

Gastrointestinal Tumors Mimicking Adnexal Masses: A Report of Three Cases and Review of the Literature

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It is important to determine the origin and malignancy risk of pelvic pathologies preoperatively and thus decide the route and extent of the surgery. In this case report, we present three cases operated for presumed adnexal masses those were intraoperatively diagnosed to be nongynecological benign masses originating from adjacent organs with a brief review of the literature.

Three cases underwent surgery with a pre-operative diagnosis of adnexal mass but intraoperatively diagnosed to be mucinous cystadenoma of appendix, mesenteric cyst and gastrointestinal stromal tumor.

Non-gynecological masses should be considered in the differential diagnosis of adnexal masses and centers operating on a considerable number of adnexal masses should be capable of managing rare nongenital masses that can be accidentally encountered during the operation.

Key Words: Adnexal mass, Gastrointestinal stromal tumor, Mucocele of appendix, Mesenteric cyst

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Introduction

Ovarian pathologies; especially ovarian cysts are the most common causes of pelvic masses in women. After preoperative evaluation of the risk of malignancy by using ultrasonographic imaging techniques and measuring serum levels of tumor markers, laparoscopic approach has become the gold standard for treatment of ovarian cysts and benign adnexal masses for the last two decades.^{1,2} In some cases, lesions arising from the neighboring organs or tissues such as paraovarian cysts, occlusive diseases of the fallopian tubes such as hydrosalpinx, hematosalpinx or pyosalpinx, pedunculated myomas, retroperitoneal cysts, lymphocysts, obstructed rudimentary uterine horns, peritoneal inclusion cysts, lymphocele may well mimic ovarian lesions.^{3,4} However these lesions can easily be surgically managed by the gynecologist.

A careful tedious evaluation of the patient, using imaging techniques for identifying the masses and their origins is essential prior to surgery. Ultrasonographic evaluation is useful for determining the size, location and features of the adnexal tumor and its relationship with normal ovaries. However cystic masses of the pelvic cavity may have similar appearances

and thus ultrasonography might not be successful to differentiate between genital and extra genital pelvic masses in some cases.⁵ Other imaging techniques, especially magnetic resonance imaging (MRI) is recommended for identifying the origin and features of the complex masses or solid masses when sonographical diagnosis is inadequate.⁶ Still some of the extra genital pelvic masses can be misdiagnosed as ovarian and/or genital masses preoperatively.

In this case report, we present three cases with review of the literature; that were operated for presumed adnexal mass in our institution but intraoperatively the masses were diagnosed to be non-gynecological benign masses originating from adjacent non-gynecological organs.

Case 1

A 69 years old menopausal woman applied to our hospital with pelvic pain. The patient had no gastrointestinal symptoms. During pelvic examination a cystic mass with a diameter of 5cm located at the right adnexal region was palpated. During transvaginal ultrasonography (TV-USG) a bilobulated cystic mass on the right-side with a dimension of 57x47 mm was noticed. Heterogeneous material was observed in one lobe of the cystic mass. No pathological vessels were detected during color-doppler ultrasonography and Doppler indices were within normal limits. Computerized tomography (CT) examination; reported a cystic mass at the right ovarian region containing dense material with a dimension of 55x43 mm. Tumor markers were within normal range, serum estradiol was at postmenopausal levels. During operative laparoscopy;

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bilobulated solid mass with a diameter of 6 cm was seen above appendix, adjacent to the right ovary and the uterus, tubes and ovaries were found to be normal. The mass and the appendix were resected laparoscopically without any spillage and removed from the abdominal cavity within an endobag.

In frozen sections; the tumor was diagnosed to be mucocele of appendix. Histopathological examination of the specimen was reported as mucinous cystadenoma of the appendix with benign peritoneal cytology. Postoperative recovery and one-year follow-up of the patient was uneventful.

