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Case Report

Spontaneous healing of large cortical defects in long bones: Case reports and review of literature

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Summary

Bone heals well when the fragments are in full contact and this occurs in ideal situation when there is close fracture. But this is not always the case. High velocity fracture is open most of the time and treatment of such fracture is always challenging [1]. Open fracture needs wound excision and sometime needs trimming of bone end which leads to gap formation in the bone. Such type of gap rarely heals without any intervention [2]. The gap may be filled with cancellous bone, strut graft, cortical graft or with segment transport [3,4]. Segment transport may be bifocal, trifocal or tetrafocal depend on the condition of the bone and size of the gap [5]. For large gap, cortical graft like fibular graft or segment transport are widely used procedures which are technical demanding and time consuming procedures [6]. We present two cases without any head injury in which a large gap in bone was filled and healed without any intervention.

Case no 1

A eighteen years old male skeletally matured had motorbike accident in which he sustain multiple injuries. He sustained fracture of the femur, clavicle and ribs. Initially he was treated with internal fixation in other hospital but it became massively infected. He was referred to our unit for Ilizarov fixator. He was very emaciated and was admitted in intensive care unit. He had chest problem and was not able to tolerate anaesthesia for long time or complicated surgery. So, we did minimum, removed the implants and did debridement in first step but infection was not controlled. Then we resected the necrotic end of the bone (which created gap of 11centimeters) and just fixed it with Ilizarov in the hope to control infection. We did not perform osteotomy because of the moribund condition of the patient. As a young patient he was very keen in his health and visit our Ilizarov clinic regularly. When we were waiting for his health to improve and to control infection, we saw new bone formation in the gap. We followed up that patient and about 11 cm of gap was filled and healed without any intervention (Figs. 1–6).

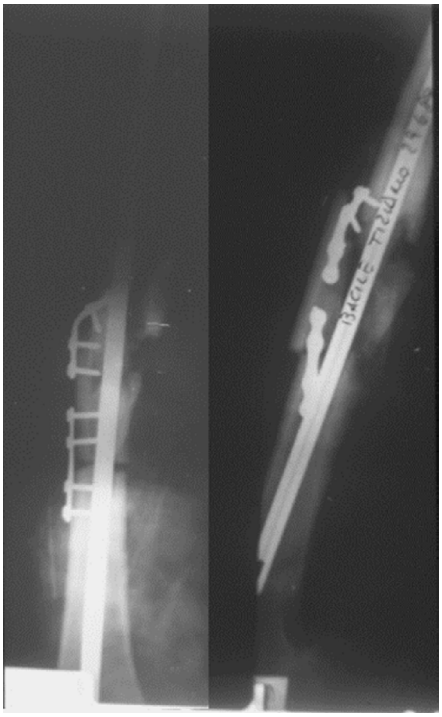

Fig. 1. Infected broken implant.

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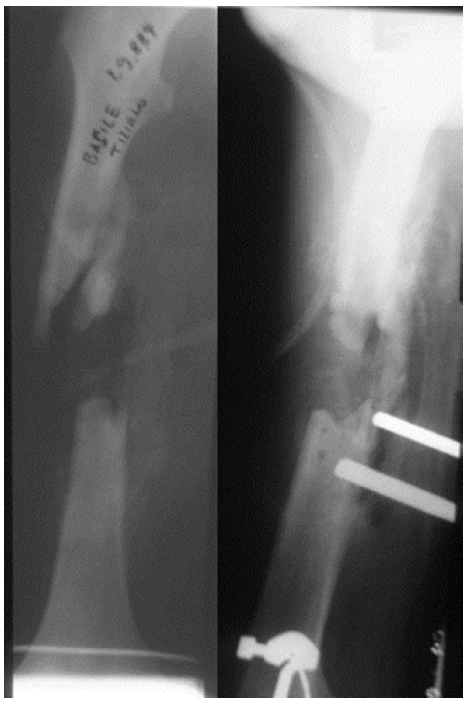

Fig. 2. Removal of implant and dead tissue.

