

Benign lytic lesions of bone are commonly treated by curettage and the resulting cavity filled by autogenous bone graft, the donor site morbidity is high in this method. In this study the resulting cavity had been filled by synthetic hydroxyapatite crystals which are used to overcome donor site morbidity of autogenous bone graft.

To assess the safety and efficiency of the hydroxyapatite crystals as an alternative for autogenous bone graft in the treatment of benign bone tumors and tumor-like lesions.

This is a prospective study included 30 patients (14 males and 16 females) with benign bone tumor who treated by intralesional curettage and the resulting cavity filled by hydroxyapatite crystals. The patient's ages ranged from 4.5 year to 39 year, patients selection according to the inclusion and exclusion criteria. The commonest diagnosis was aneurysmal bone cyst ( 10 ) followed by simple bone cyst (6), giant cell tumor (4), fibrous dysplasia (3), enchondroma (2), chondroblastoma(2), nonossifying fibroma (2), and chondromyxoid fibroma(1). Follow up period range from 12 to 24 months both clinically and radiologically according to Irwin's grading system.

Most of the study group had well postoperative recovery. The mean follow up period was 17 months (range 12 -24 months). In most patients operative wound healing proceeded well. For patients with lower limb pathology, the mean time of full weight bearing was 18 weeks (range 12 -22 weeks). Range of movements in near by joints was gradually increased and improved in patients were tumor approximated the joint. According to Irwin's classification, except 3 cases develop complication, all cases were Irwin's stage I incorporation at 6 months follow up. At 12 months follow up 1 case remain Irwin stage I, 14 cases were Irwin stage II and 12 cases were Irwin's stage III plus 3 cases develop complication. There was no rejection of implanted hydroxyapatite crystals and no abnormal hematological or biochemical findings in subsequent follow up.

Hydroxyapatite crystals are slowly absorbed by body. Bone ingrowth and bone formation around the hydroxyapatite crystals were well. Hydroxyapatite crystals have great biological safety, good biocompatibility and good bone conduction.