GIANT-CELL TUMOURS OF THE SOFT TISSUES

A. SCHMAMAN, M.B., B.CH. (RAND), *South African Institute for Medical Research;* I. PENN, M.B., B.CH. (RAND), F.R.C.S (ENG.);* and V. SOROUR, M.B., B.CH. (RAND), *Department of Surgery, Baragwanath Hospital and University of the Witwatersrand, Johannesburg*

Giant-cell tumour (osteoclastoma) is by no means an uncommon tumour of bone. While giant cells may be found in various soft-tissue tumours,[1-3] giant-cell tumours with histological features indistinguishable from those of tumours that occur in bone are uncommon outside the skeletal system. Most have been described in the gums and in tendon sheaths, and in other situations they are very rare indeed. We have been able to find only 4 such cases described. The purpose of this paper is to report another case, which has occurred in a very unusual situation, namely in the buttock.

CASE REPORT

J.M., an African male aged 68 years, was admitted to this hospital complaining of a painless swelling in the perineum and right buttock for about 1 month. There was no history of trauma and his general health was good.

Examination and Investigations

A large fungating mass, 6 inches by 4 inches in size, was situated in the perineum and right buttock posterior to the scrotum. Its edge extended to within 1½ inches of the anal margin. The mass had ulcerated through the skin and its surface was covered with offensive purulent discharge. It was freely mobile on the underlying structures and was firm and rubbery in consistency. The inguinal lymph nodes on both sides were enlarged and tender. The remainder of the physical examination was normal, apart from slight anaemia.

The clinical diagnosis was a fibrosarcoma or liposarcoma of the buttock and perineum.

Haemoglobin 12·1 G.%. Haematocrit 39%. MCHC 31%. White blood-cell count 4,300 per c.mm. (neutrophils 65%, lymphocytes 31%). Erythrocyte sedimentation rate 35 mm. in 1 hour. Serum calcium 10·2 mg.%. Serum phosphorus 4·7 mg.%. Serum protein 7·4 G. per 100 ml. (albumin 2·8, globulin 4·6). Alkaline phosphatase 5·2 King-Armstrong units. Acid phosphatase less than 1 unit per 100 ml.

X-ray of the chest was normal. Postoperative radiological skeletal survey was also normal.

* Present address: Department of Surgery, Cleveland Metropolitan General Hospital, Cleveland 9, Ohio, USA.

Treatment

After the superficial infection of the tumour had been eradicated a wide local excision of the mass 1 inch clear of its palpable margin was made with the iso-electric point. The excision included skin, superficial and deep fascia, and a small portion of the right gluteus maximus muscle. There was no attachment to bone. The defect in the buttock was closed by means of a split skin graft. Two pints of blood were administered during the operation. Postoperative convalescence was uneventful and the grafted area healed satisfactorily. The patient was last seen 8 weeks after operation, when he was perfectly well, with no signs of recurrence.

The Tumour

Macroscopically the tumour (Fig. 1) was about 10 cm. in diameter and 6 cm. thick. It projected above the surface of the skin, which was ulcerated over the whole surface of the

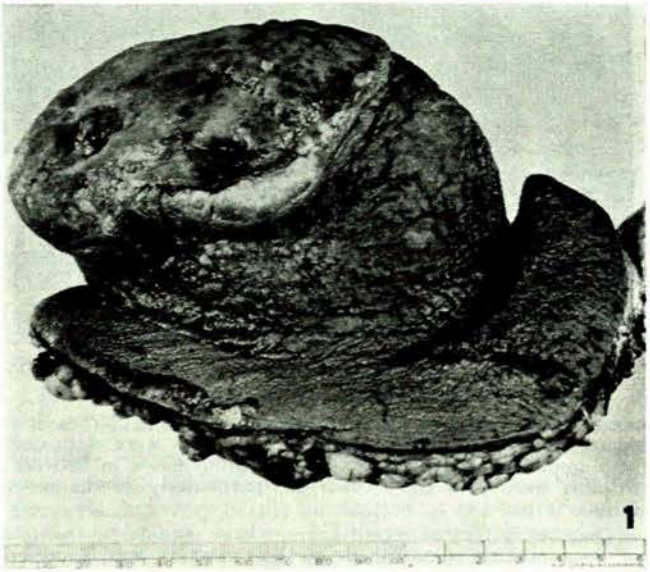

Fig. 1. Tumour projecting above surface of skin and showing ulceration of the surface. Scale in cm. and mm.

tumour. Microscopic examination of sections taken from various parts of the tumour (Figs. 2 and 3) showed a fairly uniform picture of numerous multinucleated giant cells in a cellular 'stroma'. The giant cells contained numerous (up to 100) centrally grouped round or oval nuclei with distinct nucleoli. Occasional nuclei showed karyorrhexis. The eosinophilic cytoplasm was occasionally vacuolated and in a few cells contained haemosiderin granules. The appearance of the 'stromal' cells varied in different parts of the tumour. In some areas the cells were round or oval, with distinct cell borders,

