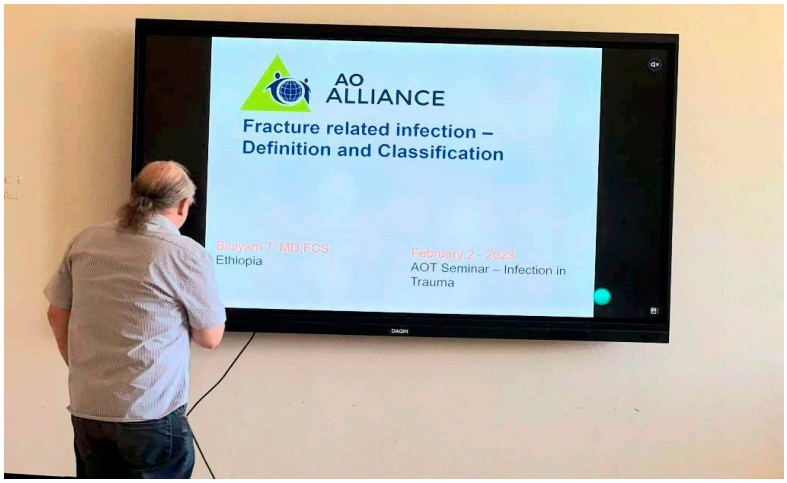
Orthopedics service at NEMMCSH commenced on September 2018 GC and the first orthopedic surgery at the hospital was done on Sep 15, 2018 GC. Despite its recent establishment, the unit made tremendous progress owning its independent building for clinical service and most notably achieved the status of a department since 2021 and has accepted new candidates of O&T graduates in the new residency program. After two solid years of preparation, we launched a residency program in O&T surgery by 2023 and we have two batches of residents by now, four in second years and three in the first year.

Currently the department has three OR tables, a minor OR, and orthopedic ward with 50 inpatient beds. The department has four O&T staff surgeons and five more already under training. One Consultant is already to join a fellowship program abroad.

The help of ADFA, AO Alliance, ESOT, SIGN fracture care international and the mother Department at Tikur Anbessa Specialized Hospital was great throughout the journey of this department.

Contributed by-Dr Habtamu Tamrat

Bahir Dar University College of Medicine and Health Sciences, Orthopedics and Traumatology Department: A center to be excellence in the northern part of Ethiopia



Bahir Dar University College of Medicine and Health Sciences Orthopedics and Traumatology department is working toward excellence in many areas to be one of the leading orthopedic institutions in service providing, academia and research. The department was organized a two-day regional course on FRACTURE RELATED INFECTION (FRI) in collaboration with Orthopedic Surgeons from Rabin Medical Center, Israel and AO Alliance Foundations from February 2 to 3, 2023.As the course was the first in its kind in Ethiopia, it helped participants learn a great deal. Participants were orthopedic surgeons from University of Gondar, Debre Tabor University, Felege Hiwot Specialized Hospital, Injibara University, Debre Markos University and Tibebe Ghion Specialized Hospital. Orthopedic surgeons from Rabin Medical Center in their stay operated patients with advanced orthopedic problems with local orthopedic surgeons, and donated Bone cement that is used for the treatment of fracture related infections.

Bahir Dar university Orthopedics and Traumatology department 5th batch of orthopedic surgeons has successfully completed their residency on October first 2024. For the first time, two graduates were from South Sudan (Dr David James) and Somalia (Dr Sahal Ahamed).

Bahir Dar University, Department of Orthopedics and Traumatology have established pediatrics orthopedics unit, Orthopedics Trauma and Arthroplasty unit, and Bone reconstruction unit. The department is giving advanced orthopedics care in the catchment area and the whole Amhara region. Wide variety of advanced orthopedic services are being given at the institution.

Team of orthopedic surgeons from Bahir Dar University gave primary trauma care training for health care professionals in afar region and Addis Ababa in collaboration with primary trauma care foundation (PTC), UK and international medical corps (IMC) and Ethiopian ministry of health on July and august 2023.

Contributed by-Dr Workineh Mengesha

University of Gondar; College of Medicine and Health Sciences, Department of Orthopedics (CMHS) Success story

Gondar CMHS was initially established as public health (PHC) and Training Center (TC) in 1954 under direct supervision of USAID, WHO and EMOH. In 1961, the college joined the then Haile Selassie I University, now known as Addis Ababa University. The training center and public health college supervised and managed by Karl Marx's University in Germany and Addis Ababa University. In 1980 the college was upgraded to college of medicine and health sciences. In 1992, Gondar College of Medical and Health science was separated from Addis Ababa University. Currently Gondar hospital serves more than10 million people in the catchment area with 28 wards, and 20 outpatient departments. It has 960 beds, 400,000 patient visits and 30,000 admissions annually.

The orthopedics services traces back in 1990s, and the first locking intramedullary nail (IMN) was done in September 29/2010, which was donated from SIGN fracture care international, and since then 1600 SIGN surgeries have been done so far. Now, the department has two orthopedic Operating tables, two wards with a total of 65 beds to provide orthopedic care in the North West of Ethiopia. Orthopedics as a unit service was established under General surgery department in 2017 with three orthopedic surgeons. It was upgraded to department and started residency program in 2020. The program was effectively continued and it contributed its first batch of orthopedic surgeons to Ethiopian orthopedics pool in 2024.

Currently, the department is running a teaching program for a total of 20 residents and the quality of education is frequently assessed by external experts from different Ethiopian and foreign universities, aiming to produce qualified young orthopedic surgeons.

Services and staffs

Gondar orthopedics has 10 actively working General orthopedic surgeons, one Trauma and spine subspecialist, and one Adjunct staff (General Orthopedic surgeons). The department has two orthopedic tables, two functional C-arms and adequate traction tables. With this set up, the department is capable of operating on more than 20 cases weekly. The orthopedic practice is growing gradually treating long bone fractures, periarticular fractures, hip trauma surgeries, and Bone transport, providing services beyond general orthopedic services. We have started pelvis and Acetabulum, as well as Spine surgery services since July 2023.

Contributed by- Dr Birlew Teshome

Mekelle University, Ayder referral Hospital Department of Orthopedic Surgery: Challenges and Opportunities in the Past 2 years

For the past more than two years, the orthopaedic department of our referral hospital has stood as a defiant beacon in the storm of war. Amidst the chaos and destruction, our department has tirelessly served as a lifeline for countless victims battling a constant barrage of challenges.

