A large metatarsal giant-cell tumor

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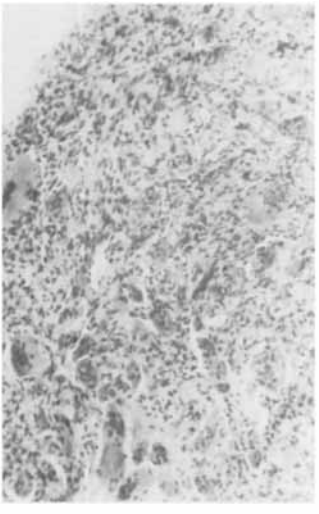
A case of 14-cm giant-cell tumor of the first metatarsal bone of a 35-year-old male is reported.. A ray excision was carried out. The patient has now been free from disease for 3 years.

A 35-year-old Indian male sought medical advice in March 1986 because of pain and swelling in the right foot of 1-year duration. There was no history of systemic disease or trauma. A ball-like tumor was located on the dorsum of the foot extending from the base of the great toe to 3 cm below the ankle joint and laterally to the third metatarsal space, projecting 6 cm medially (Figure 1). The tumor measured 13 cm × 14 cm. Radiographs showed expansion and destruction of the shaft of the first metatarsal along with a honeycomb appearance with a soft-tissue shadow. A chest radiograph was normal. A needle biopsy examination confirmed a giant cell tumor. Excision of the tumor included a ray resection of the first metatarsal together with the cuneiform and phalanges of the great toe. A gross examination revealed a well-circumscribed tumor with hemorrhage, necrosis, cystic degeneration, and friable tissue encased in a thin shell of bone. A microscopic examination showed scattered osteoclastic giant cells and rich cellular stroma. The stromal cells were plump, oval to spindle-shaped with ill-defined cytoplasm; further, they had varying degrees of pleomorphism, and, finally, there were occasional mitotic figures with areas of focal hemorrhage. At 3 years, there was no recurrence.



A. At admission.





B. Microphotograph showing scattered osteoclastic giant cells and cellular stromal cells. HE, ×125.

Figure 1. A 35-year-old man with a giant cell tumor of the right first metatarsal bone.

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Discussion

Thirteen cases of giant cell tumors of metatarsals have been described (Coley and Higinbotham 1938, Ralph 1961, Schajowicz 1961, Masalwala et al. 1962, Goldenberg et al. 1970, Larsson et al. 1975, Marcove et al. 1978, Bazilevskaya 1979, Mohan et al. 1980, Sung et al. 1982, Tuli et al. 1984). Dahlin's (1985) series of 407 cases of giant cell tumor surprisingly did not include any metatarsal cases, although there were 4 tarsal, 1 carpal, and 3 metacarpal tumors. The clinical behavior of the giant cell tumor of the metatarsal bone is determined by the scarcity of space on the dorsum of the foot; the common finding is the soft-tissue mass. In our case the tumor originated from the distal epiphysis and subsequently involved the entire diaphysis.

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