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RESEARCH ARTICLE

RARE OVARIAN TUMORS: RADIOLOGICAL-ANATOMICAL DISCORDANCE AND ITS IMPACT ON MANAGEMENT QUALITY - A CASE REPORT

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Abstract

Ovarian tumors are classified into three major histological groups: epithelial tumors, germ cell tumors, and sex cord-stromal tumors. Sex cord-stromal tumors are rare and exhibit a wide spectrum of clinical presentations, often leading to diagnostic challenges. We report the case of a 23-year-old patient with no prior medical history, diagnosed with a sclerosing stromal tumor, a subtype of sex cord-stromal tumors, which exhibited a discordant correlation between radiological and histopathological findings. The complexity of diagnosing primary ovarian tumors based on imaging alone underscores the importance of histopathological confirmation. The patient initially underwent a cystectomy based on radiological findings suggesting a borderline or germ cell tumor. However, histological analysis confirmed a benign sex cord-stromal tumor, necessitating a completion adnexectomy. Management is primarily surgical, with a generally favorable prognosis.

Introduction:-

Ovarian tumors are diverse neoplasms classified into three primary histological groups: epithelial tumors (60%), germ cell tumors (30%), and sex cord-stromal tumors (8%) [1,2]. Among them, sex cord-stromal tumors are rare, often exhibiting hormonal activity and diverse clinical manifestations, making their diagnosis complex [3].

Sclerosing stromal tumors, a benign subtype of sex cord-stromal tumors, predominantly affect young women and are characterized by specific histological features, including vascularized collagenous stroma and cellular heterogeneity. Despite their benign nature, these tumors can be mistaken for malignant ovarian neoplasms on imaging, leading to unnecessary radical surgeries.

Here, we report the case of a young patient diagnosed with a sclerosing stromal tumor, where initial radiological findings suggested a more aggressive tumor, highlighting the diagnostic challenges and the crucial role of histopathology in guiding appropriate management.

Case Report

A 23-year-old, single woman with no prior medical history presented with pelvic pain persisting for three months. Clinical examination was unremarkable, with no signs of hormonal disturbances or palpable abdominal masses.

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Pelvic ultrasound revealed an anteflexed uterus measuring 8.12 × 3.85 cm and a left lateral uterine mass measuring 9.49 × 6.53 cm, predominantly cystic, with a papillary projection but no Doppler uptake. The right ovary appeared normal, and no intraperitoneal effusion was detected.

An abdominopelvic CT scan showed a left ovarian cystic mass with septations and wall calcifications. The mass had an irregular, thickened, contrast-enhancing wall, measuring 10 × 8 cm. It appeared adherent to the ipsilateral fallopian tube, superior uterus, and bladder dome, but no signs of direct invasion were observed. Based on these imaging findings, the differential diagnoses included a mucinous borderline ovarian tumor or a germ cell tumor. Given the suspicion of a potentially malignant tumor, surgical exploration was performed.

During laparotomy, a left ovarian cyst was identified with no anarchic vascularization. A small amount of ascitic fluid was collected for cytological analysis, and a cystectomy with multiple biopsies was performed.

