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Case Report

RARE CASE OF RECURRENT GIANT CELL TUMOUR OF RING FINGER PROXIMAL PHALANX IN A 35 YEARS OLD LADY

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ABSTRACT

Giant cell tumor (GCT) of bone arising from a phalanx of a finger is extremely rare. Here were re reporting a rare case of giant cell tumour of proximal phalanx of ring finger which was initially treated with curettage of lesion & bone grafting. After 2 yrs patient again developed similar complaints and diagnosed as recurrent G.C.T. Patient treated with ring finger ray resection & the diagnosis reconfirmed with histopathological examination of the lesion.post operative follow up of patient was uneventful.

INTRODUCTION

Giant cell tumor (GCT) of a phalanx of a finger is extremely rare. Only 2% of all reported GCTs are found in the hand (Averill *et al.,* 1980) metaphyseal region of the metacarpals and phalanges is the most common site of GCTs in reported cases (Feldman and Clin 1987) high recurrence rate (Eckardt *et al.,* 1986) coupled with local aggressiveness after simple curettage often requires extensive en bloc excision. The recurrence of GCT of hand is higher than for other locations. Local recurrence following curettage and bone grafting has been reported to be as high as 90% (Wold *et al.,* 1984 and Patel *et al.,* 1987). Multiple procedures like excision (local or wide), ray amputation, and amputation are used to eradicate the disease completely. Local tumor Giant cell tumor (GCT) of a phalanx of a finger is extremely rare. Only 2% of all reported GCTs are found in the hand (Averill *et al.,* 1980) metaphyseal region of the metacarpals and phalanges is the most common site of GCTs in reported cases (Feldman and Clin, 1987) high recurrence rate coupled with local aggressiveness after simple curettage often (Clin *et al.,* 1986) requires extensive en bloc excision. The recurrence of GCT of hand is higher than for other locations.

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Local recurrence following curettage and bone grafting has been reported to be as high as 90% (Wold *et al.,* 1984 and Patel *et al.,* 1987). Multiple procedures like excision (local or wide), ray amputation, and amputation are used to eradicate the disease completely. Local tumor.

Case

A 27 year old female presented with a pain & swelling of the right ring finger base since three months duration without any history of trauma or fever. Examination revealed a fusiform swelling in the proximal phalanx of the right ring finger, no local rise of temperature, tender, firm in consistency and the overlying skin was stretched without adherence to the underlying mass. The adjacent joints had normal ranges of movements. No Regional lymphadenopathy. Radiographs demonstrated an expansile lytic lesion involving the base and proximal shaft of proximal phalanx with a thin cortical rim, without any periosteal reaction. The articular margins were found to be intact. Radiograph of the chest was normal. Complete blood picture & Serum biochemistry was within normal limits. She underwent FNAC of proximal phalanx swelling. Histo pathological examination revealed presence of sheets of mononuclear giant cells in a fibrous stroma, no evidence of any atypical cells or increased mitotic activity, suggestive of Giant cell tumour of bone. Later patient under went curettage of the lesion and cancellous bone grafting from

iliac crest. Curettaged bone tissue was sent for Histo pathological examination which re confirmed the diagnosis of Giant cell tumour.

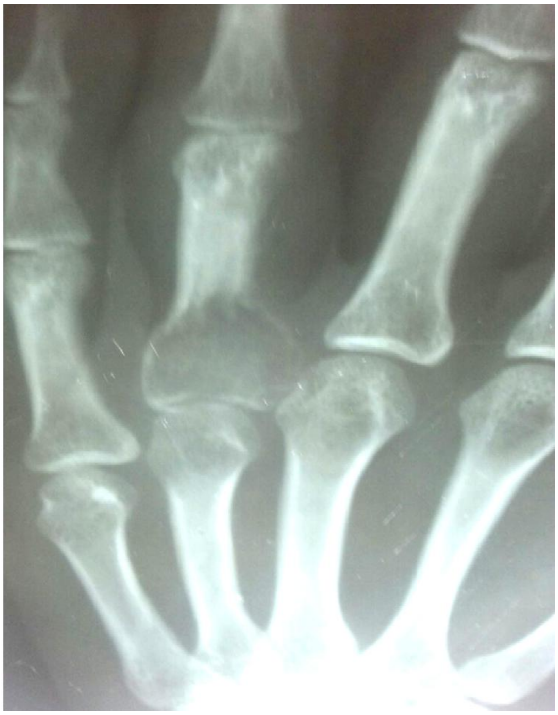

Figure 1. Lytic lesion involving the base and proximal shaft of proximal phalanx of ring finger

