Adult pre-sacral teratoma

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Summary

The clinical details and management of an adult female patient with a pre-sacral teratoma causing obstructed labour are described.

Case report

Following an uneventful pregnancy, a healthy 19-year-old primigravida required emergency Caesarian section for failure to progress in labour. This was due to the presence of a pre-sacral mass displacing the pelvic organs anteriorly. After delivery of a healthy male child investigations were undertaken.

The mass could only be felt by rectal or vaginal examination and the cervix was obscured from view by vaginal distortion. Plain abdominal

radiographs failed to demonstrate the tumour but excretion urography demonstrated elevation and compression of the bladder from behind. A barium enema demonstrated anterior displacement of the rectum (Fig. 1) and arteriography showed no tumour circulation.

At laparotomy the pelvic organs were displaced antero-superiorly by a fixed retroperitoneal pre-sacral mass. The rectum was mobilized anteriorly and the pre-sacral space opened. The tumour was separated with difficulty from the rectum by blunt dissection but could not be completely excised through the abdominal incision. A separate transverse perineal incision was used and the tumour excised. Postoperatively the sphincter control was normal.

FIG. 1. Barium enema (lateral view) showing anterior displacement of rectum by pelvic tumour.

Pathology

The tumour measured $13 \times 13 \times 8$ cm and weighed 885 g (Fig. 2). One large fibrolipomatous nodule measuring 12×9 cm was surrounded by numerous mucus-containing cysts. Microscopically, derivatives of all 3 germ layers were represented. Some cysts contained mucin-secreting or ciliated cuboidal epithelium of ectodermal origin. Connective tissue derived from mesoderm was present and mast cells, adipose cells and collagen bundles were distributed throughout mixed with striated and smooth muscle fibres. Neural tissue derived from the ectoderm was represented by ganglion cells and peripheral nerves and in some areas differentiation had progressed to the formation of tissue resembling spinal cord.

The close association of neural tissue with ciliated columnar epithelium suggested that some cysts were ependymal. There was no evidence of malignancy in any of the sections examined.

FIG. 2. The excised pre-sacral teratoma.

Discussion

Since 1847, 71 cases of pre-sacral teratoma in adults have been documented, of which 75% occurred in females (Head, Gerstein and Muir, 1975). They are uncommon in children and rare in adults. Whilst 11% of patients are asymptomatic and the diagnosis is made on coincidental rectal or

vaginal examination, most present within the first 2 decades with a mass or a discharging sinus. Obstetric complications occur infrequently and only one other case of obstructed labour has been documented (Law, 1922). Rupture of a pre-sacral cystic teratoma during vaginal delivery has also been reported (Bloch, Weismann and Trotter, 1956).

Several theories have been advanced to explain the genesis of pre-sacral teratomas. Failure of resorption of the post-anal gut (Middledorpf, 1885) or the escape of embryonal cells from hormonal organizers (Askanazy, 1907) have been postulated. Current opinion favours the development of teratomas from pluripotent cells, i.e. capable of producing 2 or more germ layers derived from Henson's node (Willis, 1967). In this tumour, tissues derived from all 3 germ layers were evident. The degree of differentiation of the neural tissue into spinal cord may explain the association of these tumours with spinal cord abnormalities. In common with most pre-sacral teratomas this tumour was benign but malignancy may occur in 11% of cases where the tumour has been present for over 40 years (Head *et al.*, 1975).

Recurrences after total excision are rare and the incision used may be abdominal, abdomino-perineal or perineal, according to tumour size and mobility. Removal of the coccyx and lower sacral segments may be necessary (Kraske, 1886).

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