The Role of the Periosteum in Healing a Large Structural Defect Following Sequestrectomy
Beit Cure International Hosp

Malawi
CHRONIC OSTEOMYELITIS

- COM is one of the most common condition in children in our setting.

- AHO overlooked and mismanaged.

- Mismanagement of open fractures
Delayed presentation
Delayed presentation
Delayed presentation
- Staphilococcus aureus is the common organism isolated

- Maintaining viable periosteum in face of infection is critical.

- Involucrum develops better in the absence of infection
Large bone defects present special challenges.

- Two schools of thought:

  * Early sequestrectomy and bone graft

  * Soft tissue drainage and immobilization (POP or traction)
Bone defect
Ladder for bone defects

1. Optimise patient
2. Sterilise cavity
3. Cancellous graft – up to 5cm
4. Centralisation of fibula (2 stage)
5. Bone transport
6. Free/vascularised fibular graft
7. Experimental periosteum based regeneration techniques
Case report

8 year old male.
* Painful swelling in the left thigh
* Fever
* Inability to walk.

Admitted to a DH.
- x rays – I&D- Abx- skin traction.
- Transferred later after slight improvement.
Cure hospital:
- Chronically ill and malnourished
- Vital signs:
  * Temp: 37.6 * PR: 115 * RR: 30 * Hb: 8.5g/dl * WCC: > 15,000
  * MPs & HIV test were neg.
A lateral wound on the left thigh draining pus

Xray femur: Diaph sequest with prox and dist metaph #
At 10 wks post-op:
- On skin traction
- Wounds healed.
- Straight leg raise against gravity
X-rays:

- Reconstitution of the femoral shaft
- Discharged at 13 wks on a walking frame
2 years later
Re-evaluation:
* 2.5 cm shortening on the left femur
* ROM : Good (knee and hip)
* No drainage since the last surgery
* X-rays showed a new femoral shaft.
Conclusion

- Our initial plan: to graft the femoral defect.
- Surgeons are cautious about early aggressive sequestrectomy particularly when this removes structural continuity of the bone.
- So far there is little literature to guide such decision making.
- But in selected cases early radical sequestrectomy will:
* Allow resolution of the infection

* Encourage involucrum to develop if healthy periosteum remains

* Ensure involucrum develops without multiple small sequestra forming within it
As COM continues to cause major morbidity in the developing world we hope that this case report would stimulate further research in the decision making process on when to do sequestrectomy.
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