



Case 4315

Ovarian Thecoma

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Section: Genital (Female) Imaging

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Patient: 72 year(s), female

Clinical Summary

72 years old female patient complaining of hypogastric pain irradiating to the lower back region and recent constipation. Palpation of the right lower quadrant was painful but no mass was identified.

Clinical History and Imaging Procedures

The patient was referred to our institution's Gynecology Department with complaints of hypogastric pain irradiating to the lower back region and recent constipation. Her medical history showed allergy to penicillin. On physical examination palpation of the right lower quadrant was painful but no mass was identified. She underwent a colonoscopy that was unremarkable. Pelvic and transvaginal ultrasonography (US) were requested and demonstrated a solid left ovarian ovoid mass, measuring 40x30mm (Fig.1). Previous US obtained seven months before was normal. A small volume of free fluid was found in the pouch of Douglas. No enlarged lymph nodes were found in the pelvic cavity. An MR study was done, confirming the US findings, demonstrating a solid mass in the left ovary (40mm maximal diameter) with heterogeneous low-signal intensity on T1 and T2-weighted images and a discrete pattern of enhancement (less than myometrium), slightly heterogeneous (purposed diagnosis: ovarian fibroma) (Figs.2-4). Hysterectomy with bilateral salpingo-oophorectomy was performed. On macroscopy, the tumor was solid, well-circumscribed, pedunculated and measured 4x3x2 cm (Fig.5). Section of the tumor disclosed a yellow and firm mass (Fig.6). Ascitic fluid analysis was negative for neoplastic cells.

Discussion

Thecoma is a stromal tumor composed of lipid-containing cells that resemble theca internal cells, with

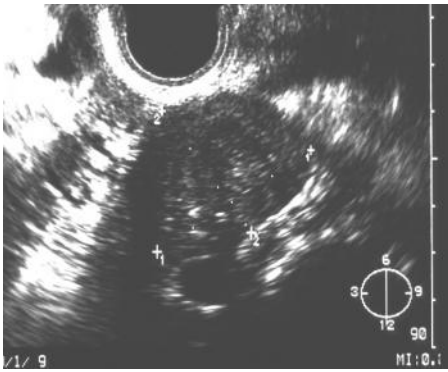
less than 10 percent granulosa cells. There are two types: typical thecoma and luteinized thecoma. The later has the basic appearance of a fibroma or a typical thecoma but also contains lutein cells¹. Fibromas, thecomas, and fibrothecomas are ovarian tumors of gonadal stromal origin and may be variants of a single entity². Typical thecomas are usually estrogenic (presenting with metromenorrhagia and abnormal vaginal bleeding), occur in postmenopausal patients (mean age of 60 years), are rare prior puberty and uncommon before the age of 30 years. Thecomas are unilateral in 97% of the cases. They range in size from small, impalpable tumors to large solid masses; most are 5 to 10 cm in diameter. Sectioning typically discloses a solid yellow mass; cystic change and areas of haemorrhage and necrosis occur occasionally. Calcification may be present. Rarely, thecomas have been associated with other uterine tumors such as mullerian mixed tumors and endometrial stromal sarcomas, suggesting a possible role of estrogen production in the genesis of those tumors^{1,7}. Microscopically, they are composed of fibrous tissue and theca cells with abundant lipid cytoplasm. These theca cells are responsible for the estrogenic effects of these tumors². Generally asymptomatic, these masses are typically detected at palpation during routine gynecologic examination². Nevertheless, in one series, 60% of the patients presented with uterine bleeding¹. In our case the patient presented with low back pain and recent constipation, which were not related to the lesion found. Ovarian thecomas are important from an imaging standpoint because they appear as solid masses, thereby mimicking malignant neoplasms². Occasionally they are associated with ascites and hydrothorax (Meigs' syndrome), which is also a more common feature of malignancy³. Some cases have been described of ovary thecoma with elevated values of CA125 and CEA in association with Meigs' syndrome or ascites which cautions us not to rely on tumor markers to differentiate benign from malignant masses^{4,5}. At US thecomas most commonly manifest as solid, hypoechoic masses with sound attenuation, however the US appearance is variable². CT shows diffuse, slightly attenuating masses with poor, very slow enhancement with administration of contrast material². Calcified foci may be present. At MRI thecomas typically show distinct low-signal intensity on T2-weighted images, which reflects abundant collagen. Their signal intensity may change in the presence of edema and cyst formation³. The prominent lipid component could theoretically be depicted at chemical-shift MR imaging². Differential diagnosis has to be made with several benign as well malignant entities such as: fibromas, solid Brenner tumor (usually made on histological examination), pedunculated uterine leiomyomas, broad ligament leiomyomas (absence of a normal ipsilateral ovary and the presence of small follicles surrounding the mass helps identifying the ovarian origin of thecomas), ovary primary malignancy (morphologic index score³ 5, abundant ascites, CA125 levels), Krukenberg tumors (bilaterality and prominent enhancement favor diagnosis of Krukenberg tumor) ^{2,3,6}.