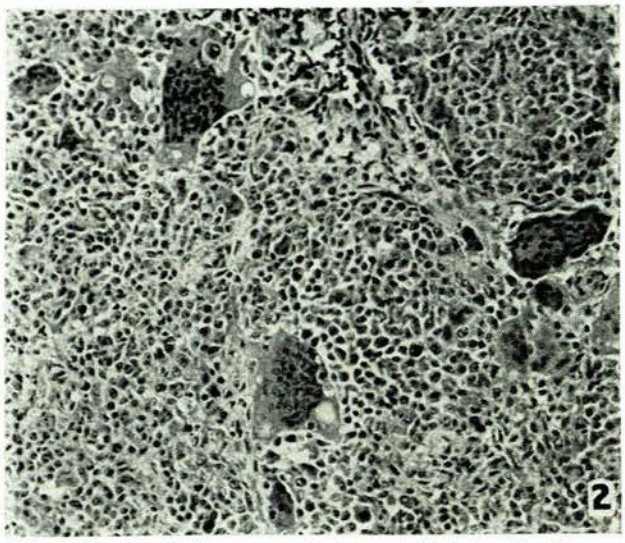

Fig. 2. Section of the tumour showing several giant cells. Haematoxylin and eosin, x 120.

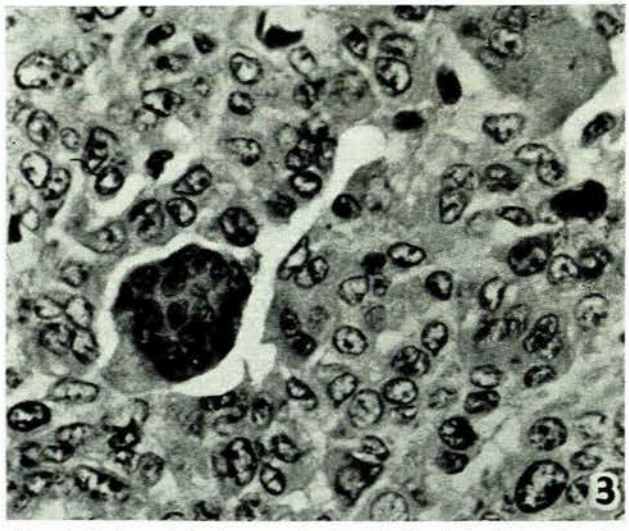

Fig. 3. Section of the tumour showing details of the 'stromal' cells and one giant cell. Haematoxylin and eosin, x 480.

eosinophilic cytoplasm, and a single round vesicular nucleus containing 1 or 2 nucleoli. In other areas they were elongated, with spindle-shaped nuclei and with fibrous tissue in between. Mitoses were frequently observed, particularly in the more cellular areas.

There were foci of recent haemorrhage, and large amounts of haemosiderin (confirmed by Perl's stain) was scattered throughout the tumour.

X-ray of the specimen showed a tiny speck of calcification, but numerous histological sections of the suspected area failed to show any evidence of this.

DISCUSSION

Extraskeletal giant-cell tumours (excluding lesions of gums and tendon sheaths) have been described on only 4 previous occasions.

Mallory[4] described a case in which proliferation of giant cells followed a destructive lesion of fatty tissue in the pubic region. Geschickter and Copeland[5] felt that in this case the giant cells were derived from the sesamoid bone lying in the psoas muscle.

Geschickter and Copeland had two cases of this type of tumour. One was situated in the gastrocnemius muscle and was considered to have arisen from the fabella (the sesamoid bone situated in the lateral head of the gastrocnemius muscle near its origin). In the second case it was situated in the neck and was diagnosed clinically as a mixed parotid tumour. Histological examination revealed xanthomatous tissue as well as giant cells. They considered that it arose from the lower portion of the styloid process, which is derived from cartilage and has a separate centre of ossification. The foam cells and giant cells of the tumour were considered to be derived from the stylomandibular ligament and the lower part of the styloid process respectively.

A similar case was reported by Thomas[6] in an African female aged 60. The tumour was situated behind the left ear and was considered to have arisen from the styloid process, although no conclusive proof of this was available. In all of these cases it has been possible to trace the origin of the tumour to a bony structure.

The present case is unique in that, although the tumour lay close to the ischial tuberosity it was not connected to it, nor are there any sesamoid bones in the region in which this tumour arose. Apparently the tumour arose *de novo* from the connective tissues in the buttock and perineum. Giant cells are frequently found in the vicinity of areas of haemorrhage, particularly in bone lesions. The giant cells in this case were evenly distributed and were not more frequent near haemorrhagic areas.

SUMMARY

Extraskeletal giant-cell tumours are very rare. To our knowledge only 4 cases have been described, all of which had some connection with bony structures. The present case, a giant-cell tumour of the buttock, is unique in that no osseous connection could be found.

We thank Dr. I. Frack, Superintendent of Baragwanath Hospital, for permission to publish details of this case, and Mr. S. Kleinot, Senior Surgeon, for permitting us to treat the patient, who was admitted under his care. We thank the Director of the South African Institute for Medical Research for the facilities granted. Mr. M. Ulrich, of the photographic department of the South African Institute for Medical Research, produced the photographs.

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