Giant Cell Tumor in 1st Metatarsal Bone: A Rare Case Presentation

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Abstract:

A rare case of giant cell tumor of the first metatarsal bone, this case came to out-patient clinic Ibn Sinaa Hospital in Mukalla, Yemen. The case is a female 35 years old. The patient was diagnosed clinically, radiologically and histologically as giant cell tumor. Wide excision done, non vascularized fibula graft was fixed by k-wire. Worldwide only few cases of giant cell tumor in metatarsal bones was reported

Key wads: giant cell tumor (GCT). non-vascularized fibular graft
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قسم الجراحة العامة والتخصصات الجراحية الفرعية وقسم العلوم الطبية الأساسية كلية الطب
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ملخص:

حاله نادرة لسرطان الخلايا العملاقه في مشـــط القدم الاول هذه الحالة وصلت العيادة الخارجيـــة لمستشفي ابـــن سيناء – المكلا – اليمن
سيـــدة تبلـــغ من العمـــــر 35 عاماً شخصـــت سريريـــاً وشعاعيـــاً وبالانسجة كحالة سرطان الخلايا العملاقة
تم استئصال واسع للورم ، طعم عظمي غيـــر وعائـــي من عظم الشظيه وتم تثبيته بسيخ
حول العالم سجلت حالات قليلة لسرطان الخلايا العملاقة في أمشاط القدم

Introduction:

Giant cell tumor (GCT) of bones is a rare, aggressive benign tumor, it generally occurs in adults between ages 20-40 years [1]. More common in females, less common in children., 50% occur around the knee, and vertebra and sacrum about 10% [2]. Make up 5% of all primary tumor bones [3]. GCTs occur up to one person per million per year [1]. Less than 50 cases of GCTs in the foot bones have been reported in literature [3].

Most of bone tumors occur in the flared portion near the ends of long bones (metaphysis), but GCT of bones occur almost exclusively in the end portion of long bones next to joint (epiphysis) [1].

Symptoms:

The most frequent affected areas are areas around the knee joint, other common location include wrist, hip, shoulder, lower back (connection spine and pelvis) [1].

Metatarsal bones are rare locations for giant cell tumor [1].

The bone involved generally tender there may swelling in the area around.

Diagnosis:

Giant cell tumor appear in x-ray as destructive lesion next to the joint, occasionally the involved area of bone can be surrounded by a thin rim of white bone that may be complete or complete, the bone in the area of the lesion is sometimes expanded.

Case report:

A 35 years old female, house-wife, married, referred from outpatient, came with complaining of swelling of left foot over the big toe since one year gradually increase in size, painless.

No history of trauma, with insignificant family or medical history.

On examination:

Localized swelling at the dorsum of left foot over the first metatarsal bone 5cm firm in consistency, immobile, non-tender, not hot, Not red, not attached to skin. Blood investigation: Hb11gm/dl, WBC: 7400 cells/cubic mm, ESR 25 mm/hour

Figures 1&2 show: Left foot swelling over the first metatarsal bone of the left foot (before surgical excision of the tumor).

Fig. (1):

Fig. (2):

Radiography:

Shows severely osteolytic lesion, over the whole left first metatarsal bone expansion and erosion of the cortex, soft tissue swelling around.

Needle aspiration: taken histology show giant cell tumor.

Fig. (3):

shows X-ray of the metatarsals (Anterior-posterior view)

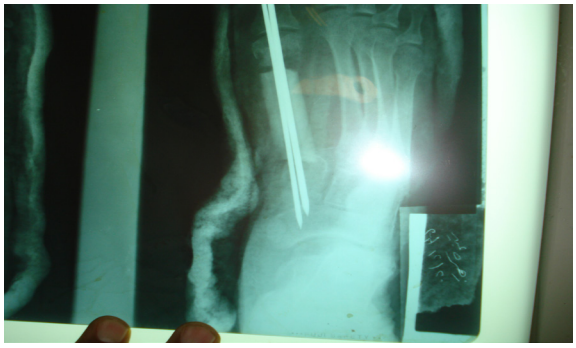
Fig. (4): Shows X-ray of metatarsals (lateral view)
Surgical Intervention: Excision of the first metatarsal and all soft tissue and replaced by non-vascularized fibular graft fixed by 2 k-wires.

Fig. (5): tumor of the first left metatarsal bone (intra-operative)

Table 2- Five similar cases of metatarsal giant cell tumor reported in literatures.

Cases	Age	Sex	Side	Location	Treatment	Reference
1	23	M	R	1st metatarsal	excision	Singh et al [3]
2	32	F	R	2nd metatarsal	Excision & fibular graft	Mahajan S et al [4]
3	35	M	R	1st metatarsal	excision	Khanna et al.[5]
4	5	F	R	1st metatarsal	Excision & fibular graft	Huda N et al [6]
5	26	F	L	1st proximal phalanx	excision	Dridi et al [7]

Fig. (5):shows post operative radiograph of the first left metatarsal bone where non-vascularized fibular graft fixed by 2 k-wires.



Treatment:

Surgery have proved the most effective treatment for GCT, phenol followed by the placement of bone cement decrease the recurrence rate to 10-20%. Tumor removal and reconstruction is sometimes necessary in situations where tumor has cause excessive damage [1].

Discussion:

Giant cell tumor is a benign locally aggressive tumor rarely has cancerous metastasis to lung. Only five similar cases in the foot were reported in literatures that presented in table 1. [3,4,5, 6,7]

Regarding gender out of these five cases, two were males and three were females. Regarding location three out of five cases where the tumor in the first metatarsal like our case. Only two cases done for her excision with fibular graft but one case is female (32 years) and the other is a child (female, 5 years) had tumor in the first metatarsal bone. Up to our

knowledge; this is the our case is the first female adult had giant cell tumor in the first metatarsal bone and done for her excision with fibular graft.

Conclusion:

GCT is a benign, locally aggressive tumor, rarely malignant and rarely occurred in the metatarsal bone. It is diagnosed radio logically and by biopsy. Reconstruction surgery (excision and graft) is required but mostly no need for radio or chemotherapy.

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