Free Papers B
[O29] BONE TRANSPORT FOR POST-INFECTIOUS SEGMENTAL DEFECTS IN CHILDREN

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Aim: Untreated or improperly managed osteomyelitis can lead to several complications, bone loss being one of the most challenging to manage. Bone transport is just one of the surgical options available for filling the bone gaps and promote bone union. This presentations focuses on bone transport for long bones gaps in pediatric age group, highlighting its advantages and disadvantages, its indications and its complications.

Method: Between 2006 and 2014. 71 patients underwent a procedure of bone transport. Out of them, 39 were males and 32 females, with an average age at presentation of 8.7 years. The bone involved were tibia (27 right, 25 left), femur (4 right, 9 left), radius (1 right, 4 left) and ulna (1 right). Clinically speaking, the children presented with one of the following picture:

a. Pathological fracture, with sequestration without or minimum involucrum formation
b. Extensive, extruded diaphyseal sequestrum, with loss of soft tissues
c. Post-surgical gap, with residual or quiescent infection.

Bone transport was preceded by one of the following procedure: sequestrectomy, sequestrectomy and external fixation, external fixation with sequestrum in situ. Monolateral fixator was used in 46 patients, ring fixator in 25. Bone transport started 7 days after the ostetomy, at the rhythm of 1 mm per day. Plastic surgery procedures were used in 3 kids

Results: Bone reconstruction was primarily obtained in 50 patients; non-union at the docking point was observed in 18. It required additional procedures of bone graft or site refreshening, associated with external fixation. Pins replacements and/or fixator adjustment were required in 24 patients. Several procedures were required during transport to overcome technical mistakes or to handle unexpected complications. All patients were able to walk unsupported. Reduced knee flexion was observed in 11 patients, knee fusion in 4, ankle fusion in 3, limb length discrepancy in 20, axial deformity in 6.

Conclusions: Bone transport has proved to be a reliable technique for managing segmental bone defects in children. It requires long time and it is prone to several complications. Strict medical supervision is necessary all along the process. Besides filling the gap, it can achieve limb equalization when needed. The presence of infection is not a contraindication to concurrent sequestrectomy and transport. The treatment is long, challenging, strenuous for the patient, the family and the medical staff but the results can be rewarding in terms of limb function.