The most persistent adversary was the debilitating shortage of human resource. Our already stretched team faced further depletion as colleagues were forced to flee the conflict. Yet, the remaining staff, driven by an unwavering commitment, shouldered an immense workload; often working day and night shifts and risking their own well-being for the sake of our patients and the community at large.

Compounding this struggle was a critical dearth of necessary orthopaedic implants and sets. We were forced to improvise using the limited resources we got to address a staggering influx of tens to the hundreds of thousands of cases. The lack of adequate medication further hampered our efforts, leaving us to navigate the complexities of patient management with insufficient resources.

The emotional toll of the war was just as devastating. We witnessed a surge in patients battling with severe depression and post-traumatic stress disorder. Regardless of those physical and psychological traumas, there were moments of strong resilience. The unwavering spirit of our patients mirrored our own determination.

Despite the overwhelming odds, we refused to yield. Our department not only continued functioning within the existing hospital but also ventured beyond its walls. Orthopaedic surgeons including those who established and served the discipline for decades were dispatched to establish new orthopaedic trauma centers, extending our reach to those who were most in need.

One of the most crucial decisions we faced was to maintain the orthopaedic residency program. It was a difficult call fraught with limitations. But we recognized the future of orthopaedic care depended on nurturing the next generation. Although It was a challenging endeavor, but we persevered, ensuring the continuation of academic program.

Now, as the guns have fallen silent, the scars of war still remain. Post-war depression casts a long shadow, and the department grapples with the monumental task of rebuilding. We are working tirelessly to forge new links with international institutions focusing on developing subspecialty programs to address the gaps in expertise. We believe it will be a long road ahead but we are determined to compensate for the lost years.

The story of our orthopaedic department is a testament to the indomitable nature of human spirit. In the face of unimaginable hardship, we chose to rise above: offering a much-needed oasis of healing in the heart of a war-torn land. As we move forward we carry the lessons learned such as the unwavering resolve, the ingenuity and the unfaltering commitment to patient care, guiding us towards a brighter future.

Proceeding with one fracture and one life saved at a time!

Compiled by-Dr Tewelde Nigus

Institutional success stories of Jimma University Medical Center

Jimma University Medical Center (JUMC), situated southwest of Addis Ababa in Ethiopia is dedicated to serving an extensive population of nearly 20 million people. The center's reach extends throughout the southwestern region of Ethiopia, as far as the Gambella and South Sudan shouldering substantial burden of rising trauma cases.

The Orthopedic Trauma service established as a separate unit in 2006 by Swiss surgeons, attains continuous orthopedic implant support from GOSTAR since 2009. In 2021, the unit officially upgraded to a department, featuring its own dedicated ward with 80 beds and an operating room where a minimum of 100 surgeries per month are performed with an exceptional team of 15 highly motivated ward nurses 7 OR scrub nurses, 17 residents and 9 Orthopedic surgeons.

We are delighted to share our recent accomplishments in enhancing orthopedic and trauma care in southwestern Ethiopia as outlined below.

Commencement of Residency Program in March 2022: The Orthopedic and Trauma Surgery Residency Program officially started in March 2022 through the national residency matching program. This milestone underscores our dedication to training highly skilled orthopedic and trauma surgeons. Presently, our residency program is educating 17 residents, including 6 who are in their third year of training.

Picture 1: Frist batch orthopedics residents with their consultants

Launch of SIGN Program: The SIGN Program has been officially launched at our center in 2023, with support of intramedullary nails (IMN). Professors Bruk Lambiso, Dr. Tegenu Dinku, and Dr. Eyuel Ambaye have played pivotal roles in its implementation, guiding our team with their expertise.

Prosthesis and Orthosis Center: The medical center previously had a prosthesis and orthosis center (POC) that produced and provided orthoses and prostheses for orthopedic patients which was suspended due to shortage of skilled professionals and raw materials. Despite numerous attempts, restarting the only POC service in Southwest Ethiopia remains challenging. However, with active support from the Ethiopian Red Cross Society and the FMOH, we hope to resume POC services and improve orthopedic treatment.

Compiled by- Dr Mulugeta Bekele

St. Paul's Millennium Medical College: Orthopedic and Traumatology Department

Since its inception in 2015, the Orthopedic and Traumatology Department at St. Paul's Millennium Medical College (SPMMC) has become a cornerstone for specialized orthopedic care and education in Ethiopia. What began with just three senior orthopedic surgeons has now expanded into a robust department featuring 19 senior specialists with various subspecialties, 65 graduates and 54 residents on training. The department's Subspeciality units now include:trauma and arthroplasty ,Sports and Arthroscopy,Pediatric orthopedics, Foot and Ankle Surgery and Physical Rehabilitation.This growth underscores the department's commitment to providing better orthopedic care and contribute in the development of orthopedic surgery in Ethiopia.

Responding to Emergencies: The department has played a critical role in national emergencies, notably during the Northern Ethiopia instability. The orthopedic team provided essential medical support, treating countless injuries and saving lives amid challenging circumstances. This response highlighted the department's readiness and capacity to handle crisis effectively.

Picture- Dr Solomon Goshu(middle) and Dr Abiy Worku(right) with their Mentor(Left) during their fellowship training at Kansas University

Expanding Services and Training:The establishment of new units such as the Foot and Ankle signifies the department's continuous evolution. SPMMC continues to be a leader in sports surgery, remaining the only institution in Ethiopia with specialized programs in this field till recently. The unit accepts residents from different institution which for sure, will instill the interest of joining the specific subspeciality. Additionally, SPMMC has extended its services to cities like Dilla, Worabe, Jimma and Woliso, ensuring broader access to orthopedic care across Ethiopia. In a pioneering move, the department has begun training residents from Rwanda, a project initiated by the Ministry of Health (MOH).

Continuing Medical Education and Collaboration: SPMMC's Orthopedic and Traumatology Department strived to hosts CME events and collaborative surgeries, inviting surgeons from around the world. These initiatives ensure that both surgeons and residents stay abreast of the latest advancements in orthopedic surgery and patient care techniques. The department has also secured donations from organizations like SIGN,CURE Ethiopia, ADFA and so on. Due to these great help the department is able to do more than 2500 SIGN surgeries and 40 hemiarthroplasty surgeries just from the implant donated by ADFA.