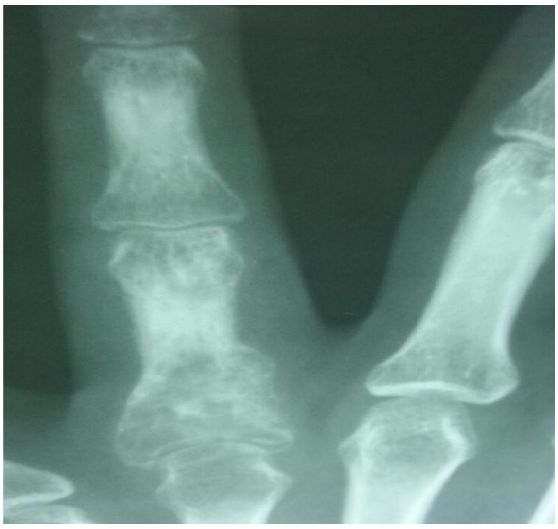

Figure 2. Radiograph showing ring finger proximal phalanx after curettage & bone grafting

Post operative period was un eventfull. During further follow ups patient has no swelling over the proximal phalanx, but patient has little restriction in range of movements at MCP & PIP joints. Her grip strength was normal, with good functional recovery. After 2 years patient presented again with pain and swelling of the previous operated site. No history of injury or fever. On examination a globular swelling over the proximal phalanx of the right ring finger. Operated scar is healthy without any evidence of ulcerations/ sinus. No local rise of temperature. Swelling is tender, firm in consistency and the overlying skin was stretched and adhered to the underlying mass.

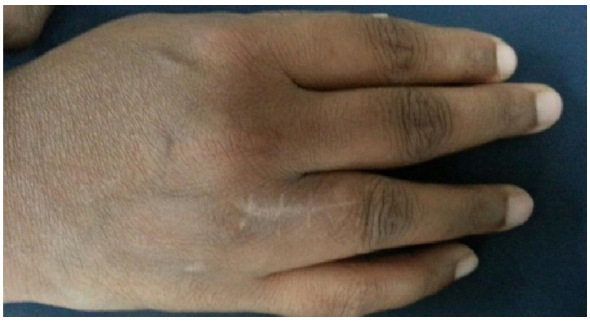

Figure 3. Clinical picture of patient ring finger with proximal phalanx recurrent swelling

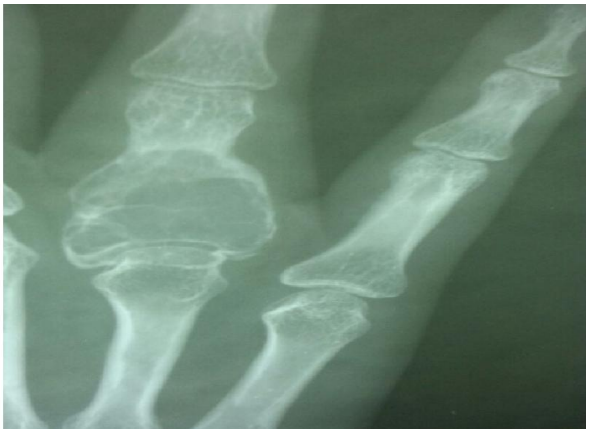

Figure 4.