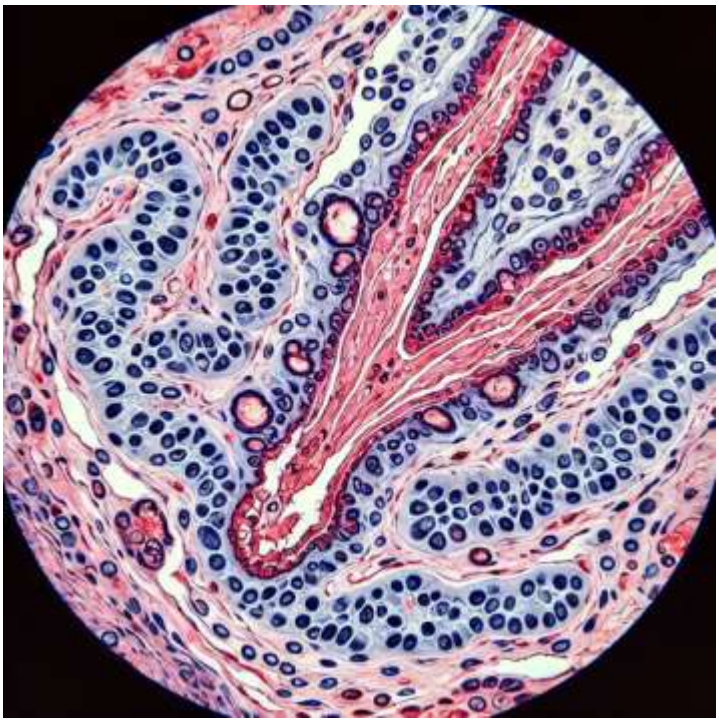
Histopathological analysis confirmed a sclerosing stromal tumor, a benign subtype of sex cord-stromal tumors, with peritoneal fluid negative for malignant cells. Due to the confirmed benign nature of the lesion, the patient underwent a completion adnexectomy, which revealed luteal and follicular cysts with no residual tumor. The omentectomy specimen consisted of normal adipose tissue, further confirming the absence of malignancy.

The patient had an uneventful postoperative recovery with no complications. Follow-up imaging and clinical evaluations confirmed no recurrence, with good overall clinical evolution.

Discussion:-

Ovarian tumors are classified into three main histological categories: epithelial tumors (60%), germ cell tumors (30%), and sex cord-stromal tumors (8%) [4,5]. Among them, sex cord-stromal tumors include fibromas, thecomas, granulosa cell tumors, and Sertoli-Leydig cell tumors. Sclerosing stromal tumors (SSTs) are a rare benign variant, accounting for less than 1% of all ovarian neoplasms [6].

SSTs predominantly affect young women, typically between the ages of 20 and 40, and may present with irregular menstrual cycles, pelvic pain, or abdominal distension [6,7]. While many patients report menstrual irregularities, our patient, despite falling within this age range, did not exhibit any hormonal disturbances. SSTs may also be associated with yolk sac tumors [8] and have been reported in Peutz-Jeghers syndrome [9].



The diagnosis of ovarian tumors based on imaging alone can be challenging. In our case, initial radiological findings suggested a borderline ovarian tumor or a germ cell tumor, leading to a more extensive surgical approach. Borderline ovarian tumors are typically diagnosed in younger patients (30–40 years) and are characterized by epithelial proliferation without stromal invasion [4]. Mature cystic teratomas, the most common germ cell tumors, can also present as mixed ovarian masses with calcifications, adding to the complexity of differential diagnosis [10,11]. Sex cord-stromal tumors often have solid components, which appear hypointense on T1-weighted MRI and markedly hypointense on T2-weighted MRI due to their fibrous stroma [4].

Histopathological confirmation remains the gold standard for accurate diagnosis. In our case, initial imaging findings were misleading, reinforcing the necessity of tissue analysis to guide appropriate management. Treatment of sex cord-stromal tumors is primarily surgical, with simple adnexectomy being the preferred approach due to the typically unilateral nature of these tumors [13]. microscopic histology aspect of a sclerosing stromal tumor (SST) of the ovary.

Peritoneal staging should always be performed in cases of suspected ovarian neoplasms. This includes a thorough exploration of the abdominopelvic cavity, biopsy of any suspicious areas, systematic peritoneal biopsies, and, if necessary, omentectomy. In our case, the patient underwent multiple biopsies, peritoneal fluid cytology, and an omentectomy, all of which were negative for malignancy. The favorable prognosis of SSTs was confirmed by the patient's uneventful postoperative course and absence of recurrence.

Conclusion:-

Sex cord-stromal tumors, particularly sclerosing stromal tumors, are rare ovarian neoplasms that can mimic borderline or malignant tumors on imaging. Histopathological analysis remains crucial for establishing an accurate diagnosis and avoiding overtreatment.

Management is primarily surgical, with conservative approaches favored in young women to preserve fertility. Given their benign nature, the prognosis of SSTs is excellent, with low recurrence rates. This case highlights the importance of correlating radiological and histopathological findings to prevent unnecessary radical surgeries and ensure optimal patient outcomes.

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