

A CASE REPORT: JOINT SPARING DELTA EXTERNAL FIXATOR WITH TRANS-CONDYLAR SCHANTZ PIN IN SEVERE COMMUNATED OPEN FRACTURE HUMERUS

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Introduction: External fixation is a common, efficient technique used for humeral fracture especially in high-grade open fracture, polytrauma in damage control orthopaedic, severe soft tissue injury or vascular injury[1]. A joint sparing stable construction is essential to preserve the joint mobility for good functional outcome[2].

Discussion: We presented a 19 year old Malay teenager who alleged motor-vehicle accident and sustained open comminuted fracture supracondylar extending to proximal 3rd left humerus (Gustillo-Anderson IIIA). Patient underwent wound debridement with u-slab application immediately post-trauma. Delta external fixation constructed 5 days later under image intensification guidance with two 5mm Schantz pins inserted at anterolateral of proximal humerus, followed by one 5mm Schantz pin inserted (lateral to medial) just above olecranon fossa. Trans-condylar pin was inserted from lateral to medial, ~2/3rd of the condylar width, to avoid ulnar nerve injury. Larger incision combined with haemostat forceps to clear the pin tract to reduce radial nerve injuries. Fracture stability was examined and stable throughout the range of motion of elbow and shoulder. Humeral length maintained and full range of motion left upper limb achieved. No neurological deficit post trauma and post operation. Bone union achieved 6 months post-operation and external fixator removed.

Conclusion: Internal fixation is not possible in severely comminuted humeral fracture in consideration of soft tissue condition. Cross elbow external fixation would be a common practice but may complicate with elbow stiffness. Application of transcondylar pin is a possible way to preserve joint mobility.