Giant Cell Tumor of Distal Phalanx of the Second Toe
A Case Report

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ABSTRACT

Giant cell tumor accounts for approximately 6% of all bone tumors and above 20% cases of benign bone tumors. It typically involves the long bones in young adults with slight female preponderance. Its location at the distal phalanx of a toe is rather unusual.

We report a rare case of giant cell tumor arising in the distal phalanx of the second toe in a 42-year-old female who presented with complains of pain and swelling of the second right toe. The tumor showed highly aggressive behavior with ulceration of skin necrosis and the radiography showed an expansile lesion in the distal phalanx. The patient underwent radical excision five months after diagnosis.

Keywords: Giant cell tumor, distal phalanx, second toe

1. INTRODUCTION

Giant cell tumor (GCT) is a relatively common benign bone tumor that accounts for 5% of all primary bone tumors and almost 20% of benign primary bone tumors\(^1\). It usually occurs at the epiphysis of the long bones after skeletal maturity. Involvement of the toe phalanx by giant cell tumor is extremely rare, and its behavior is unpredictably when located in these areas\(^2\). The present report describes an unusual location of GCT located in the distal phalanx of the second toe and incorporates a brief review of the literature.

2. CASE REPORT

A 42 years old female presented to our department with complains of pain and swelling of the second right toe for five months. On examination, there was diffuse swelling of the second toe with skin necrosis (Fig.A). The X-ray showed an osteolytic expansive lesion involving the distal phalanx (Fig.B). Excisional biopsy was planned and radical excision was performed. Histopathological examination confirmed the diagnosis of GCT involving the distal phalanx and the margins of excised phalanx were negative for tumor.

The five-year follow-up has not revealed any signs of recurrence (Fig. C and D) and patient returned to full activity similar to his preoperative status.

**Fig. A:** Diffuse swelling of the second toe with skin necrosis

**Fig. B:** Antero-posterior view of right foot showing osteolytic lesion in distal phalanx of the second toe

**Fig. C:** Control after excision of the lesion

**Fig. D:** Antero-posterior x-ray view of right foot after excision of the lesion

### 3. DISCUSSION

Giant cell tumor of the bone is an uncommon benign bone tumor with locally aggressive behavior of unknown origin\(^3\). This tumor is most frequently occurs in the metaphyseal region of the long bones in young adults with slight female preponderance, in particular, the distal femur, proximal tibia, distal radius, and...
proximal humerus. Its occurrence in the small bones is very rare\textsuperscript{1,4} and presents as an expansile lytic lesion and may even involve adjacent bones\textsuperscript{4}. Histologically it is important to differentiate these tumors from other giant cell such as aneurismal bone cyst, non-ossifying fibroma, infection, brown tumor, enchondroma, chondroblastoma and chondromyxoid fibroma which can have remarkable clinicoradiological similarity to GCT\textsuperscript{5}. The standard treatment options for GCT include curettage, extended curettage or en bloc excision. Because of the high recurrence rate associated with GCT of the small bones, Fujisawa et al.\textsuperscript{6} recommended amputation or complete block resection of the tumor as the primary surgical treatment of GCT of the phalanx. Alvarez Ramos et al.\textsuperscript{7} also recommended en bloc resection of the tumor, but not curettage, for the treatment of GCT located in the phalangeal bone.

So, the less aggressive treatments have high rate of recurrence and en bloc excision may be more useful when morbidity is less\textsuperscript{8,9}. Radical excision was chosen in this case due to aggressive radiological features and skin necrosis. Most recurrences after treatment of GCT occur during initial 2 years although late cases have been reported and surveillance for recurrence should continue for at least this period\textsuperscript{10}.

4. CONCLUSION

In conclusion, the treatment of giant cell tumors located at small bones is not standardized. We should be guided by consideration of an individual patient’s overall condition and should be careful in choosing the optimal treatment as recurrence rates are very high at these locations. Radical excision and continuous control could be preventing the recurrence.

CONFLICT OF INTEREST
The authors declare that they have no competing interest.

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