

CONGRESSO NAZIONALE SOCIETÀ ITALIANA FISSAZIONE ESTERNA

**Integrated Orthopedic and Plastic Surgical Approach
for Complicated Fractures:
A Case Report**

ROMA



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Muhammad Shalabi, MD · Vitaly Arnavizky, MD · Ilan Y.
Mitchnik, MD · Uri Hazan, MD · Alex Sorkin, MD · Ram Efrati,
MD · Yiftah Beer, MD

16-17 MAGGIO 2025

2025





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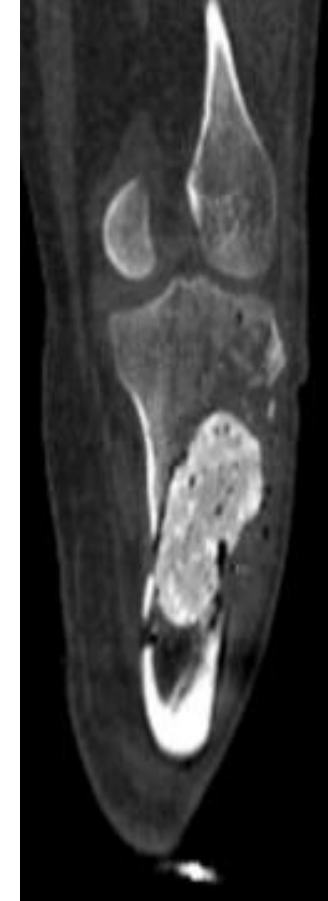
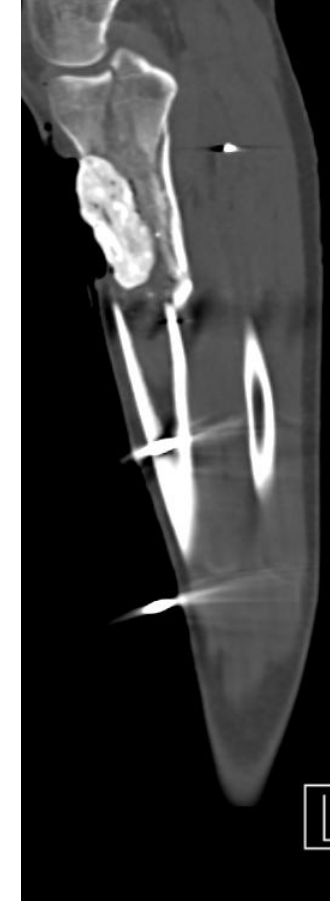
Integrated Orthopedic and Plastic Surgical Approach for Complicated Open Fractures: A Case Report

Muhammad Shalabi, MD · Vitaly Arnavizky, MD · Uri Hazan, MD
· Ilan Y. Mitchnik, MD · Alex Sorkin, MD · Ram Efrati, MD · Yiftah Beer, MD





- 25 y\o male patient.
- NO medical history.
- 07/10/23 - GSW LT Leg
- NO neurovascular injury.
- Treated initially in another facility by D&I, Trans-Knee EX-FIX, and ABx Cement
- Transferred to our MC.

