

Minimally Invasive Management of Bone Cyst: A case Report

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Abstract: Bone cysts are benign bone lesions. Various modalities of treatment are described with various techniques with variable results and high recurrence rates. An ideal treatment should be cost effective with minimal morbidity and a short time for bone union and no recurrence. We are presenting a case report of minimally invasive surgical technique for a bone cyst that combines percutaneous decompression and bone grafting.

Key words: Surgical technique, Bone Cyst, Curettage, Autologous bone graft

I. Introduction

Simple bone cysts or unicameral bone cysts are benign cystic lesions of unknown etiology seen in the meta-diaphyseal region of long bones in growing children¹. Virchow R. described the lesion for the first time in 1876². Usually patients are asymptomatic and patients present usually with a pathological fracture³. Various modalities of treatment have been described like open-curettage and bone grafting⁴, intralesional injections of steroids⁵⁻⁶, autologous bone marrow⁷⁻⁸. A minimally invasive surgical technique described here preserves periosteum, muscles and blood supply and provides access to cyst curettage, decompression and use of filling material. In this case, autologous bone grafts give an easy and effective approach and successful outcome.

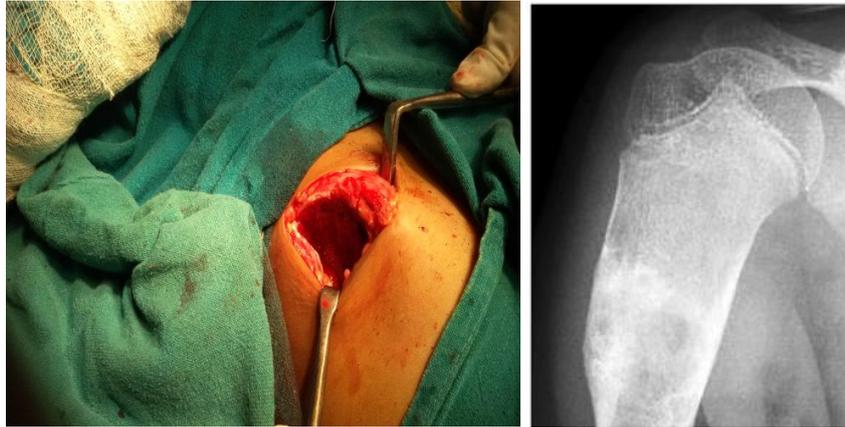
II. Case Report.

A 14-year-old was admitted to our hospital with history of recurrent pain and swelling over the right arm. On examination, we noted a swelling 7"x11" fusiform in shape, over the upper arm. There was a past history of trauma and consequent cast application.



Pre OP X-Ray

On clinical examination and investigations that included plain X-ray, a diagnosis of unicameral bone cyst was provisionally made. FNAC confirmed the diagnosis of unicameral bone cyst.
Surgical Technique



Intra Operative Photo

Follow Up X-Ray

Patient was planned for percutaneous cyst curettage and filling of bone cavity with fresh cancellous bone graft under image intensifier guidance. A small longitudinal skin incision (2.5 to 3 cm) was made after localizing the lesion under image intensifier. Bone window was created by fenestration in outer cortex using 3-2 mm drill bit percutaneously under the guidance of image intensifier. We used an infant feeding tube of size 7 to aspirate the fluid content which was sent for biopsy and tissue analysis. Using the tip of a 4 mm flexible titanium elastic nails the septa. Slivers of iliac crest bone graft thoroughly crushed and were filled in the cavity.

Patient was regularly followed up and subsequent x-rays show healing of fracture and resolution of lesion and graft integration.

III. Discussion:

Cystic bone lesion in first two decades of life constitute common cause for pathological fractures. One has to dwell with the differential diagnosis of unicameral bone cyst and aneurysmal bone cyst.

Percutaneous method under image intensifier guidance using flexible nail for curettage of cyst, decompression along with bone grafting is a treatment option which may be considered with advantage of minimally invasive modality.

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