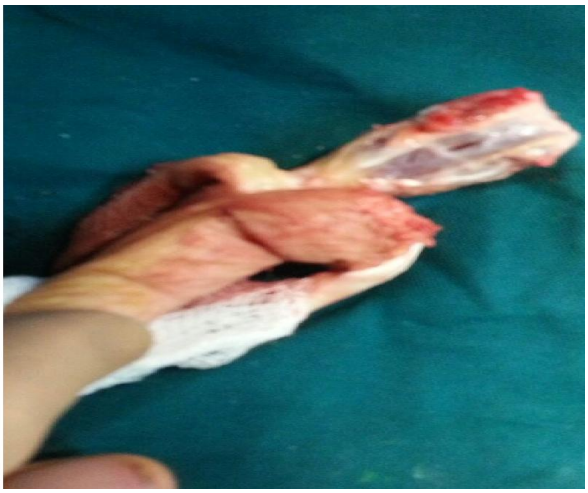

Figure 5.

The adjacent joints had restricted range of movements. No Regional lymphadenopathy. Radiographs demonstrated an expansile lytic lesion involving most of the phalanx with a thin cortical rim and break in continuity, without any periosteal reaction (Fig. 4). The articular margins were found to be intact. Radiograph of the chest was normal. Complete blood picture & Serum biochemistry was within normal limits. Patient had been explained of the further line of management with Ray resection of the ring finger. After getting proper consent for ray resection from patient and patient attenders. Ray resection of the ring finger was performed under general anesthesia. Resected tumor tissue was found to involve the proximal three fourths of the proximal phalanx, without involving the articular cartilage.

Table 1. Reported local recurrence after curettage, resection and amputation for GCT of the hand

Sl No.	Authors	No. of cases	Curettage ± bone graft		Resection or ray amputation	
			Nos.	Local recurrence	Nos.	Local recurrence
1.	Goldenberg	6	1	1	5	1
2.	Averill et al.	28	15	13	7	3
3.	Wold et al.	34	29	20	9	1
4.	Patel et al.	5	3	2	2	0
5.	Athanasian et al.	14	14	11	14	5
6.	Daniel et al.	1	1	1	–	–
7.	This study	1	1	–	1	–

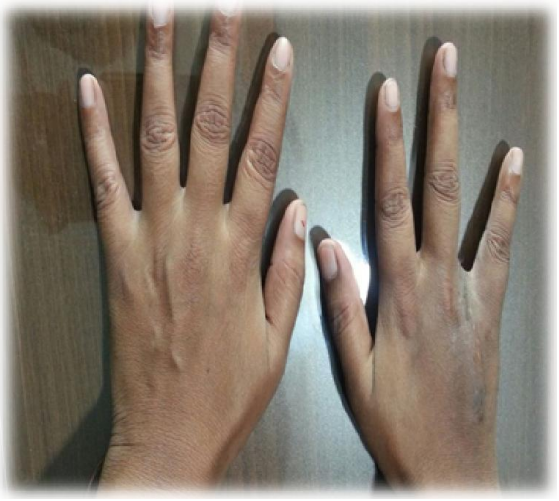

Figure 6.

Figure 7.

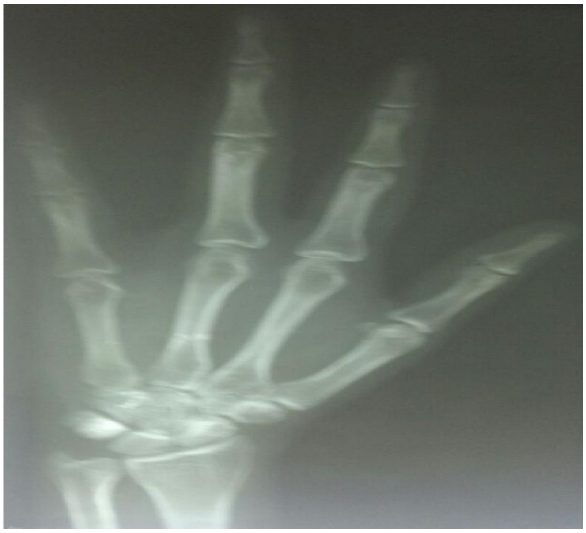

Figure 8.

