

NON VASCULARIZED FIBULA GRAFT IN DEFORMITY CORRECTION OF A YOUNG CHILD

Mohd Hazrul Hazwan BH¹, Noorhuda AM², Shanmugapragash G³, Muhammad
Luqman N⁴, Nazri MY⁶, Ahmad Fadzli S⁶, Akmal Azim AA⁷

Sultan Ahmad Shah Medical Centre (SASMEC) @ IIUM

Presentation

- An 8 years old child presented with a crush injury of her right leg
- She sustained open comminuted distal right tibia fracture and open right calcaneal fracture following an alleged motor vehicle accident in July 2019.
- This disastrous injury resulted in extensive soft tissue damage which require multiple debridement and soft tissue surgery

First surgery

- Initially debridement was performed , external fixation and Split and Skin Graft.
- At this stage they managed to achieved complete healing and soft tissue coverage , but her bone healing was impaired, with non union, varus deformity and shortening around 3cm .
- After counselling, we counselled parents and patient for acute correction with right tibial medial locking plate, fibular strut graft and free ALT flap.

Clinical pictures at presentation

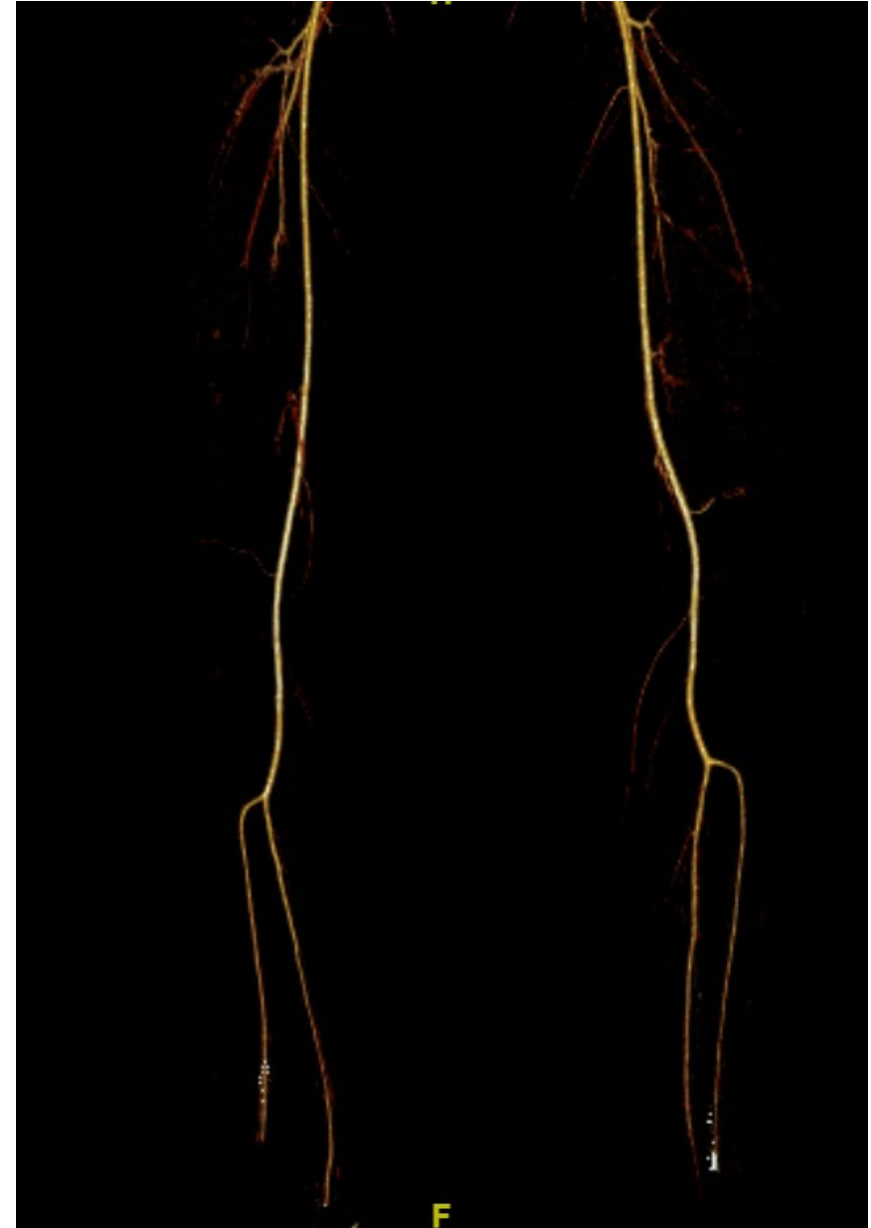


Preoperative plain radiograph



CT Angiogram

- The abdominal aorta, common iliac, external and internal iliac, common femoral, superficial femoral, popliteal, anterior tibial, posterior tibial, peroneal, and dorsalis pedis are patent bilaterally.
- Good contrast opacification are noted.
- No obvious vascular calcification.



