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PERCUTANEOUS TREATMENT OF UNICAMERAL BONE CYSTS WITH DEMINERALIZED BONE MATRIX, SINGLE NEEDLE TECHNIQUE

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Background:

Optimal treatment for unicameral bone cysts remains unclear. Several treatments options evolved since the seventies of last century including; open curettage and grafting, steroid injection, bone marrow injection and finally demineralized bone matrix grafting.

This study evaluates the outcome of patients treated with percutaneous aspiration and injection with steroids and demineralized bone matrix.

Materials and Methods:

Twenty four consecutive patients treated for UBCs since 1998 were eligible for inclusion; Median age was 10 year (range 4-41). Diagnosis was made radiographically, Seventeen patients received percutaneous treatment: Following aspiration with an 8 gauge bone needle, high pressure injection with contrast was performed, completely filling the cyst. After re-aspiration, depomedrol and demineralized bone matrix (DBX, Synthes, USA) were injected. While 7 patients underwent open curettage ,biopsy and grafting with DBX. Length of time to outcomes of complete/ incomplete healing or recurrence, were determined by radiographic analysis.

Results:

Five patients who treated percutaneously recurred, and 2 who treated by open technique recurred; All 7 patients were treated percutaneously, two recurred and were treated with curettage and DBX grafting. Two patients (ages 4 and 6), recurred twice and healed after the 3rd treatment. Cyst location included 13 proximal humerus, 6 proximal femur, 4 calcaneus and one proximal fibula. 17 patients show new bone filling the cyst after a single treatment (median time of 2.5 months); 7 patients needed one or 2 more procedures to heal completely.

Conclusion:

Demineralized bone matrix significantly improved healing following percutaneous treatment of UBC. Reossification was seen in most patients, unlike patients treated with steroid injection alone. This technique was simple and well tolerated and suggests that double needle and open techniques are unnecessary.

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