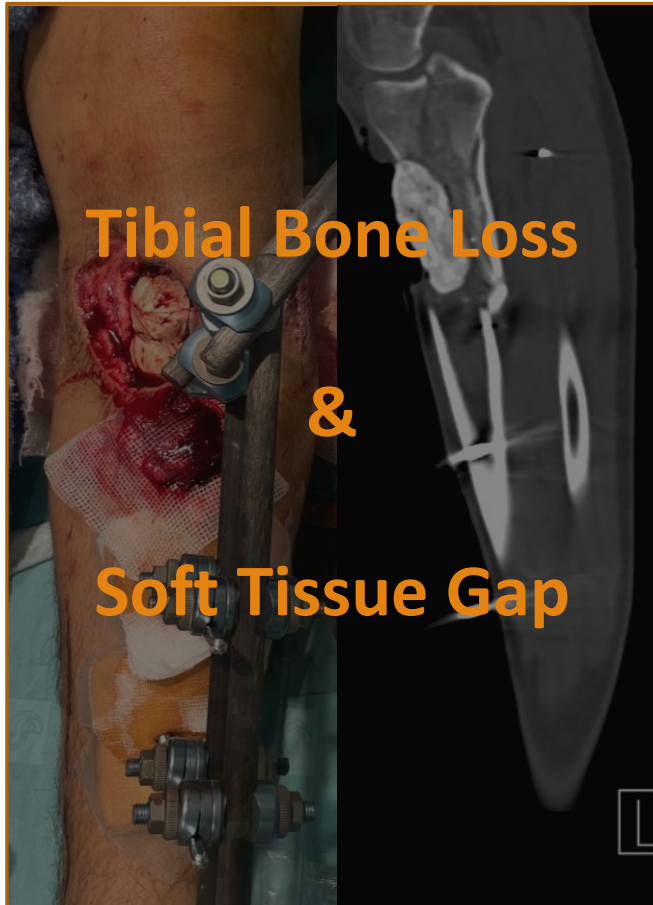




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**How would you close the gap?**



How would you close the gap?

- Acute Shortening & Delayed Lengthening
- Bone Transport
- Masquelet



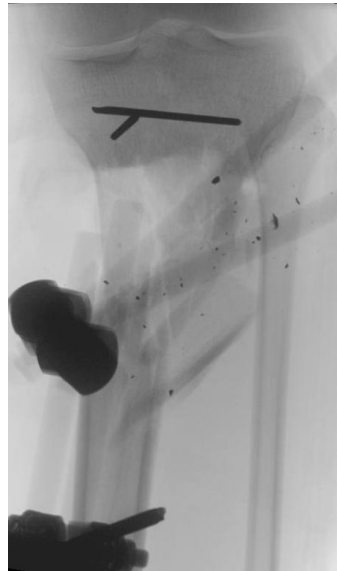
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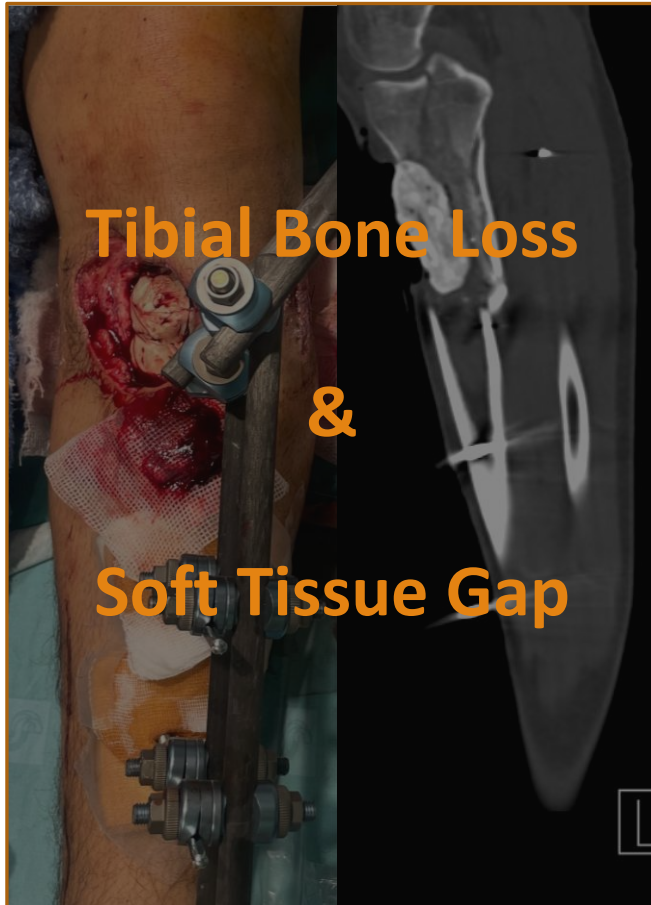
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10/10/23

- ❑ Initial attempt to close wound by shortening 4 cm with ELIZAROV Ex-Fix was unsuccessful.
- ❑ Debridement, TP CRIF with 2-KW, ABx Beads.





How would you close the gap?