Compiled by-Dr Netsanet Abebe

AO Alliance/ COSECSA guidelines submit for Low- and Middle-Income countries was held from September 12 to 13, 2023 in Addis Ababa, Ethiopia.

Since the time AO Alliance start working in more than 30 African Countries, one of the big lacunae seen in the region was lack of synchronized common fracture management guidelines and protocols which can be used in many African countries. In order to improve the care given for musculoskeletal trauma patients at institutional label, there should be a well-established and standardized protocols and guidelines. AO Alliance in Collaboration with COSECSA held this guideline submit in order to prepare guidelines which can be utilized in most African Countries. In the submit, Orthopedic surgeon from different part of Africa were involved and the meeting was led by Drs. Claude Martin Jr, Jim Harrison, and Tim Chester from UK. The COSECSA Chief Executive Officer, Stella Itungu, was also involved in the guideline submit and she underline the importance of such type of guidelines development in the region. She also mentions as all of the stakeholder in the region should work hard for the wider dissemination of the guideline and utilization in a daily practice of patient care. During the two days of the guideline submit, three guidelines on most common musculoskeletal injuries were adopted and developed. These guidelines included the management of closed femoral shaft fracture, open tibial shaft fracture and closed ankle fracture.

The name of for these guidelines was agreed to be ACTIONS (African Consensus for Trauma In Orthopedics, National Standards) Guideline and it is being widely disseminated to be used by orthopedic surgeons and other stakeholders involved in the management of injured patients.

Compile by-Mengistu G Mengesha

Tim Chesser Jim Harrison Claude Martin jr.

The Management of Closed Ankle Fractures

Background and rationale: Ankle fractures are common, and the goal of treatment is to restore and maintain stability and alignment of the joint, with normal anatomy of the ankle mortise. This should optimise functional recovery and reduce the risk of developing post-traumatic arthritis. **Inclusions:** Patients with closed malleolar and syndesmotic ankle injuries who are skeletally mature. **Exclusions:** Patients with pilon fractures and open ankle fractures.

Standards of Care

1. Reduction and splinting of clinically deformed ankles must be performed urgently within 2 hours after presentation after appropriate analgesia.
2. The mechanism of injury; clinical findings, including skin integrity, assessment of circulation and sensation; and comorbidities that may influence the choice of treatment and outcome should be documented in the patient's record. These include pre-existing mobility impairment, diabetes mellitus, HIV disease, peripheral neuropathy, peripheral vascular disease, osteoporosis, use of topical bleaching creams, smoking, and alcohol abuse.
3. Open fractures or those with vascular injury require urgent referral for definitive treatment.
4. Radiographs of the ankle should be obtained in those suspected of having sustained a fracture, including patients with bone tenderness within 6 cm from the tip of the lateral or medial malleolus, or if the patient is unable to weight bear (Ottawa ankle rules). Radiographs should be obtained promptly after presentation and after any reduction manoeuvres, with an AP, true lateral and a mortise view. If access to radiography is not immediately available, imaging should be performed within 24 hours of presentation. Additional whole tibia radiographs are required when clinical examination suggests a more proximal fracture of the fibula.
5. Review of the radiographs should confirm adequate reduction with the talus positioned below the tibia, on both the AP and lateral view without evidence of subluxation, if not reduced, further intervention is required.
6. Patients presenting for the first time 6 weeks or more after a displaced ankle fracture, should be considered for referral for a specialist opinion.
7. Patients should be given an explanation of their injury including the treatment plan and the expected outcome.
8. Patients with fractures considered stable, including fibula fractures below the syndesmosis, should be managed non-operatively with analgesia, and splinting if necessary, and weight bearing as tolerated. Further follow-up may not be necessary.
9. In patients with fracture patterns of uncertain stability, such as isolated fibula fractures at the level of the syndesmosis, the ankle should be splinted and reviewed within 2 weeks, with further radiographs with weight bearing, if possible, to confirm that the talus remains in position.
10. In patients with an unstable ankle fracture, which includes displaced medial malleolar fractures and fibular fractures above the syndesmosis, early surgical fixation is recommended as soon as safe and within 7 days of injury, or the decision to operate if stability was in question.
11. The WHO Surgical Safety Checklist must be completed, and a single dose of prophylactic antibiotics should be given at the start of surgery.
12. Surgery should achieve reduction and stabilisation of the ankle mortise. The syndesmosis should then be assessed and stabilised if unstable. Intraoperative fluoroscopic images or post-operative radiographs should be obtained within 48 hours and saved in the patient's record.
13. Patients should be allowed to fully weight bear as tolerated in a splint or cast at 2 weeks from fixation, unless there are specific concerns regarding the stability of the fixation or contraindications, such as peripheral neuropathy, or specific concerns about the status of the soft tissues.
14. The risk of VTE should be assessed according to local guidelines. If chemoprophylaxis is required, low-dose aspirin is recommended.
15. Patients should be given information about expected functional recovery, possible complications, and rehabilitation, including advice on return to normal activities. This should be in the patient's own language and/or in an illustrative pictorial format and should be available in both printed and digital formats.
16. Follow-up at 2 weeks is required for patients with concerns about stability or who have undergone surgery. Radiographs should confirm maintenance of reduction of the ankle mortise. Further follow-up should follow local policy but should ensure safe wound healing. Patients should be able to access advice or follow-up from the treating hospital if any complications occur.
17. All cases should be audited with documentation of the above standards including fracture reduction and reported complications. The audit should be presented at the departmental meeting. This should be performed quarterly and then annually once established.

These standards are developed by professional international consensus from the region, using limited randomised control trials and retrospective cohort studies where available. They are not designed or intended to be comprehensive.

The Management of Closed Femoral Shaft Fractures

Background and rationale: Femoral shaft fractures are caused by high-energy trauma. There is strong evidence that early reduction and stabilisation, allowing prompt mobilisation, leads to better outcomes and reduces morbidity. Non-operative treatment may result in malunion with significant functional deficit.
Inclusions: Patients with closed femoral shaft fractures who are skeletally mature.
Exclusions: Patients with pathological fractures and periprosthetic fractures.