Case 2

On pelvic examination of a 45 year old woman who applied to our hospital for amenorrhea, a mobile cystic mass with a diameter of 9 cm located at the left adnexal region was palpated. Transvaginal ultrasonography revealed an anechoic cystic lesion with a diameter of 9 cm. The cystic mass was originating from lateral side of the left ovary and extended up to the lower pole of the kidney. During Color Doppler ultrasonographic evaluation no pathological vessel was detected and PI and RI were within normal limits. Tumor markers were normal and hormone profile was at perimenopausal level. CT examination; reported a cystic mass at the left adnexal region with a dimension of 12x10x9 cm. The mass was thought to be originating from the ovary based on the location, density and structural properties of the mass described by the CT evaluation. During operative laparoscopy; a cystic mass with a diameter of 12 cm was seen under the mesentery of sigmoid colon at the left pelvic and paracolic region. The mesenteric cyst ruptured during the operation, and its content was clear. The cyst was excised. Histopathological examination of the specimen was reported as partially inflamed tissues with hyalinized fibrotic tissue wall without epithelization.

Case 3

A 61 years old menopausal woman applied our hospital with postmenopausal vaginal bleeding. During pelvic examination a semisolid mobile mass with a diameter of 5 cm located at the right adnexal region was palpated. Transvaginal ultrasonography showed a cystic mass with a dimension of 51x39 mm at the right adnexal region. The cyst was reported to have a thick wall and was containing echogenic material. A uterine polyp of 34x31 mm located at the fundal part of the uterine cavity was also reported. Tumor markers were normal, serum estradiol was at postmenopausal levels. During operative laparoscopy; a semisolid mass with a diameter of 3 cm originating from the ileum and protruding towards right paracolic region was observed. The tumor was freed from the ileal wall after obtaining the peritoneal washings. A biopsy from the tumor was sent to frozen section. The result of frozen sections was reported as benign stromal tumor. For complete excision

of the tumor, laparotomy was performed. The mass was resected with the affected intestinal segment and end-to-end anastomosis was carried out. The endometrial polyp was resected by loop electrode with operative hysteroscopy. Histopathological examination of the specimen was reported as gastrointestinal stromal tumor with benign peritoneal cytology.

Discussion

Adnexal masses represent a spectrum of conditions from gynecologic and nongynecologic sources. Gastrointestinal tumors (mucoceles of the appendix, mesenteric cysts, gastrointestinal stromal tumors etc.) are the most common non-gynaecological masses in adnexal area.

Mucocele of the appendix arise from an obstruction of the lumen by benign epithelial hyperplasia or malignant tumors leading to dilatation of the appendix lumen resulting in abnormal mucinous accumulation.⁷ Mucocele is reported to found in 0.2-0.3% of all appendectomy specimens while with an incidence of 0.6% mucinous cystadenoma of the appendix accounts for the most common cause of mucocele of the appendix.^{7,8,9} Although it may be asymptomatic, some cases may present themselves with abdominal pain, abdominal mass, or signs of ureteral obstruction. Various imaging techniques such as ultrasonography or CT might be helpful but preoperatively most of them are diagnosed as acute appendicitis or adnexal masses.¹⁰ There are case reports of patients with appendiceal mucocele who were misdiagnosed preoperatively as having adnexal tumors^{11,12,13} The tumor should be resected and removed completely without rupture or spillage in order to prevent pseudomyxoma peritonei. Although there is controversy about the extent of the surgery (excision and appendectomy versus appendectomy with right hemicolectomy) and the route of surgery (laparotomy versus laparoscopy) there are authors who that advocate the safety of laparoscopic resection of the mucocele.¹⁴

