ORIGINAL RESEARCH PAPER

Orthopaedics

KEY WORDS: Wrist Pain, Intraosseous Ganglion Cyst, Bone Graft, Curettage, Scaphoid, Lunate

INTRAOSSEOUS GANGLION CYST OF SCAPHOID AND LUNATE: A CASE REPORT

Dr. Ketan Khatri Resident, Dept. Of Orthopedics, M.G.M. Medical College Aurangabad.

Dr. Gajanan Kathar* Lecturer, Dept. Of Orthopedics, M.G.M. Medical College Aurangabad.
* Corresponding Author

ABSTRACT

INTRODUCTION: Intraosseous ganglion cyst of carpal bones is an uncommon cause of wrist pain. Although isolated cases of scaphoid and lunate have been reported in literature, intraosseous ganglion cyst in both scaphoid and lunate is rare.

CASE REPORT: We report a case of 27 year old female who presented with a 6 month history of progressive left wrist pain. History of trauma was not reported. Conservative treatment with medications was unsuccessful. Examination revealed moderate swelling and tenderness over volar aspect of wrist with terminally painful wrist motions. Plain radiograph and MRI revealed well defined lesion in both scaphoid and lunate bone. Curettage and filling with radial bone graft provided a good functional recovery.

CONCLUSION: we propose that early diagnosis of intraosseous ganglion is based on clinical presentation, proper radiologic investigation and index of suspicion can be helpful in the surgical management of intra osseous ganglion cyst in small bones of hand and intraosseous ganglion cyst may be considered as a differential diagnosis for wrist pain.

INTRODUCTION:

Ganglion cysts are soft tissue swellings occurring most commonly in the hand or wrist. Apart from swelling, most cysts are asymptomatic. Other symptoms include pain, weakness or paraesthesia. The main concerns in these patients are about the cosmetic appearance of the cysts and the fear of future malignant growth. It has been shown that 58% of cysts will resolve spontaneously over time. Treatment can be either conservative or through surgical excision.[1] Intraosseous ganglion cysts (IGC) are infrequently reported in the literature as a cause of wrist pain. Intraosseous ganglion cyst is a benign, non neoplastic bone lesion with histological similarity to the soft tissue ganglion cyst.[2] Itisarare, cystic lesion with peak incidence in second to fourth decade of life and female preponderance. It's etiology remains largely unknown; however trauma, herniation of the joint capsule, mucoid degeneration, intramedullary metaplasia of mesenchymal cells, and congenital rests of synovial producing cells have been suggested to play a role.[3] Carpal bones are unusual site of involvement. Although isolated cases of scaphoid and lunate have been reported in literature, intraosseous ganglion cyst in both scaphoid and lunate is rare.

Since there is limited information about the evidence based guidelines in the surgical management of we thought of reporting a young female patient with both scaphoid and lunate intra osseous ganglion cyst treated with curettage and bone grafting.

CASE STUDY

HISTORY:

We describe a 27 year old house wife. Her height was 162 centimeters, weight 58 kilograms and body mass index (BMI) was 22.1. The patient was seen by a junior resident in orthopedics and enrolled for treatment. She complained of left achy or pressure like mechanical pain in wrist pain since six months that got aggravated with wrist movement, stretching or weight bearing through wrist and partially relived with rest and when she took medications. She gave no history of trauma, strenuous activity, lifting heavy weight or the history of similar complaint in the past.

PHYSICAL EXAMINATION:

Her vital signs were normal. Careful palpation of the left wrist revealed moderate swelling over palmer aspect of wrist, tenderness over volar aspect of scaphoid and radial styloid, range of motion was terminally painful and the grip strength was symmetrical. Radiograph of wrist revealed a well defined, round shaped, solitary, osteolytic lesion in proximal part of scaphoid and lunate bone. The adjacent jointsand other carpal bones appeared normal (Fig. 1).

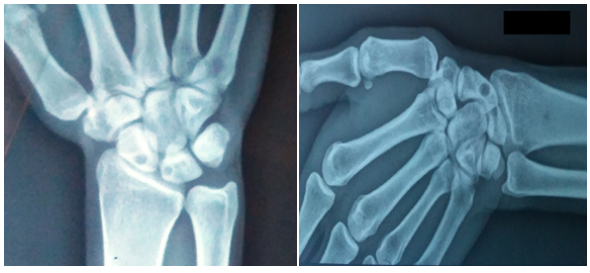

Figure 1: Plain Radiograph of wrist showing well defined lytic lesion in scaphoid and lunate

Magnetic resonance imaging of wrist finding suggested well defined low signal intensity area on T1weighted image and high intensity signal on STIR images most likely to be suggestive intraosseous ganglion cyst in scaphoid and lunate (Fig. 2).