Standards of Care

1. There must be a documented defined pathway of care for patients presenting with suspected femoral shaft fractures. This includes the emergency transfer of patients with vascular injuries and open femoral fractures.
2. A primary and secondary trauma survey, including ABCD resuscitation protocol, history, and clinical examination, must be performed on arrival and documented in the patient's record.
3. Full-length AP and lateral radiographs of the femur, including the hip and knee joints, without delay after assessment. If access to radiography is not immediately available; imaging should be performed within 24 hours of presentation.
4. Closed femoral fractures should be transferred in an appropriate splint to the definitive treatment hospital as soon as possible, but no later than 3 days after presentation. All hard copy radiographs should accompany the patient; it is acceptable to allow copies to be on a smart phone.
5. At the definitive facility, if there is a possible delay of more than 5 days, skin traction or skeletal traction with a proximal tibial traction pin, should be considered.
6. Patients should be given an explanation of their injury including the treatment plan and the expected outcome.
7. The treatment standard is intramedullary nailing, locked proximally and distally performed within 5 days of the injury.
8. The WHO Surgical Safety Checklist must be completed, and a single dose of prophylactic antibiotics should be given at the start of surgery.
9. If Intraoperative fluoroscopy is not available, or reduction is difficult, an open reduction may be performed. Reduction of the length, alignment and rotation of the limb should be performed, and this can be checked against the contra-lateral limb. Intra-operative images and/or postoperative radiographs should be obtained to confirm reduction and adequate implant position and should be saved in the patient records. These should include images of the femoral neck to exclude an ipsilateral neck fracture.
10. Patients should be allowed to fully weight bear as tolerated, the day after surgery, unless there are specific concerns regarding the stability of the fixation or contraindications.
11. The risk of VTE should be assessed according to local guidelines. If chemoprophylaxis is required, low-dose aspirin is recommended.
12. Patients should be given information on expected functional recovery, possible complications, and rehabilitation, including advice on return to normal activities. This should be in the patient's own language and/ or in an illustrative pictorial format and should be available in both printed and digital formats.
13. Wounds should be reviewed after 2 weeks. Further follow up including radiographs should occur within 3 months or follow local policy. Patients should be able to access advice or follow-up with the treating hospital, if they have concerns, or if there are reported complications.
14. All cases should be audited against the above standards including fracture reduction and reported complications. The audit should be presented at the departmental meeting. This should be performed quarterly and then annually once established.

These standards are developed by professional international consensus from the region, using limited randomised control trials and retrospective cohort studies where available. They are not designed or intended to be comprehensive.

The Management of Open Tibial Shaft Fractures

Background and rationale: Open tibial shaft fractures are increasingly common and are associated with high morbidity and costs to patient, family, and hospitals. **Inclusions:** Skeletally mature patients with open tibial shaft fractures. **Exclusions:** Patients presenting late with an established fracture-related infection.

Standards of Care

1. There must be a defined and documented pathway of care for patients presenting with open tibial shaft fractures. This includes the emergency transfer of patients with complex severe open fractures, and those with vascular injuries.

2. A primary and secondary trauma survey, including ABCD resuscitation protocol, history, and clinical examination, must be performed on arrival and documented in the patient's record. Adequate intravenous analgesia should be administered prior to limb manipulation.

3. Intravenous prophylactic broad-spectrum antibiotics and tetanus prophylaxis should be given as soon as possible and within 1 hour of presentation to the health facility, and the antibiotics should be continued until wound closure. Anti-anaerobic coverage should be added for highly contaminated wounds such as farm, sewage, and marine wounds.

4. Examination of the injured limb should include assessment and documentation of the vascular and neurological status and should exclude possible compartment syndrome. Initial emergency treatment should include exposure of the limb and taking a photograph, which should be available to the treating team, removal of gross contamination, and dressing the wound with saline soaked gauze. The limb must be re-aligned and splinted prior to transfer within or outside of the facility. AP and lateral radiographs of the entire tibia must be obtained prior to surgical management.

5. Patients should receive an explanation about their injury, treatment plan, and their expected functional outcome before and after surgery.

6. For complex severe open fractures (heavily contaminated, and/or with soft tissue loss preventing a primary wound closure):
   - Discuss the patient with a trained trauma and orthopaedic surgeon at a specialist hospital with appropriate resources.
   - Thorough debridement of soft tissues and exposure of bone ends under spinal/general anaesthesia in the operating theatre within 24 hours.
   - The patient should reach a specialist hospital within 48 hours after initial presentation to a centre without a trauma orthopaedic surgeon.
   - Surgically stabilise the fracture with an intramedullary nail or an external fixator, and soft tissue coverage or reconstruction within 72 hours of injury.

7. For moderately severe open fractures (with no visible contamination, no bone exposure and/or a wound that can be closed primarily):
   - Consider discussion and referral to a specialist hospital according to local expertise and guidelines.
   - Thorough debridement of soft tissues and exposed bone under spinal/general anaesthesia in operating theatre within 48 hours.
   - Surgically stabilise the fracture with an intramedullary nail or an external fixator and wound closure within 72 hours of injury.

8. The WHO Surgical Safety Checklist must be completed, and a single dose of prophylactic antibiotics should be given at the start of surgery. Before prepping and draping the patient, remove contamination with at least 5 litres of potable water. During debridement, all devitalised soft tissue and bone should be removed, both ends of the bone exposed, and further irrigated with a minimum of 2 litres of sterile fluid. Intra-operatively, after debridement, a photograph should be taken and be accessible to the treating team.

9. Once debridement is complete, any further procedures, e.g., Ex-fix or IM nailing, performed at the same session, should be considered as clean surgery, i.e., there should be fresh instruments and a re-preparation and draping of the limb before proceeding.

10. Primary amputation within 24 hours should be avoided wherever possible unless it has been comprehensively discussed with the patient and family by at least two senior/experienced medical practitioners.

11. All patients require post-operative AP and lateral radiographs of the entire tibia within 48 hours of the definitive skeletal stabilisation.

12. Patients should be instructed to fully weight bear as tolerated within 2 weeks of fixation, unless there are specific concerns about soft tissue status.

13. Risk of VTE should be assessed according to local guidelines. If chemoprophylaxis is required, low-dose aspirin is recommended.