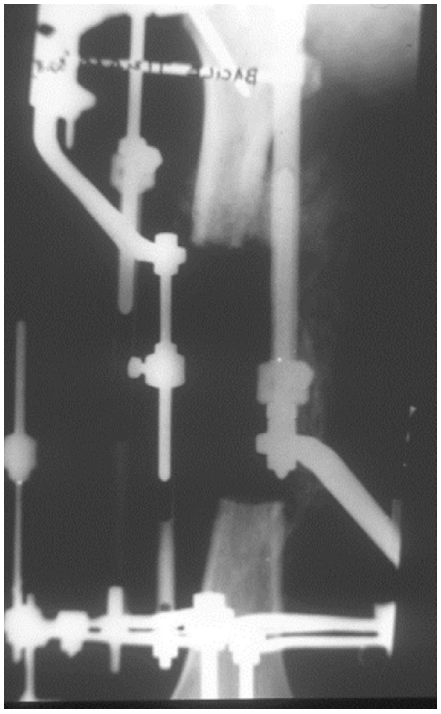

Fig. 3. Removal of necrotic bone.

Case no 2

A sixty years old male had motorbike accident and got open fracture of his tibia. He was treated initially in another hospital with K wire in fibula, screws and external fixator in tibia and skin flap for loss of skin at wound site but was failed due to infection. Then he was admitted in infective medicine unit of our hospital for infection control. He had used a lot of different antibiotics but not avail. Then we were asked for management to eradicate infection. At first instance we stopped antibiotics and did debridement of wound but the wound was not healed. Then we removed the external fixation, did daily dressing and waited for infection to control but still the wound was not healed. Finally we did resection of the infected segment of bone (which created a gap of 9 cm) and applied Ilizarov fixator with proximal osteotomy for segment transport. All these procedures were done without use of any antibiotics. Infection was controlled and the skin was healing

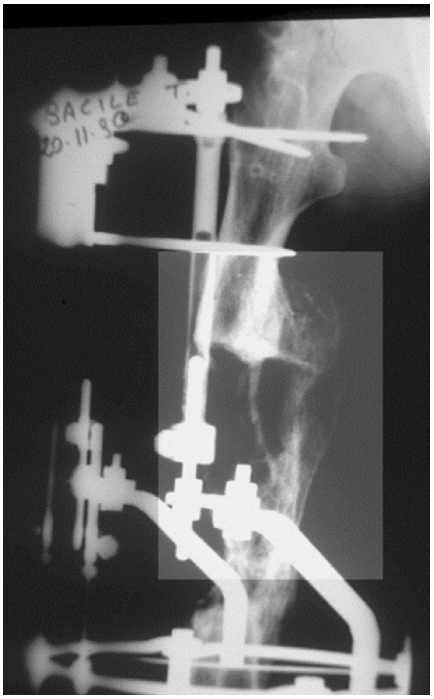

Fig. 4. New bone formation in the gap and application of Ilizarov Fixator.

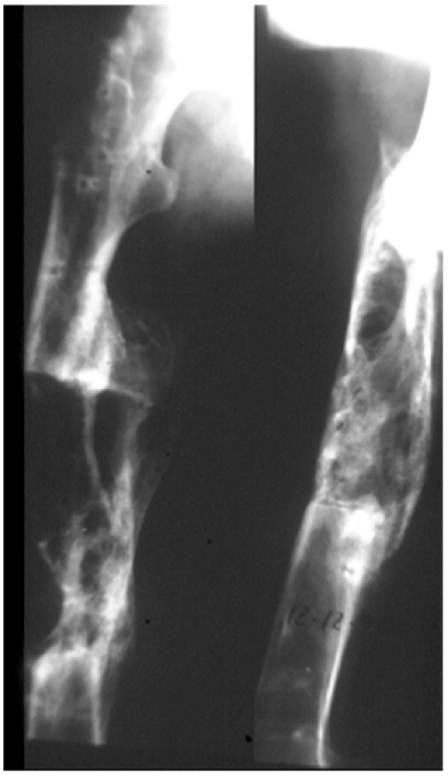

Fig. 5. After removal of Fixator.