- Acute Shortening & Delayed Lengthening
- Bone Transport
- **Free Vascularized Fibular Flap**

Free vascularized **fibular graft** vs. **Ilizarov** method for post-traumatic **tibial** bone defect

K Yokoyama, M Itoman, K Nakamura... - Journal of ..., 2001 - thieme-connect.com

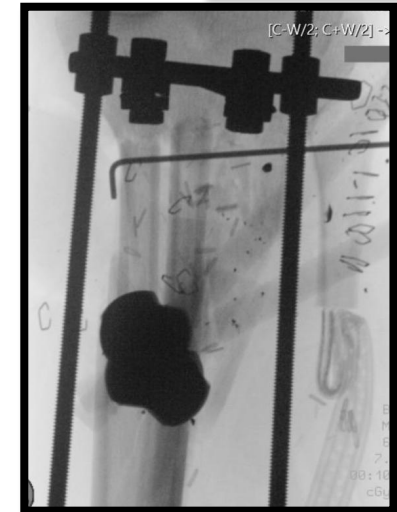
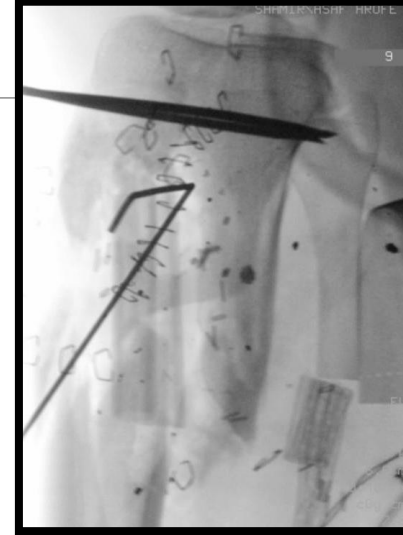
Comparative analysis of free vascularized **fibula grafting** and **Ilizarov** bone transport in management of segmental long bone defect of the lower limb: A systematic ...

S Paul, M Vathulya, P Kandwal, M Jagtap, R Behl - Journal of Orthopaedics, 2023 - Elsevier

11/10/23 - Double Barreld Fibular Osteo-Cutaneous Pedicled Flap



Double Barreld Fibular Osteo-Cutaneous Pedicled Flap





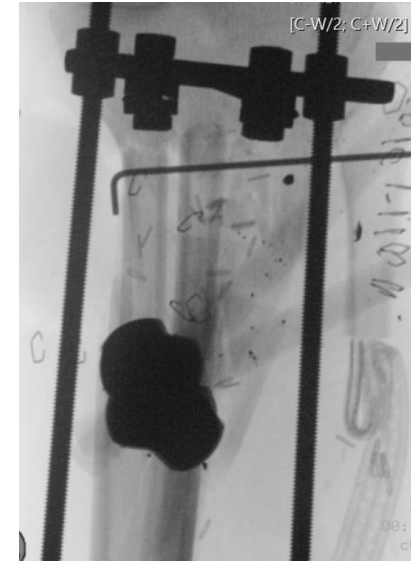
❖ Vascularized:

✓ Soft Tissue Flap

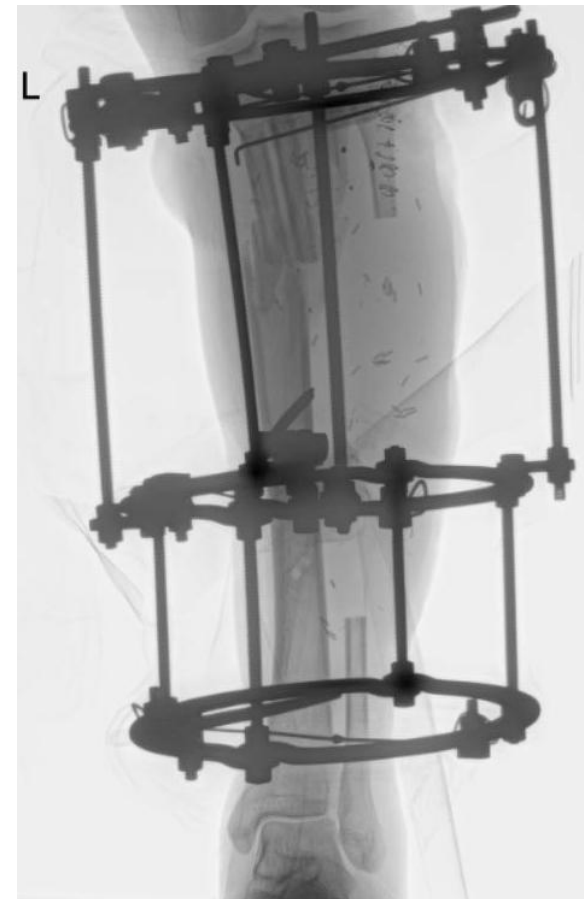
✓ Bone Flap

❖ Skin Flap is an Indicator of Osteal Flap

Skin ischemia = bone ischemia



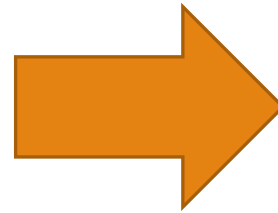
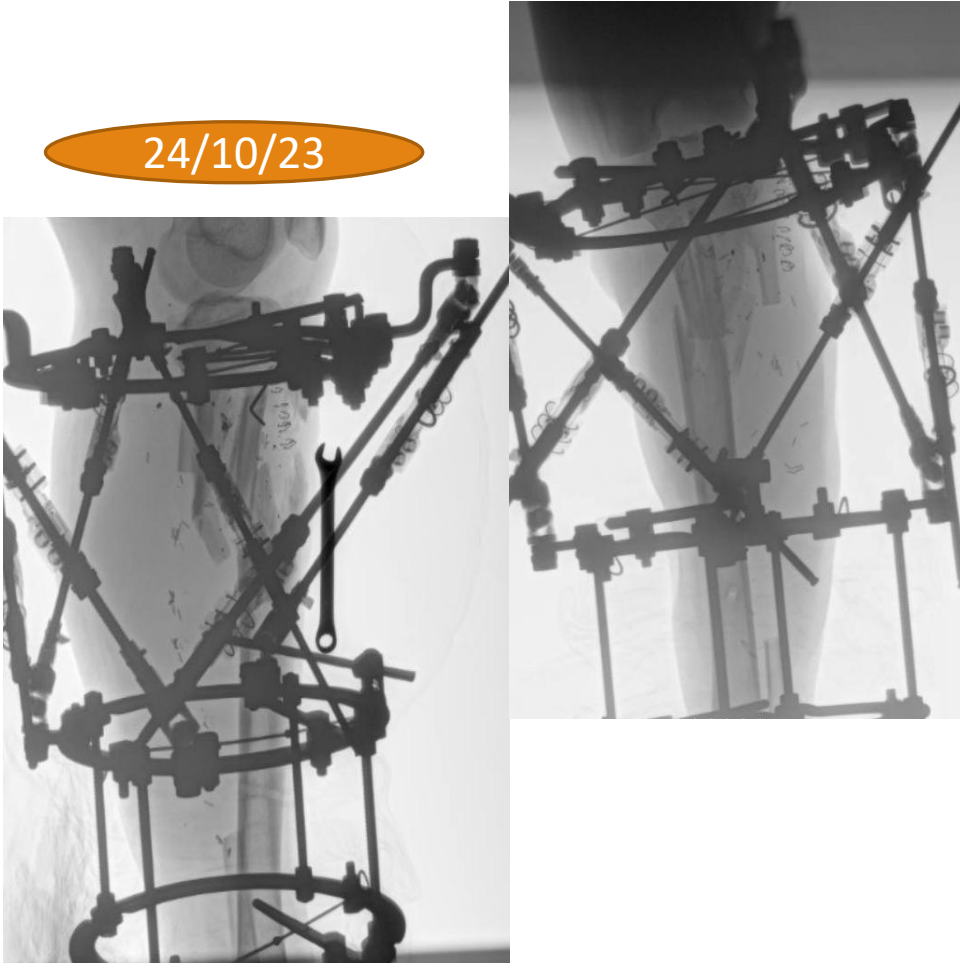
24/10/23
14 days post-op
Bone Flap Reduction - Ilizarov Ex-Fix





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24/10/23



Axis Control
Hexapod Ortho-SUF

19/12/23





❖ 8.5 MONTHS FROM THE INJURY : 25/06/24

- Traveled all over the world
- BUT still PAINFUL ambulation.
- X-RAY - incomplete union
- Pathological movement.