14. Patients should be given information about expected functional recovery, possible complications, and rehabilitation, including advice on return to normal activities. This should be in the patient's own language and / or in an illustrative pictorial format and be available in both printed and digital formats.

15. To optimise the outcome, the patient should be given a customised follow-up protocol to ensure safe wound healing and definitive fracture union. Patients should be able to access advice or follow-up from the treating hospital if there are reported complications.

16. All cases should be audited against the above standards including fracture reduction and reported complications, including infection. The audit should be presented at the department meeting. This should be performed quarterly initially and then annually once established.

These standards are developed by professional international consensus from the region, using limited randomised control trials and retrospective cohort studies where available. They are not designed or intended to be comprehensive.

Recognition for Professor Biruk. L WAMISHO's work at SIGN, USA:

SIGN FRACTURE CARE INTERNATIONAL, a USA based humanitarian organization that gives comprehensive fracture care in about 60 countries globally has recognized our dear teacher and leader (mentor) Prof. Biruk Lambisso.
The recognition is congratulatory for the efforts Prof. Biruk made to expand SIGN centers for fracture care in Ethiopia. Prof. contributed a lot in the field of orthopedics in our country, especially by expanding new SIGN NAIL programs enabling public hospitals to provide treatment for long bone fractures free of charge. With his Personal efforts, together with SIGN organization have opened 20 new programs and promised to continue to expand orthopedic treatment centers that have sign program in several public Hospitals located at different parts of Ethiopia.

For his community service, SIGN FRACTURE CARE INTERNATIONAL founder and president Dr. Lewis Zirkle and CEO Jeanne Dillner presented an award to Prof. Biruk at 23rd annual scientific conference held in Richland USA on 13th October 2023.
Due to the expanded Sign Nail program across the country thousands of fractured patients in our country have been treated for free and have returned to work.
Prof. Biruk presented his research paper focused on the initiative of "Mobile/Travelling SIGN program" the conference. All injured patients benefited from this initiative.
A 12-member team of senior orthopedic specialists from Ethiopia participated/presented at the American headquarters and implant factory in Richland and returned back to Ethiopia

We, the resident doctors who are specializing in the Orthopedic Department of Addis Ababa University's Black Lion Hospital headed by Prof. Biruk, are happy with the recognition given to our teacher, so we shared the news with a few photos that we have collected.
We thank SIGN organization, Founding President Dr. Zirkle and CEO Jeanne for recognizing Prof. Biruk's activities and we hope he will be encouraged by this.
We are proud of you, Congratulations Prof. Biruk L. WAMISHO.

(Compiled by: Dr. Binyam. D)

Six Public Hospitals which started new sign program in 2016 E.C(2023/24) (**Menelik ,Debremarkos,Injibara,Mizan Aman,Police,Woldya**) and two hospitals will start in coming few months(Wolkite and Adigrat) in collaboration with Sign fracutre care and Professor Biruk.L (Head of Department of Orthopedics and trauma surgery at Black Lion Hospital)

FEMALE ORTHOPEDIC EMPOWERMENT PROGRAM

The female orthopedic empowerment program is a 6-month mentorship program for undergraduate female medical students aspiring to be orthopedic surgeons and female orthopedic trainees. The program aims to provide a community of women in orthopedics that provide a safe and nurturing space for young females to pursue their dream career in orthopedics. This program is run under Australian Doctors for Africa with a funding from The Australian Embassy in Ethiopia.

The first cohort of the program has 22 mentees from more than seven institutions from several different regions across the country. Their level of training is also different ranging from clinical year II to years I-IV orthopedic surgery trainees. the mentors are also as diverse and include female orthopods from UK. Australia, Malawi, Kenya, and Ethiopia. They are also at different levels of the career giving the mentees an immense exposure.

The program has provided Gender. Leadership and Resilience training, which was the highlight of the program held at the Ambassador hotel. There were also multiple virtual scientific lectures given by residents and seniors in other parts of the world.

Gender and Leadership training by FOEP, at Ambassador hotel, Oct 2023.

Different scholarship opportunities were also made available for the mentees based on their training level. Two of our undergraduate mentees had won two seats at the AOA/ADFA Pre-basic orthopedic training at Best Western hotel in 2023. This specific course was attended by her excellency Julia Libet the Ambassador of Australia, who came to meet our mentees and gave words of encouragement as woman in high power herself.

AOA/ADFA Pre-Basic Orthopedic training, Best Western Hotel, Sep 2023.

Scholarships for international courses were also available and won by Drs. Bezawit and Bethel. They have attended the 5th GANGA arthroscopy course in India and British Society for Children's Orthopedic Surgery (BSCOS) conference 2024 in England, respectively. Which were both eye opening and encouraging opportunities as pointed out by our mentees.

Dr Bethel at BSCOS 2024 conference, England

Dr Bezawit at the 5th GANGA Arthroscopy course 2024, India

Through this endeavor we have gained an in depth understanding of the variety and multilayered nature of challenges that are faced by female trainees in the medical field in general. As this is the first cohort, it has been a learning curve, and we hope for improving the program and expanding this community.

At last, we would like to express our deepest gratitude for our Mentors, The Australian Embassy of Ethiopia, and the Australian government/Australian Aid and our collaborators AO Alliance and Ethiopian Society of Orthopedics and Trauma (ESOT).

By Dr Ananya K.Admasu

FOEP Program manager

Ethiopian Society of Orthopedic and Traumatology (ESOT) was represented at SICOT 2023 annual world congress meeting at Cairo, Egypt.

SICOT, the Société Internationale de Chirurgie Orthopédique et de Traumatology, is one of the world largest Orthopedic international non-profit associations with the mission of advancing science and art of orthopedic and traumatology at international label. One of the flagship activities that SICOT undertook is the annual international conference which will be took place at different member countries where thousands of the orthopedic families will attend the conference, deliver hundreds of presentations, state of the art lectures, introduce new advancement in different fields of orthopedics and create network among members.

The 43rd SICOT annual world congress was took place from November 21 to 23, 2023 at the heart of Cairo, Egypt. Thousands of attendees were participated in the congress and ESOT was represented with three Orthopedic surgeons including Drs. Worku Mekonnen (Founder and owner of Yordanos Trauma and Orthopedic Center), Ephrem G Adem and Mengistu G Mengesha. In the meeting, the Bone Setting Associated Disability (BOSAD) project key findings were presented with both oral and poster presentation for the audience.