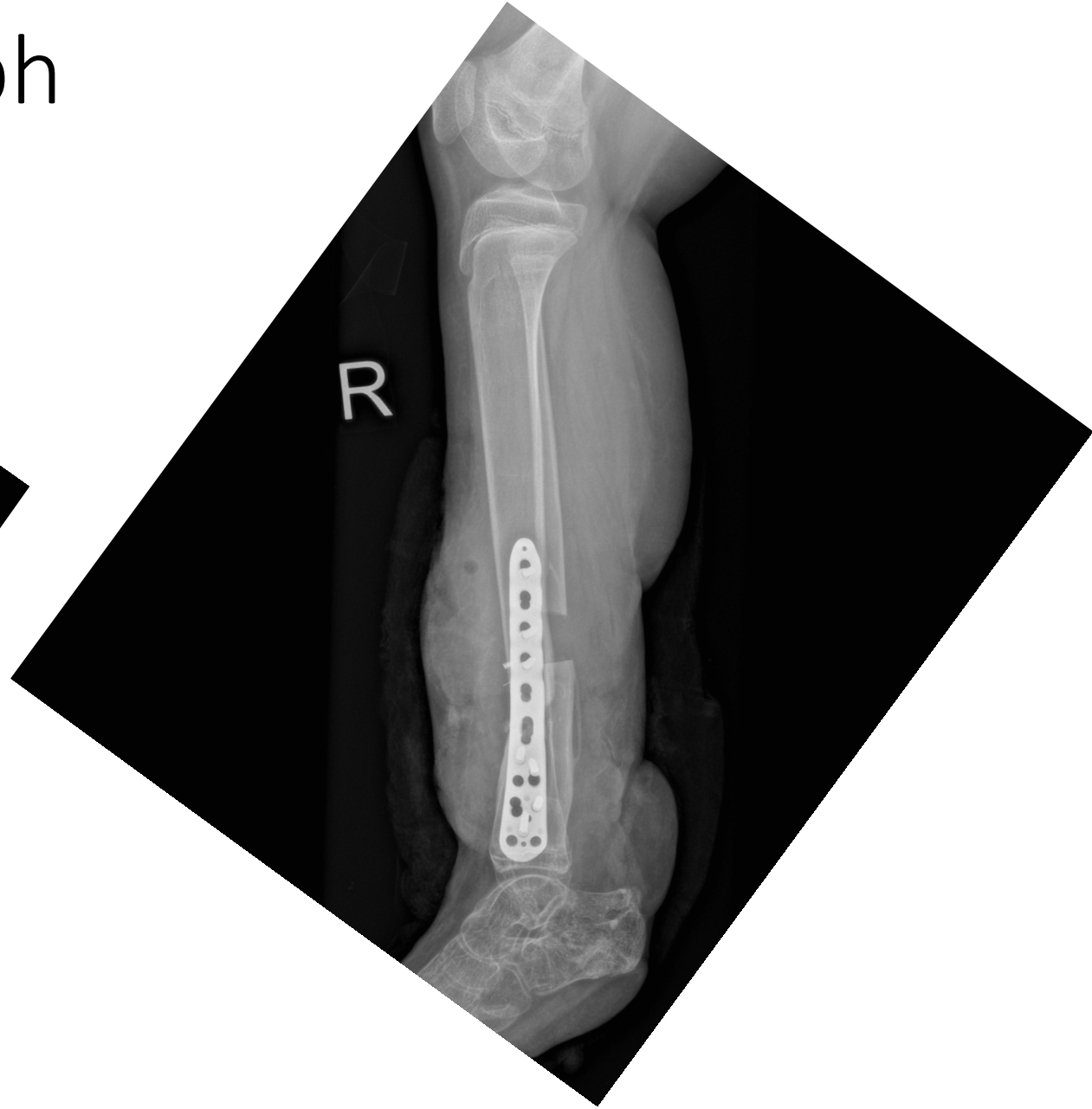
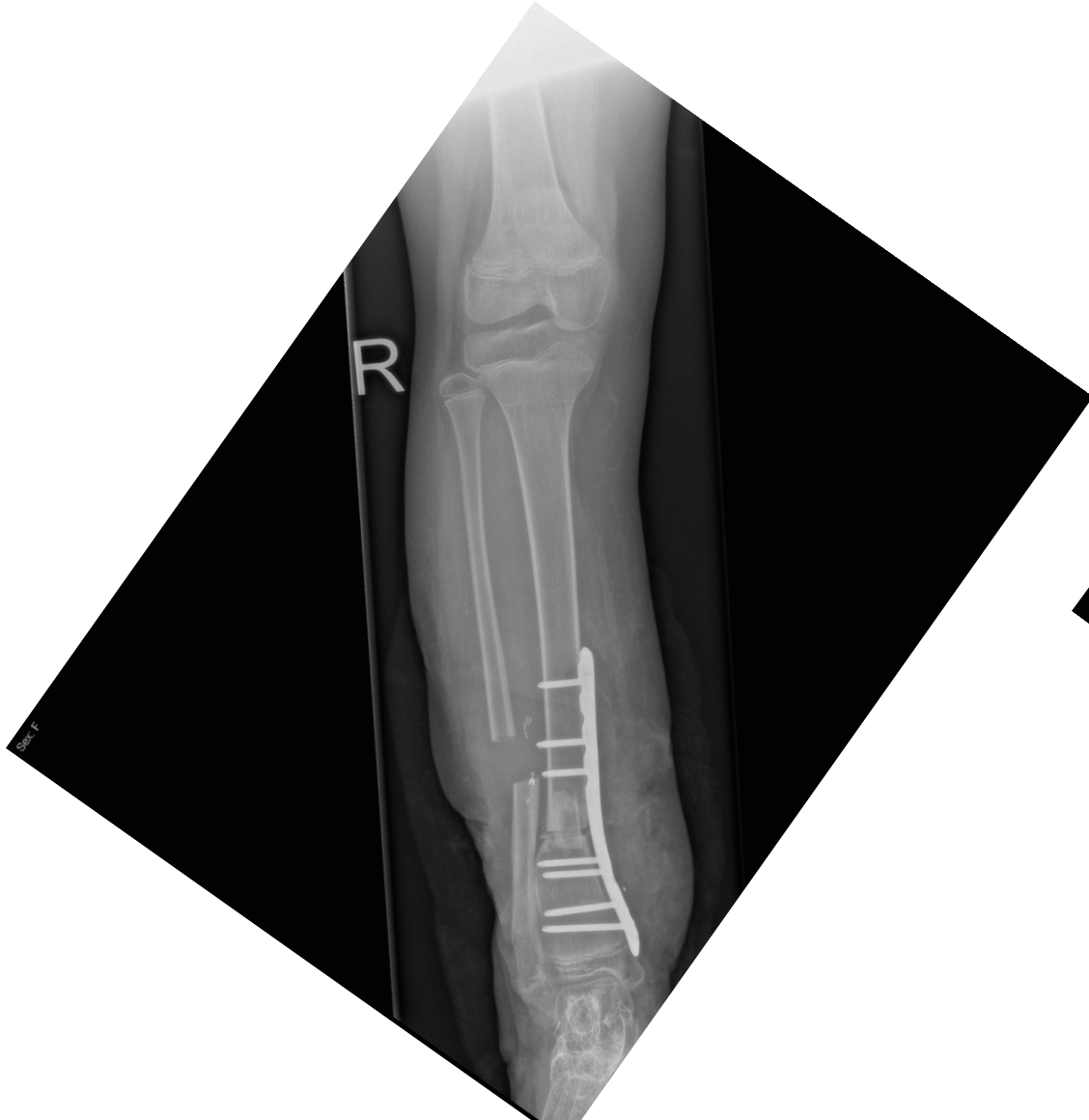
Proceeded with correction surgery on 21/1/2021

- Intraoperative findings :-
- Abundance of fibrous tissues were removed , no signs of infection noted, and bone shortened until good bleeding sign seen. (Paprika sign).
- 2cm ipsilateral fibula strut graft taken and inserted in intramedullary canal of tibia, and stabilised with 5 holes medial distal tibial locking plate.
- Plastic surgery team helped with closure employing the contralateral free ALT flap

Post operative clinical pictures



Post op plain radiograph



Follow up radiograph at 5 months



Long Limb View



Clinical Picture



Our experience

- With utilisation of this graft, we were able to avoid complications of taking distant graft such as iliac
- Assisted in her deformity correction by giving mobility during reduction.
- The tricortical nature of this graft also helped in maintaining the reduction, and shown to be well integrated and united in the fracture site.
- Good soft tissue coverage with ALT flap as wound closure seems beneficial for both soft tissue healing and bone healing as well.
- Serial plain radiograph shown good fracture healing and well aligned bone with good correction of her deformity.
- This child was able to fully weight bear after 5 months with very minimal (1cm) limb length discrepancy, which she compensated well while walking.