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❖ **26/08/24** – Bone marrow Transplant (BMT) RIA + Bone Morphogenetic Proteins (BMP)





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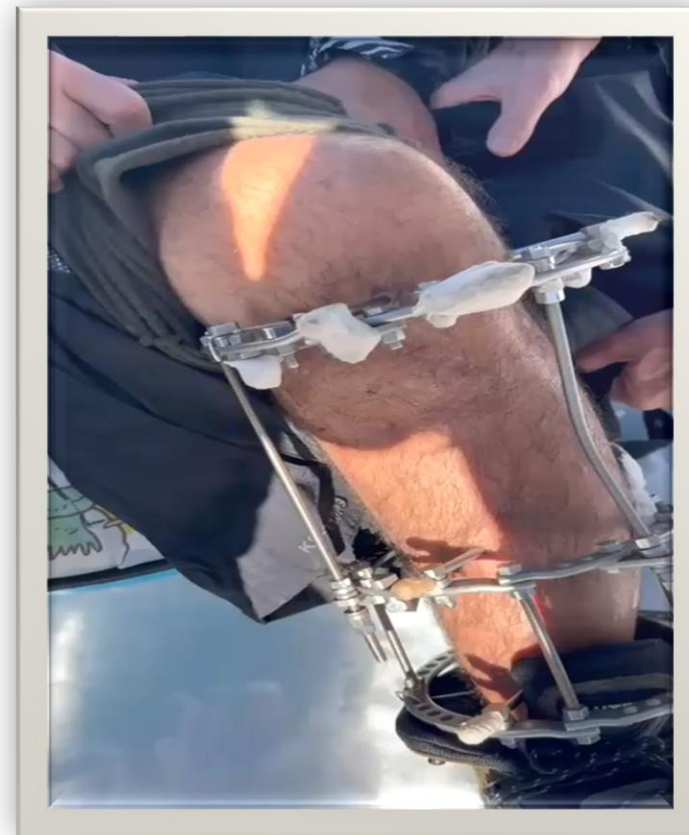
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Follow up X-Rays

08/10/24 - 1.5M Post. OP**25/02/25 - 6M Post. OP**



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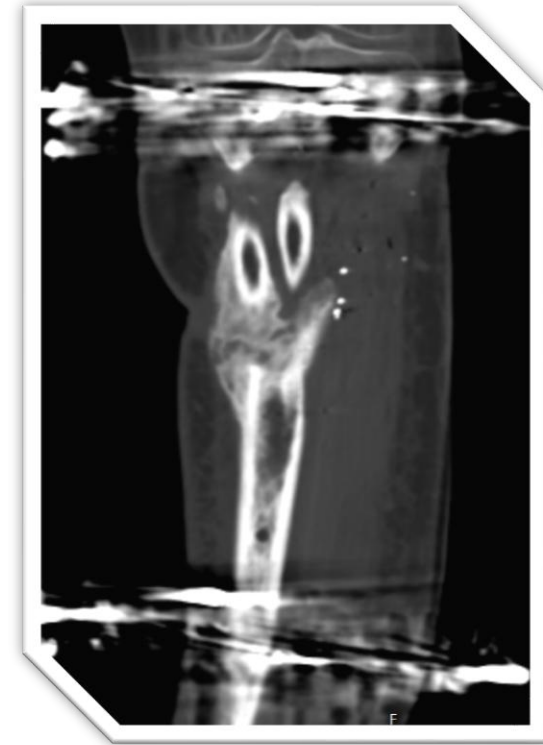




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21/03/25 - 7 M Post. OP
X-RAY + CT SCAN



At the Clinic:

- ✓ Rods released
- ✓ NO pathological movement
- ✓ Walking with NO pain





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❖ 01/04/25 – 2 weeks later





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22/04/25 - 2 weeks post Ilizarov removal





A Take Home Message

- ✓ Successful technique : **VFG** – specially for <8 cm loss.
In case of non-union **BMT** is a **good solution**.
- ✓ **EARLY** ambulation & activation with Ilizarov.
- ✓ Multidisciplinary Team- **early discussion** – better results
Orthopedics and Plastic surgeons
Nurses, Physiotherapist, Nutritionist.





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