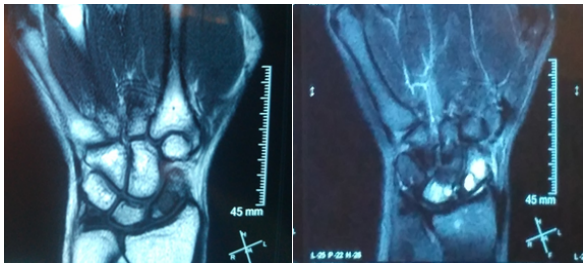

Figure2: MRI T1 image showing low intensity signal and T2 showing high intensity signal in scaphoid and lunate area

PROCEDURE:

Ethical approval was granted from the Institutional Ethical Committee and the patient gave an informed written consent. She was taken for surgery, through volar approach to wrist, cortical defect was created using a K wire through which yellowish gelatinous material was curetted out and cavity was

Submitted : 27th July 2019 | Accepted : 15th August 2019 | Publication : 15th October, 2019

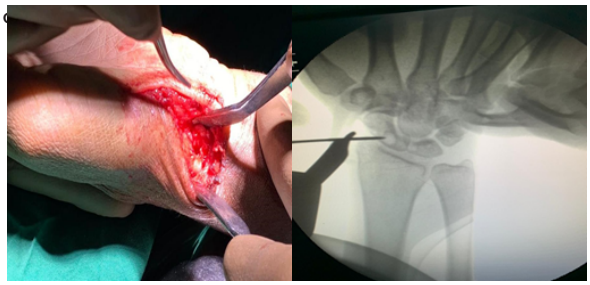

Figure 3: Intra operative images of cyst curettage and bone grafting.

Normal saline wash was given to the cavity and was packed with autogenous cancellous bone graft taken from distal radial metaphysis.

The sample after curettage was sent to histopathological examination which showed cystic formation with walls constituting flattened, synovial like cells with mucous viscous material suggestive of ganglion cyst.Postoperatively wrist immobilization was given for 3 weeks after which gradual mobilization exercises were started .After 3 months of follow up, patient was completely relieved of pain and radiograph of wrist showed complete resection of cyst with Osseo-integration of bone graft. (Fig. 4)

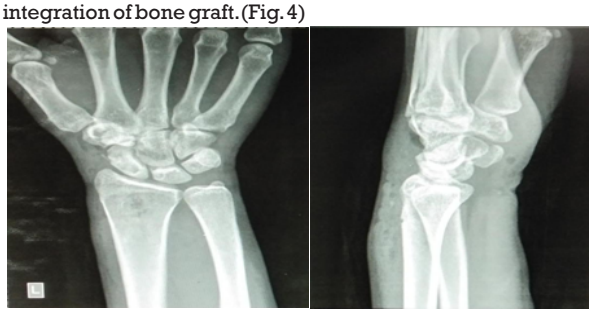

Figure 4: post operative radiographs of wrist showing cyst cavity filled with bone graft taken from radial metaphysic

DISCUSSION:

This case study provides the information about the surgical management of intraosseous ganglion cysts at left wrist. We know the intraosseous ganglion cyst since 1956 when it was described for the first time by Hicks et al. [4] intraosseous ganglia are commonly asymptomatic and identified incidentally on radiographs. Yet when symptomatic, patients typically present with generalized non-specific wrist pain thus, leading to a delay in diagnosis and appropriate management. Once identified, initial conservative measures are often ineffectual, with definitive treatment often necessitating operative intervention. Literature review of the comparison of the treatment of intraosseous ganglion cysts of carpals suggests that curettage of lesion & bone graft forms the mainstay of treatment.[5, 6]We found that the conservative treatment with medications was unsuccessful in this case and surgical management with curettage and filling with radial bone graft provided a good functional recovery. But in spite of excellent outcome after curettage and bone grafting, the procedure involves donor site complications due to graft harvest like painful scar formation, infection, hematoma, fractures and gait disturbances. To avoid these complications and donor site morbidity Fealy MJ used radial styloid as graft after styloidectomy along with intralesional curettage.[7]

CONCLUSION:

Intraosseous ganglion cyst of carpal bones is rare and unusual cause of wrist pain and surgical treatment with curettage and bone grafting may be considered as one of the best treatment option for better outcome.

we propose that early diagnosis of intraosseous ganglion cyst is based on clinical presentation, proper radiologic investigation and index of suspicion can be helpful in the surgical management of intra osseous ganglion cyst in small bones of hand and intraosseous ganglion cyst may be considered as a differential diagnosis for wrist pain.

REFERENCES:

1. Matthew Suen, B. Fung, and C. P. Lung: Treatment of Ganglion Cysts. ISRN Orthop. 2013; 2013: 940615.
2. Liza Osagie, Samantha Gallivan, Neil Wickham, and Shamim Umarji: Intraosseous ganglion cysts of the carpus: current practice. Hand (NY). 2015 Dec; 10(4): 598–601.
3. Bennett DC, Hauck RM. Intra-osseous ganglion of the lunate. Ann Plast Surg.2002; 48: 439e442.
4. Hicks JD. Ganglion cyst of bones. Australian and New Zealand Journal of Surgery. 1956; 26: 138.
5. Saurabh Jain, Anil Kumar Jain, Ish Kumar Dhammi, Puneet Mishra, and Prasant Modi: Intraosseous Ganglion Cyst of Scaphoid treated by Curettage and Bone Grafting: Case report and Review.J Orthop Case Reports. 2011 Oct-Dec; 1(1): 7–11.
6. Fealy MJ, Lineaweaver W. Intraosseous ganglion cyst of the cyst of the scaphoid. Ann Plast Surg. 1995; 34(2): 215–7. [PubMed]
7. Schrank C, Meirer R, Satbler A, et al. Morphology and topography of intraosseous ganglion cysts in the carpus; an anatomic, histopathologic and magnetic resonance imaging correlation study. J Hand Surg (Am) 2003; 28(1): 52–64.