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Ovarian fibroma in a prepubertal girl

Abstract  Ovarian fibroma rarely occurs in prepubertal girls. However, we found such an asymptomatic, large, uncalcified pelvic mass in an otherwise healthy 12-year-old girl. The plain films (radiographs), US and CT findings are presented.

Introduction

Ovarian fibroma is an uncommon neoplasm most frequently seen in middle-aged women. The occurrence of this tumour in the prepubertal period is quite rare. Calcification and bilaterality are unusual features, but are documented in association with basal cell nevus syndrome [1, 2, 3]. The symptomatology is non-specific, and definitive diagnosis is usually made after operation. A large tumour of this kind diagnosed in an asymptomatic 12-year-old girl is presented.

Case report

A 12-year-old girl was referred to paediatric surgery owing to an abdominal mass palpated by the patient herself 1 month prior to admission. No abdominal pain or vomiting was present. Bowel movement was normal. On physical examination the abdomen was distended. A solid, non-tender, mobile mass, approximately 15 cm in diameter, was palpated at the lower abdomen. On rectal examination the mass was palpated anterior to the rectum. Laboratory data, including levels of α-fetoprotein and carcinoembryonic antigen and urine examination results were normal.

A plain abdominal film demonstrated a large abdominal mass without calcification which displaced the bowel laterally (Fig. 1). Ultrasound examination of the abdomen and pelvis revealed a non-homogeneous solid mass of pelvic origin, reaching the umbilical level. No calcifications were detected. The uterus and the right ovary were normal. The left ovary was not seen clearly and the origin of the mass could not be well delineated (Fig. 2). Axial contrast-medium enhanced CT scan of the abdomen showed a large well-defined solid abdominal mass with small necrotic areas and without calcification. The mass extended from the mid-abdomen to the pelvis behind the bladder, displacing the bowel laterally. No hydronephrosis, lymphadenopathy or bowel obstruction was noted (Fig. 3 a, b).

At operation a solid, round, non-adherent mass with smooth borders, 15 cm in diameter, was found attached to the left fallopian tube. The uterus and the right adnexa were normal. The mass was resected along with the left adnexa. The postoperative course was uneventful.

Pathology

Macroscopic findings

On gross examination the left ovary was covered by a smooth congested capsule, measured $14 \times 16 \times 18$ cm and weighed 600 g. The tumour mass showed an elastic consistency. On the outer surface an elongated fallopian tube was present which was 9 cm in length, 0.9 cm in diameter, with a smooth regular outer surface. In the ovarian hilus a small amount of fat was present. The cut surface showed a white-redish solid tissue, elastic in consistency, with prominent collagen boundaries. No necrosis, bleeding or macrocalcification was seen (Fig. 4).

Microscopic findings

The histological picture showed a lesion composed of elongated fibroblasts and of varying cellular density in different areas. Abundant collagen fibres were present, as well as one to two mitoses in...
Fig. 1 Plain abdominal film shows a large abdominal mass with bowel displacement.

Fig. 2 Longitudinal US view of the mid- and lower abdomen shows a well-defined, non-homogeneous, non-calcified mass above the urinary bladder.

Fig. 3a, b Axial computed tomography scans at the level of the abdomen (a) and the pelvis (b) demonstrate a large inhomogeneous solid mass without calcification.

A fibroma may be a component of two unusual clinical syndromes: (1) Meigs' syndrome, in which a fibromatous ovarian tumour is associated with ascites and pleural effusion, and (2) basal cell nevus syndrome (Gorlin's syndrome), which is a rare autosomal dominant entity characterized by multiple basal cell carcinomas early in life, keratocysts of the jaw and abnormalities of bones, eyes, reproductive organs and nervous system. Bilateral masses and calcifications, uncommonly seen in ovarian fibromas, occur more frequently in this context [3, 4].

Less than 10% of fibromas are encountered in patients under 30 years and represent 0.5–2% of all tumours found in childhood. Only 10% of fibromas reported in children are bilateral and calcification in the mass is less frequent than in the adult age group [3, 4]. In most series of pelvic masses in paediatric ages, ovarian fibromas are either very rare or seldom reported.

discussion

Ovarian fibroma is a rare neoplasm accounting for only 4.5% of all ovarian tumours. This stroma tumour is a non-functioning solid mass, unilateral in 90% of patients [1, 2]. Most frequently, ovarian fibroma occurs in middle-aged women. It is classified under the sex cord-stromal tumour group which includes thecomas, granulosa cell tumours and Sertoli-Leydig cell tumours. Unlike these neoplasms fibromas rarely exhibit steroid hormone production.

ten high power fields. The cells were strongly positive for vimentin (a marker of fibroblasts) and showed focal positivity for actin (a marker of smooth muscle cells). These findings are consistent with myofibroblast cells that can be seen in fibromatous lesions in children. No lipid cells were seen. The overall picture is consistent with fibroma of ovary (Fig. 5).