Mesenteric cysts, with an incidence of 1/27.000 to 1/250.000 are rare intra-abdominal tumors.^{15,16} Majority of them are of lymphatic origin. They can arise from various sites within the abdominal cavity however the most common localization is the small bowel followed by mesocolon and retro peritoneum in most of the presented series.^{15,17} As a result of the diverse sites of origin, there is a wide range of symptoms that are nonspecific. They are usually asymptomatic and 40% of them are determined accidentally.^{18,19} Abdominal pain, abdominal mass, acute intestinal obstruction is the predominant symptoms in symptomatic patients. The highest incidence is in the fourth decade with a female preponderance.²⁰ Ultrasonography and CT are the most commonly used imaging techniques for differential diagnosis. Surgical treatment and excision is the treatment of choice. Most of the mesenteric cysts are benign. With complete excision, the recurrence rate is

low and overall prognosis is good in benign cases. Laparoscopic approach is preferred in most of the cases.^{20,21} Gynecological endoscopists reported encountering these cysts in cases those were misdiagnosed as ovarian pathologies.²²

Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal tumors in the gastrointestinal (GI) tract that can originate from different organs. GISTs occur throughout the GI tract and are most commonly seen in the stomach (60%), jejunum and ileum (30%), duodenum (5%), colorectum (4%), and rarely in esophagus and appendix.²³⁻²⁶ Malignancy potential of the tumor is related to the size of the tumor and the number of mitoses.²⁷ The tumor can present itself as a pelvic mass and might be misdiagnosed as a gynecological pathology such as leiomyoma of the uterus or ovarian fibroma.²⁸ The preoperative diagnosis of GISTs is not always possible due to the large variety of the presenting symptoms. The ante-uterine localization, "sliding organ sign"; palpating a mass separate from the uterus and the adnexa are described as suggestive signs of these tumors but these are not unique to GISTs.²⁹ The ultrasonographic appearance is not also typical and the tumor may contain both hyperechoic, hypoechoic and anechoic areas within itself due to the changes in the tissue such as myxoid degeneration and necrosis.^{30,31} There are reports of GIST cases those were misdiagnosed as adnexal masses preoperatively in the literature.³²⁻³⁶

Preoperative diagnosis of the origin of the pelvic masses is important for planning appropriate surgical approach with the appropriate surgical team but this is not always feasible in some cases. Some rare gastrointestinal tumors, such as mesenteric cyst, mucocele of the appendix or GIST can be either asymptomatic or they may present themselves with atypical symptoms. Gynecological examination or laboratory tests are not very helpful in differential diagnosis. Although it is possible to approach the possible diagnosis with the use of imaging modalities such as ultrasonography, CT or MRI there will still be cases that are only diagnosed intraoperatively. The gynecological endoscopists operating on pelvic masses frequently should be aware of the possibility of encountering gastrointestinal tumors mimicking gynecological pathologies during laparoscopies and either they should be trained in appropriate surgical treatment of these rare pathologies or will have the facility for intraoperative consultation with the related specialists.

Adneksiyal Kitleleri Taklit Eden Gastrointestinal Stromal Tümörler: 3 Olgu Sunumu ve Literatürün Gözden Geçirilmesi

Preoperatif dönemde pelvik patolojilerin nereden kaynaklandığını tespit etmek ve malignite risklerini değerlendirmek; doğru cerrahi yöntem ve sınırları belirlemek açısından oldukça önem-

lidir. Preoperatif olarak adneksiyal kitle olduğu tahmin edilen, intraoperatif olarak ise komşu organlardan kaynaklandığı görülen jinekolojik olmayan benign kitleleri literatür derlemesi ile sunuyoruz.

Adneksiyal kitle tanısıyla cerrahiye alınan 3 olguya; intraoperatif olarak apendiksin müsinöz kistadenomu, mezenterik kist ve gastrointestinal stromal tümör tanısı konuldu.

Adneksiyal kitle cerrahisinde jinekolojik organlara komşu yapılardan kaynaklanan kitleler ayırıcı tanıda düşünülmeli ve adneksiyal kitle nedeniyle fazla sayıda operasyon yapan merkezler; operasyon sırasında tesadüfen karşılaşılabilen jinekolojik olmayan kitlelerin tedavisi ile ilgili yeterli deneyime sahip olmalıdır.

Anahtar Kelimeler: Adneksiyal kitle, Gastrointestinal stromal tümör, Apendiks mukoseli, Mezenterik kist

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