

# Phaeochromocytoma of the spermatic cord

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## Abstract

**Phaeochromocytoma of the spermatic cord is very rare. It can arise anywhere in the distribution of cells of neural crest origin, but 80–90% arise in the adrenal medulla and only 3% are extra-abdominal. A small tumour may be asymptomatic because insufficient catecholamines are secreted to cause haemodynamic disturbance.**

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Phaeochromocytoma of the spermatic cord is very rare—there have been only two previous reports of cases.<sup>1 2</sup>

## Case report

The patient, a 52 year old man, was referred with a one month history of a tender lump within the right spermatic cord. On clinical examination this was thought to be a cyst. Physical examination was otherwise unremarkable. He underwent elective exploration of the right inguinal canal and was found to have a nodule within the spermatic cord, which was excised. During excision of the nodule, there was no significant haemodynamic disturbance.

## HISTOLOGY

The specimen was a firm tumour nodule measuring 1.5 × 1.5 × 1 cm. It was relatively well circumscribed, but non-encapsulated. It consisted of solid groups of large paragangliomatous cells having round nuclei with conspicuous nucleoli and a large amount of granular eosinophilic cytoplasm. The groups of tumour cells were focally surrounded by recognisable sustentacular cells with rather hyperchromic and elongated nuclei (fig 1). The background of the tumour was intersected by arborising sinusoidal blood vessels with a focal haemangiopericytic pattern. The paragangliomatous cells showed focal mild to moderate nuclear pleomorphism with occasional multinucleation and occasional mitoses, and also some cytoplasmic vacuolation. Grimelius special stain revealed the presence of argyrophilic granules, but Diazo reaction was negative. PAS and PAS/diastase special stains showed no evidence of glycogen granules in the paragangliomatous cells. Immunohistochemical staining for chromogranin was strongly positive in the paragangliomatous cells, while the sustentacular cells were positive for S100 protein. Numerous membrane bound dense core neurosecretory granules were demonstrated in the cytoplasm of the tumour cells on electron microscopy (fig 2).

## POSTOPERATIVE INVESTIGATIONS

Postoperatively, computed tomography of the patient's neck, mediastinum, and retroperitoneum revealed no abnormality. A 24 hour urine collection for 5HIAA was negative. The patient remains well more than one year after surgery.

## Discussion

Phaeochromocytomas can be found anywhere in the distribution of neural crest derived cells. Most (80–90%) arise in the adrenal medulla, with the remainder mainly arising from the organ of Zuckerkandl. Only 3% of phaeochromocytomas are extra-abdominal, and most of these arise in the paravertebral region in the chest.<sup>3</sup>

The tumour in this case was probably too small to secrete a sufficient quantity of

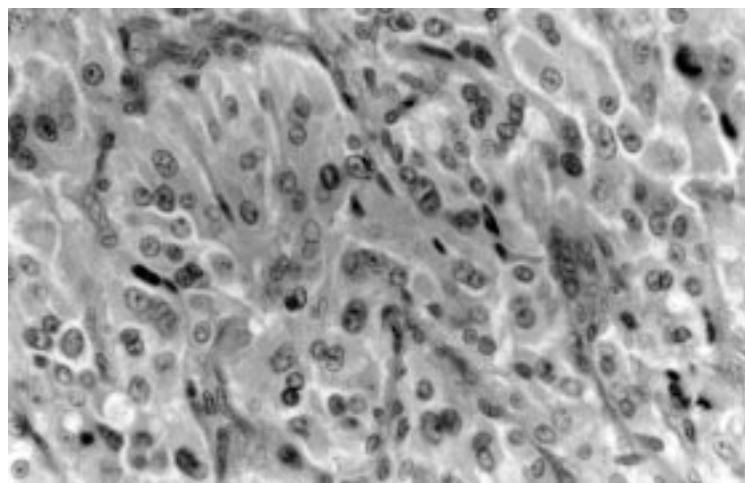


Figure 1 Nests of alveolar structures of large polyhedral chromocytoma cells surrounded by sustentacular spindle cells (haematoxylin and eosin; original magnification ×40).

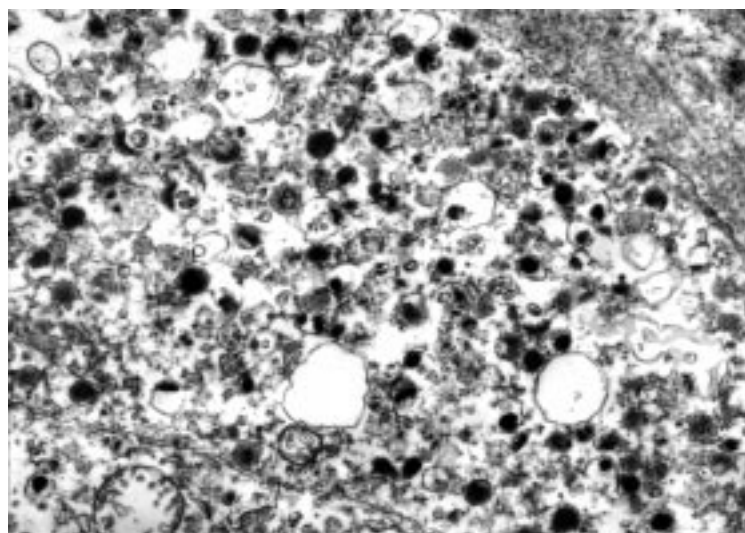


Figure 2 Numerous membrane bound dense core neurosecretory granules in the cytoplasm of the neoplastic cells (electron microscopy, original magnification ×10 260).

catecholamines to produce haemodynamic disturbance.

- 1 Eusebi V, Massarelli G. Pheochromocytoma of the spermatic cord: report of a case. *J Pathol* 1971;105:283-4.
- 2 Soejima H, Ogawa O, Nomura Y, *et al.* Pheochromocytoma of the spermatic cord: a case report. *J Urol* 1977;118:495-6.
- 3 Morris PJ, Malt RA, eds. The adrenal gland. In: *Oxford textbook of surgery*, ch 11.3. Oxford: Oxford University Press, 1994:782-5.

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