Compiled By-
Mengisdtu G Mengesha

AO Alliance: Healing More Than Broken Bones

Taking a collaborative approach to advancing fracture care in Ethiopia, the AO Alliance has been joining efforts with **CURE Ethiopia Children's Hospital, Tikur Anbessa Hospital, and the Ethiopian Society of Orthopaedic Surgeons (ESOT), Australian Doctors for Africa (ADFA), the European Pediatric Orthopaedic Society (EPOS), and the College of Surgeons of East, Central, and Southern Africa (COSECSA).** Over the past year, activities have focused on training, fellowship programs, and clinical guideline development.

The collaboration with **CURE Ethiopia Children's Hospital** facilitated the training of 24 nurses through a fellowship program specifically designed for operating room personnel. This initiative aims to elevate the quality of surgical care by ensuring that nurses are equipped with the necessary skills and knowledge to support complex trauma and orthopedic surgeries.

The resident rotation program at CURE welcomed 18 residents, providing hands-on experience and advanced training in trauma and orthopedic surgery, and preparing the next generation of Ethiopian orthopedic surgeons. The AO Alliance also supported a pediatric fellowship, training one fellow on the needs of children with musculoskeletal disorders and injuries.

Tikur Anbessa Hospital is hosting two AO Alliance fellows undertaking a two-year fellowship program on pelvic and acetabulum surgery.

Two Ethiopian fellows, Dr Sintayehu Busa and Dr Mengistu Gebreyohanes, completed year-long **fellowships in Egypt and India** at Assiut University Hospital and Ganga Hospital, respectively, specializing in pelvic and acetabulum surgery and spine surgery. These international fellowships provide advanced training opportunities and exposure to best practices, which the fellows bring home.

Caption: Dr Ephrem Gebrehana and the new c-arm at Hawassa University Comprehensive Specialized Hospital, March 2023.

The AO Alliance organized several **educational events** in partnership with ESOT, ADFA, and EPOS:

- Basic Principles of Fracture Management for Operating Room Personnel
- Pre-Basic Principles of Fracture Manage ment (2)
- Basic Principles of Fracture Management
- Advanced Principles of Fracture Management
- AO PEER Course: Principles of Clinical Research
- Management of Pediatric Musculoskeletal Infections
- Pediatric Orthopedic and Fracture Management
- Non-Operative Fracture Management Course for Medical Interns

Caption: Surgeons practice operative techniques at the AO Alliance course in Addis Ababa. September 2023

A significant milestone was the **AO Alliance/COSECSA Clinical** Guideline Summit, hosted in Addis Ababa, to develop trauma care guidelines and standards adapted

for low-resource settings in sub-Saharan Africa. Guidelines for three of the most common fractures of the lower extremity (ankle, femur, and tibia) were developed and are available on our website.

Leading the **AO Alliance Ethiopia Outreach Program**, Dr Geletaw Tessema, from Tikur Anbessa Hospital, and his team of surgeons and nurses, facilitated the surgical treatment of 386 patients at the Alem Ketema Enat Hospital, which serves over 350,000 people but has no surgeons.

The **Bone Setting Associated Disability (BOSAD) project,** headed by Dr Mengistu G & Ephrem G of the Hawassa University Comprehensive Specialized Hospital, continued to make significant progress. Two lead surgeons involved in the project presented their work at SICOT's 43rd World Orthopaedic Congress, showcasing Ethiopia's advancements in orthopedic research and practice.

Australian Doctors for Africa (ADFA): A Nonprofit Organization working toward Holistic Orthopedic service Advancement in Ethiopia

Since the time ADFA start working in Ethiopia, there are numerous activities achieved at different institutions all over the countries. In the past two years alone, ADFA has directly involved in many local capacity building and personal development activities to enhance the musculoskeletal care being given in Ethiopia.

Train and Equip

ADFA has trained and equipped surgeons throughout Ethiopia during the past year. These include Addis Ababa University/Black Lion Hospital, Bahir Dar University, Dire Dawa University, Gondar University, Haramaya University (Harar), Hawassa University, Jigjiga University, Jimma University, Mekelle University, St Paul's Hospital Millennium Medical College (Addis), Wachemo University (Hossana), ALERT Hospital and St Peter's Specialised Hospital. ADFA focuses on hospitals that have an Orthopaedic Residency Program.

Fellowships- Dr Helawi Tewabe Fanta from Alert Comprehensive Specialised Hospital and Dr Almaw Bitew Asrese from Gondar University Hospital are due to finish their 12-month Orthopaedic Trauma & Arthroplasty Fellowship at Ganga Hospital, India on 30 June 2024. The next fellowship attendees for the course are Dr Bruh Kefale Gebreyes from Haramaya University Hospital and Dr Tegenu Dinku Gurmu from Jimma University Hospital, starting in July 2024.

Sandwich Fellowship- Dr Kidanemariam Abrha Teka, an Orthopaedic Surgeon working at Mekelle University, Ayder Referral Hospital in Ethiopia, attended a Fellowship Program at the Centre for Musculoskeletal Infections and Department of Orthopaedic Surgery and Traumatology at the University Hospital of Basel in Switzerland, under the mentorship of Dr Mario Morgenstern for the month of October 2023.

Scholarships to Somaliland Doctors in Ethiopia- More than a dozen doctors from Somaliland have been studying various specialties in Ethiopia over the last year, including General Surgery, Neurosurgery, Obstetrics & Gynaecology, Orthopaedics, Paediatrics, Urology, and ENT (Ear, Nose & Throat).

ADFA/AOA Pre Basic Course- The Pre-Basic Principles of Fracture Management Course was held for Residents in September 2023 in Addis Ababa. Founded by Dr Michael Wren and Dr Graham Forward from ADFA, with continuing support from AO Alliance, it has now been passed over to the safe hands of ESOT. The course is specifically designed for first and second-year residents in Trauma and Orthopaedic surgery. It aims to introduce the principles of nonoperative and operative fracture care and develop some of the practical skills required to safely treat fractures.