Final Diagnosis

Ovary Thecoma

Figures

Figure 1 Ultrasonography



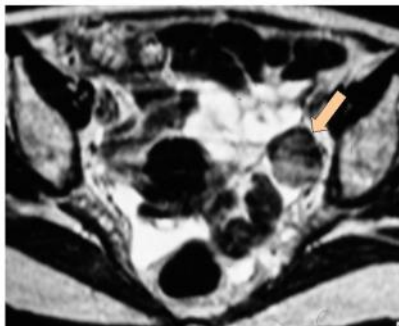
Solid left ovarian ovoid mass, measuring 40x30mm.

Figure 2 Axial T1-weighted MR



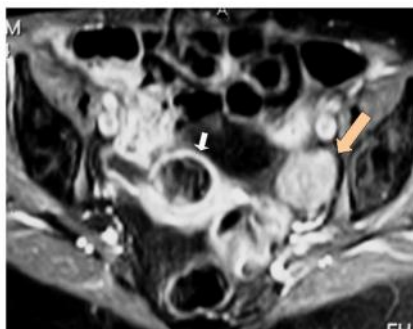
Axial T1-weighted image demonstrates low-signal intensity enlargement of the left ovary (arrow).

Figure 3 Axial T2-weighted MR



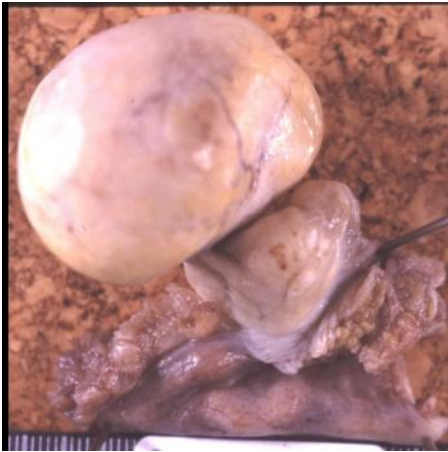
T2-weighted MR image shows a heterogeneous low signal intensity lesion of the left ovary (arrow). A small amount of ascites is detected in the pouch of Douglas.

Figure 4 Fat suppressed T1-weighted MR image after Gadolinium administration



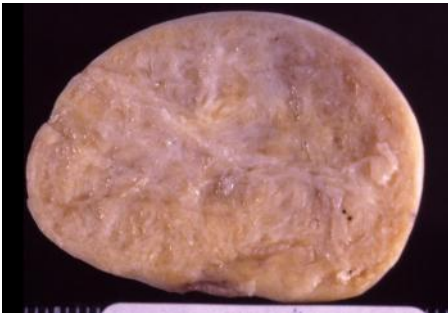
Fat suppressed T1-weighted image after Gadolinium administration demonstrates heterogeneous enhancement (less than myometrium) of the lesion (arrow). Notice subserosal calcified leiomyoma in the uterine corpus (white arrow).

Figure 5 Gross specimen of the left adnexa.



Gross specimen of the left adnexa. The tumor was solid, well circumscribed, with 4x3x2 cm and pedunculated.

Figure 6 Sectioned surface of the tumor



Sectioned surface of the tumor disclosed a lobulated yellow and firm mass.

MeSH

Thecoma [C13.371.270.750.750]

A sex cord-stromal tumor of the postmenopausal ovary that is yellow, large, and unilateral, composed of fascicles of lipid-rich spindle cells interspersed with collagen, reticulin fibers, and hyaline plaques. Thecomas and other estrogen-producing tumors (e.g., granulosa cell tumors) may induce adenomatous hyperplasia of the endometrium or well-differentiated endometrial carcinoma in 3%-20% of the cases. (Segen, Dictionary of Modern Medicine, 1992)

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Citation

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