The tumourous part in the riesected was sent for histopathological examination, which re confirmed the diagnosis of Giant cell tumour. The patient had an uneventful recovery. No clinical nor radiological evidence of local recurrence was seen during later follow ups. She was able to perform normal activities of daily life. There was no limitation on the grip, the strength or motion of the uninvolved digits or wrist. Clinical pictures and radiographs of patient during recent follow up were as follows

DISCUSSION

Only 2% of all reported GCTs are found in the hand and seems to be different from conventional GCT, which occurs at other sites in the skeleton. Recurrence is more rapid in the hand than they do in other locations. It is even rarer to encounter a GCT arising from the phalanges. Of the more than 2,400 skeletal GCTs reported in the literature, less than 50 were found to involve the phalanges of the hand (Patel *et al.,* 1987), (Coley *et al.,* 1958) reported only two cases of GCT arising from the phalanges in their series of 108 cases. Goldenberg *et al*., in their analysis of 218 cases of GCT, reported six cases involving the phalanges (Campbell and Campbell, 1970). In another two large series of 568 and 327 cases of GCT, authors found only four and one cases of phalangeal involvement, respectively (Campanacci *et al.,* 1987). Yasudal *et al.* (2008) reported a multicentric giant cell tumor of the hand involving a finger and the wrist. Benign metastazing giant cell tumor of the hand has also been reported (López-Barea *et al.,* 1992).

In our series of 124 skeletal GCTs, we could find only two cases involving the phalanges. Giant cell tumors of the hand have been treated with curettage and cancellous bone grafting, wide resection, and structural bone grafting or ray amputation (Slesarenko *et al.,* 2005). High local recurrence rates have been reported with these treatment modalities. Daniel *et al.* (2000) reported a GCT of the middle phalanx treated with curettage and bone grafting, which recurred at 9 months and was successfully treated by excision and allograft replacement. Wittig *et al*. (2001) reported three cases of phalangeal GCT treated with curettage, cryosurgery and cementation. Resection–iliac graft and double arthrodesis for GCT of the proximal phalanx of the thumb has also been reported (Fnini *et al.,* 2008). In Our patient, recurrence developed after curettage and iliac bone grafting followed by which she under went ray excision of ring finger.

She recovered uneventfully. To avoid stiffness of fingers and tendon adhesion, we started active finger rehabilitation

measures as early as the second week. The patient was still disease free at the most recent follow-up, and was performing normal activities with a good grip strength. Most local recurrences of GCT cases of the hand are reported to occur within one year of primary surgery (Averill *et al.,* 1980). Patel et al. treated three cases of GCT of the hand with curettage and bone grafting, two of which had local recurrence and required ray resection. Averill *et al.* (1980) reported one of the largest series of GCT of the hand, consisting of 28 lesions (14 in the phalanges) in 21 patients. Sixteen of the cases had local recurrence. Two of the six cases of finger phalangeal involvement reported in Goldenberg's series developed local recurrence.

Table 1 shows the reported local recurrence rates of GCT of the hand following curettage, resection and amputation. Most of the GCT cases with recurrent tumors require ray amputation to prevent recurrence. There are reports of success with ray resection or amputation at the cost of the loss of a functional finger (Patel *et al.,* 1987 and Slesarenko *et al.,* 2005). We chose ray resection of the amputated ring finger with the aim of preventing recurrence. The recurrent tumor in our patient expanded eccentrically, leading to breakage of the surgical scar and ulcer formation. Contrary to malignant ulcers, the margin of the ulcer was not everted and did not bleed on touch. Histology of the lesion also revealed osteoid formation. Kumar and Tuli (1971) and Dahlin *et al*. (1996) reported similar histological findings in their series. Following ray resection of the ring finger, there was no functional loss of the hand in our patient. The patient was satisfied with a cosmetically improved hand. In view of the comparative rarity of a recurrent tumor arising from the phalanges of the finger, the present case is considered worth reporting.

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