Female Orthopaedic Empowerment Project- `ADFA's Female Orthopaedic Empowerment Project was successfully implemented over the past year, aiming to build a community of practice among women in medicine in Ethiopia, and to increase confidence, resilience and opportunities for their professional advancement. Two seminars were held to discuss the aims, activities, and modalities of the community of practice, and future training in areas such as leadership, resilience and negotiation. An additional 21 mentees received ongoing mentoring and support, with two fellowships and two conferences attended internationally by female orthopaedic surgeons. ADFA acknowledges the support of a Direct Aid Program grant from the Australian Embassy in Ethiopia for this program.

SIGN Family in Ethiopia

SIGN Fracture Care International played an active role in the growth of orthopedics in Ethiopia. Our first program was started at Soddo Christian Hospital in 2004 when Dr. Duane Anderson took the call to be the orthopedic sur¬geon for the missionary hospital. Under his leadership, Soddo Christian Hospital went from a start-up hospital doing a few cases per year to regularly performing more than 250 SIGN cases per year. He also obtained approval from the Ethiopian government to be one of the satellite orthopaedic residency programs under PACCS.

In 2010, SIGN founder and President Dr. Lewis Zirkle and Jeanne Dillner, SIGN CEO, first visited Black Lion Hospital (BLH) which at the time was already running a SIGN program. Dr Woubalem Z (HOD by then), Dr Biruk L. Wamisho, Dr Elias A, Dr Daniel Zwudneh (Medical Director at the time), Dr John Tanksley, and Dr Toresten were instrumental in starting the SIGN program which still is a very active program in the country. During their first visit, they met Dr. Sami Hailu who was in his first-year residency. Dr. Hailu went into orthopaedics because of his own experience with having a delayed treatment of his femur. He travelled more than 6 hours on public minibus trying to find the right treatment. Experiencing more than 2 weeks delay in treatment made an impression on him. Once he healed of his fracture, he chose to go into the orthopaedic specialty with the hope that he could play a role in expanding orthopaedic capacity throughout the country.

Dr. Biruk Wamisho attributes the growth in orthopae¬dic capacity to having ongoing access via the SIGN Program to long bone instrumentation, deformity and other orthopaedic implants and instrumentation and educational opportunities. Prior to SIGN partnering with Black Lion's orthopaedic residency program, they could not attract talented surgeons to the field because access to implants was so limited. The orthopaedic res¬idency program now has more than 100 residents, all of whom rated very high in medical school.

Until a few years ago, the number of SIGN programs hovered around 20. Then Dr. Wamisho began the first traveling teaching set in 2020. Thanks to Dr. Wamisho and others with travel training sets, Ethiopia has the second largest number of SIGN programs. Forty-six hos¬pitals now partner with SIGN headquarters to train and equip the Ethiopian surgeons to perform effective and timely long bone fracture care. More than 24,000 pa¬tients have returned to normal function thanks to the efforts of SIGN surgeons in Ethiopia.

We also partner with Dr. Sami Hailu and Dr. Geletaw Tessema to expand orthopedic trauma care throughout Ethiopia. Since beginning their fellowship program in Black Lion, at least 5 Ethiopian surgeons have graduated from the 2 year trauma fellowship and 6 surgeons from east Africa have participated in their six month fellow¬ship training program.

Dr. Zirkle and Jeanne continue to be impressed with the surgical abilities, expansion of orthopedics and leaders that surgeons in hospitals throughout Ethiopia have de¬veloped. We are grateful to ESOT leadership for holding the orthopedic standards high for Ethiopia.

Jeanne Dillner
SIGN CEO
June 2024

ESOT office Opening

The Ethiopian Society of Orthopedics and Traumatology (ESOT) has officially inaugurated its first-ever official office. Previously, ESOT's activities were managed from a delegated office within the Department of Orthopedics & Traumatology at Addis Ababa University. The office is located at the main center of the city around Teklehaymanot turnaround, at the 8th floor of Garad Building. All costs related the establishment of this new office including renovation, furniture and digitalization is largely sponsored by AO Alliance and partly by kind donation from our local partner company Pioneer which has also participated in equipping of our Syndicate room.

This establishment of the ESOT office marks a significant milestone for the field. Having a dedicated space at the heart of Addis Ababa will undoubtedly enhance ESOT's ability to organize educational programs and research initiatives related to orthopedics and traumatology. The support from AO Alliance and Pioneer is commendable, as it has contributed to the successful establishment of this office. Here's to a brighter future for orthopedics and traumatology in Ethiopia!

Compiled by: Dr Ephrem G/Hana

ESOT is accredited as a CPD provider

The Ethiopian Society of Orthopedics & Traumatology (ESOT) serves as a platform for knowledge exchange and experience sharing in the field of orthopedic science in the country among its members. In this regard, ESOT CPD standing committee under the leadership of Dr. Ephrem G/Hana has been diligently working to achieve approval as a Continuing Professional Development (CPD) provider and hence, ESOT has been recognized as a CPD provider by the Hawassa University College of Medicine & Health Sciences CPD Accreditation Office. This acknowledgment reflects ESOT's commitment to enhancing the knowledge and skills of healthcare professionals in the field of orthopedics and Trauma Surgery. We hope to run more CPD certified courses in the long run and the CPD committee enthusiastically invites interested members to propose, Organize and host courses, workshops, Webinars or symposia on specific Orthopedic Topics under the ESOT umbrella. These are opportunities to provide valuable updates, enhance skills, and foster networking among members and beyond.

Compiled by: Dr Ephrem G/Hana

CURE Children's Hospital in collaboration with AO Alliance and other collaborators host the ever first pediatric musculoskeletal infection course in Addis Ababa, Ethiopia

We are glad to report that CURE Children's Hospital Ethiopia in association with its external partners has conducted five courses in 2023 and 2024. The topics mainly were management of delayed presenting clubfoot deformity, Pediatric orthopedics and pediatric fracture care as well as a course on management of pediatric musculoskeletal infections.

The course on Pediatric Musculoskeletal Infections needs a special mention. This was a unique course which was never done before. It has been prepared with faculty from the US, UK, Canada, Switzerland, India, as well as Ethiopia. With this great faculty behind it, we managed to prepare a brand-new course. The curriculum was comprehensive, covering a range of topics including diagnostic approaches, treatment modalities, surgical management as well as treatment of complications and sequelae of infections. There was a lot of case-based discussions, interactive sessions, delegate case presentations with limited lectures. With a great feedback from delegates as well as the faculty, we believe this will be taken in the future to other countries too and will have a great impact in care of pediatric musculoskeletal infections.

