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Case Report

Operate Before Further Growth: A Case of Mucinous Cyst Adenoma in a Pediatric Patient

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Introduction

Ovarian tumors in children are relatively rare, with an incidence of 2.6 per 100,000 women per year. Most ovarian tumors seen in children are benign, and are more common in the 10-15 age group. Mucinous cystadenoma occurs in approximately 1 in 7 patients with ovarian tumors in Europe and the United States. The highest incidence of mucinous cystadenoma is seen between the ages of 30 and 50 and is rarely seen in children and adolescents.

Case Presentation

A 13 cm ovarian cystic lesion was detected on abdominal CT scan of a 17-year-old female patient who presented to the Emergency Department with complaints of abdominal pain and nausea. Abdominal examination revealed a palpable mass and tenderness in the left lower quadrant. Pelvic Doppler USG was used to investigate the presence of ovarian torsion; since there was no ovarian torsion, the patient's preoperative routines and tumor markers were reviewed. CEA, CA-125, and AFP levels were within normal limits. Pelvic MRI was performed to better understand the cyst wall thickness and cyst content. Since there was no significant difference, laparoscopic cystectomy was performed for ovarian-preserving surgery. After fenestration, the cyst content was aspirated. After cystectomy, the cystic lesion was removed from the abdomen using an endobag. The opened ovarian capsule was repaired and the procedure was completed by placing a drain. The patient was discharged after a 4-day follow-up. Pelvic USG examination was used in the follow-up. The pathology report was mucinous cystadenoma lined with mucin-producing epithelial cells. After a one-year follow-up, it was observed that the left ovarian tissue had returned to its normal parenchymal structure (Figure 1).

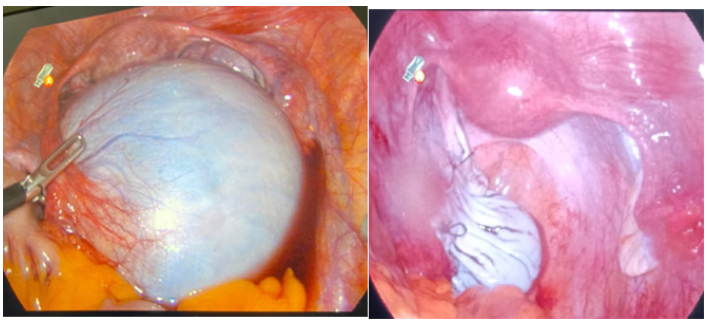

Figure 1: Image of laparoscopic ovarian cystectomy operation

Discussion

Mucinous cystadenomas (MCAs) are benign epithelial ovarian neoplasms representing approximately 15–20% of all ovarian tumors and are characterized by multiloculated cystic masses containing mucinous material. Although they are typically diagnosed in women of reproductive age, their occurrence in adolescents, as in the present case, remains uncommon and can mimic malignant ovarian masses on imaging. The rarity of such presentations in younger patients highlights the importance of maintaining a broad differential diagnosis and employing imaging modalities to guide management decisions (Figure 2) [1,2].

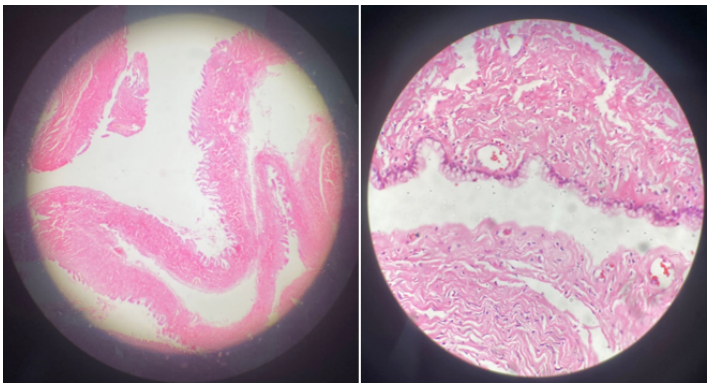

Figure 2: Mucinous cystadenoma pathology images

The pathogenesis of MCAs is thought to involve proliferation of the ovarian surface epithelium or mucinous metaplasia of germinal epithelium, leading to cystic glandular formation. Histologically, benign mucinous cystadenomas display smooth walls lined by tall, mucin-secreting columnar epithelium without stromal invasion [3,4]. These characteristics were consistent with the current case, in which histopathology confirmed a benign lesion without borderline or malignant features. Similar findings have been reported in previous studies describing giant mucinous cystadenomas in adolescents [5].

Imaging modalities such as ultrasound and MRI are crucial for the preoperative assessment of ovarian cystic masses. MCAs typically appear as multiloculated cysts with variable echogenicity depending on mucin content. In this patient, the absence of solid or papillary components supported a benign diagnosis. Nevertheless, differentiating MCAs from other cystic ovarian lesions, such as serous cystadenomas or cystic teratomas, remains a diagnostic challenge, emphasizing the need for histopathological confirmation following surgical excision (Figure 3) [6].

Figure 3: Radiological images of the case (MRI and CT)

Surgical management of benign ovarian tumors in adolescents aims to ensure complete removal while preserving fertility. In the present case, cystectomy was successfully performed, which aligns with the literature advocating conservative surgical approaches when malignancy is not suspected. Reported recurrence rates are low when excision is complete, and postoperative follow-up is essential for early detection of rare recurrences [7,8]. Therefore, individualized treatment strategies focusing on ovarian preservation and careful long-term surveillance remain central to the management of large benign ovarian cysts in young patients.

Conclusion

Although mucinous cystadenoma is a pathology that can be detected in much larger sizes at older ages, it can cause giant cystic lesions in the ovary (40 cm) even in premenarche and tumor markers may not always be within normal limits. However, normal tumor marker levels and images resembling simple ovarian cysts such as follicles or corpus luteum on radiological imaging may mislead the clinician in detecting smaller cysts. This situation emphasizes the importance of monitoring ovarian cysts, which can be fatal when they reach larger sizes.

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