Compiled by-Dr Tewodros Tilahun

ESOT With Sodo Christian Hospital Undertook Advanced Upper Extremity Seminar at Alert Hospital in Ethiopia.

A Continuing Medical Education (CME) event on Upper Extremity was organized by ESOT and Soddo Christian Hospital Residency Program (PAACS) on February 3rd and 4th, 2024. The course covered a wide range of topics on upper extremity trauma and approaches to upper extremity injuries. We extend our gratitude to the esteemed faculty for sharing their rich experience and knowledge.

The faculty included Dr. Duane Anderson, a pivotal figure in modern orthopedics in Ethiopia, who has been working at Soddo Christian Hospital for the last 18 years. Dr. Rick Papandrea, an orthopedic upper extremity surgeon from Orthopedic Associates of Wisconsin, USA, and Dr. Tim Nunn from Cure Hospital, also contributed as faculty members. The CME focused on common upper extremity injuries and included practical case discussions on complex clinical cases.

We are thankful to Alert Hospital for providing their cozy meeting hall for the event, and we acknowledge Dr. Kalid Zeki and Dr. Biniyam Dagnaw for their immense contributions in facilitating the meeting. The course was primarily organized by Dr Samson Tule, orthopedic oncology and reconstructive surgeon.

Compiled by -Dr Samson Tule and Dr Binyam Dagnaw

First ever all Ethiopian Pelvic and Acetabulum (P & A) AO Alliance seminar

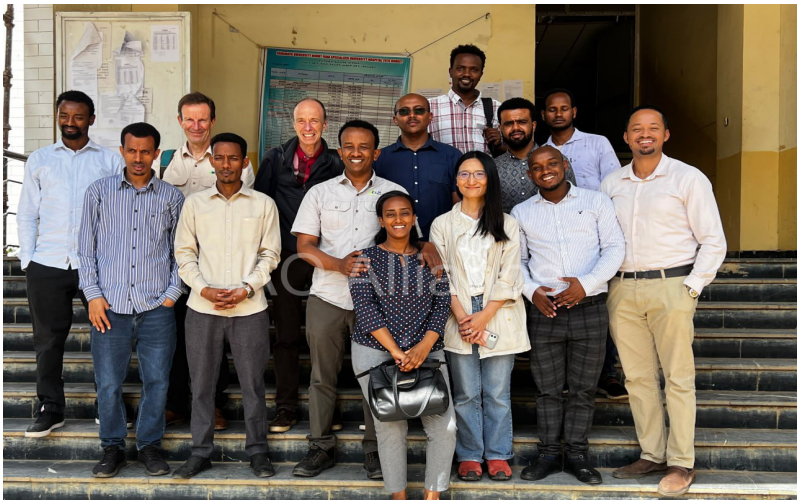
What a remarkable achievement!
ESOT organized an AO Alliance P&A seminar, which took place on December 21, 2023. This event was historically significant because it was the first of its kind within the society's activities. Notably, it was an all-Ethiopian event, with both Faculty & participants from our country only, coming together to share knowledge and expertise in the field of Pelvis & acetabulum surgery. A total of 47 O&T surgeons and 8 Faculties attended the colorful event. Such initiatives will surely contribute to the advancement of orthopedic care and collaboration in Ethiopia. The event has clearly demonstrated the gala capacity of local surgeons and ESOT encourages such initiatives to propagate across other sub-specialties.

Kudos to the Chair persons (Dr Geletaw & Dr Ephrem), Faculty members, organizers and participants!
Thumbs up to AO Alliance for all the trust on the local capacity!!

Compiled by-Dr Ephrem G/Hana and Dr Bezawit Teferi

AO Alliance and ESOT conducts comprehensive scouting Trip to different Orthopedic Departments in Ethiopia.

Embarking on a journey across Ethiopia, our scouting team comprising of AO Alliance Foundation staffs (Dr Claude Martin, Dr Jim Harrison and Polly Buhler), AOA country consultant (Lewam Mebrahtu) and ESOT representatives (Prof. Biruk Lambisso, Dr Ephrem Gebrehana, and Dr Birhanu Ayana), visited Orthopedic departments in various hospitals across the country. We were able to explore Jimma University Specialized Hospital in Jimma, Adama Hospital Medical College in Adama, Hiwot Fana Specialized University Hospital in Harrar, and Dessie Referral Hospital in Dessie from June 5th to 10th, 2023. This trip aimed to assess the current status of Orthopedic care, identify opportunities and challenges, and explore ways for enhancement.



In Ethiopia, Orthopedic departments varied in their equipment and facilities, from moderately equipped to severely resource-constrained. While some hospitals had modern surgical suites and updated imaging equipment, others struggled with outdated tools and limited advanced diagnostic modalities.

The expertise of Orthopedic teams varied as well. Some departments were led by experienced surgeons with international training, while others had dedicated but relatively young staffs. There is also limited opportunities for continuous professional development among staffs at different set up and institutions.

As a result, patient care also showed disparities at different label of institution based on the set up and expertise. Some hospitals efficiently managed patient flow and offered structured rehabilitation services, while others faced challenges with long waiting time for surgeries and minimal rehabilitation options.

During the scouting trip, we identified common challenges including securing funding for equipment upgrades, providing comprehensive training for Orthopedic staff, and enhancing rehabilitation services. These challenges were particularly pronounced in hospitals with limited resources.
Our trip revealed a blend of dedication and urgent need for support across Orthopedic departments in Ethiopian. Addressing these challenges through strategic investments, partnerships, and sustained support will be crucial in elevating the standard of Orthopedic care in the country.

As we travelled through Ethiopia, it was clear that while challenges are significant, the potential for improvement in Orthopedic care is immense. With the right support and targeted efforts, these hospitals can achieve excellence, transforming healthcare for their communities.

Compiled by-Mrs Lewam Mebrahtu

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DROGA PHARMA PLC
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DROGA PHYSIOTHERAPY
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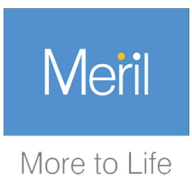
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