

Ruptured Hemorrhagic Cyst of Undescended Ovary Mimicking Mucocele: A Rare Pediatric Case

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What's Known

- Undescended ovary is a rare entity. It is associated with urinary and uterine anomalies.
- Most patients in whom treatment is unnecessary are asymptomatic and diagnosed during infertility evaluation and treatment such as ovarian hyperstimulation studies.

What's New

- The present study reports on an undescended ovary that had acute abdomen symptoms imitating mucosal.
- In girls referring to a hospital with abdominal pain, although quite rare, undescended ovaries are also to be considered.
- In symptomatic cases, relevant organs are to be investigated carefully during surgical intervention.

Abstract

Undescended ovary is a rare entity and usually presented as a case report. It is associated with urinary and uterine anomalies. Symptomatic patients are diagnosed during surgery. Most of the patients are asymptomatic and treatment is unnecessary. They are incidentally diagnosed during infertility evaluation and treatment such as ovarian hyperstimulation studies. A 15-year-old female patient presented with the diagnosis of renal cystic mass identified during ultrasonography in another hospital. Abdominal computed tomography image was requested. A cystic lesion of about 48×34 mm with well-defined borders associated with the appendix and probably with mucocele of the appendix was reported in the lower right abdominal quadrant close to the cecum. During exploration, the right ovary was seen to be attached to the cecum and was higher in position as well as a right ovary originated cystic structure of 5×5 cm. Using needle aspiration, intraovarian hemorrhage was confirmed and partial cystectomy was performed. The present study reports on an undescended ovary that had acute abdomen symptoms imitating mucocele. In girls referring to the hospital with abdominal pain, although quite rare, undescended ovaries are to be also considered. As the incidence of renal and uterine anomalies is higher in such patients, in symptomatic cases relevant organs are to be investigated carefully during surgical intervention.

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Keywords • Abdominal pain • Mucocele • Endometriosis
• Ovarian neoplasms

Introduction

Undescended ovaries and tubes are rare congenital disorders. While they develop and descend like testicles, ovaries differ as they descend from the posterior abdominal wall and end in the pelvic cavity. There are fewer abnormalities in the ovaries and tubular descent.¹

In the differential diagnosis of cases with acute abdomen symptoms in adolescents, the underlying causes such as acute appendicitis, ruptured corpus luteum cyst, torsion of an ovarian cyst, and ectopic pregnancy are to be considered by surgeons. Although quite rare and clinically not considered in the initial diagnosis, herein we report a case of undescended ovary mimicking mucocele of the appendix that was presented to our clinic as acute abdomen.

Case Presentation

A 15-year-old female patient was referred to our clinic with continuous abdominal pain for the last four days. Initial diagnosis of renal cystic mass was made in another hospital based on ultrasonography(USG). Physical examination revealed tenderness in the right lower quadrant. The last menstrual period of the patient was 2 weeks prior to admission.

Patient's hemogram and hormonal profiles did not reveal any pathology. Abdominal computed tomography (CT) image was requested. A cystic lesion of about 48×34 mm with well-defined borders associated with the appendix and probably with mucocele of the appendix was reported in the lower right abdominal quadrant close to the cecum based on the tomography image (figure 1). Opting for surgical intervention and upon obtaining informed consent for surgery, the patient was admitted to our pediatric surgery clinic in 2015. Using an infraumbilical right transverse incision, abdominal access was realized. During surgical exploration, the right ovary was seen to be attached to the cecum and was higher in position as well as a right ovary originated cystic structure of 5×5 cm. Using needle aspiration, intraovarian hemorrhage was confirmed and partial cystectomy was performed. Current clinical condition was decided to be the result of hemorrhagic cyst rupture. The uterus and the other ovary were considered as normal. Similarly, her appendix was normal and did not reveal any pathology. The patient was discharged without any postoperative problems the next day. Three weeks later, during the USGcontrols, the right ovary was considered as normal and no pathologies could be determined.

Discussion

During intrauterine growth period of the fetus, the ovarian tissue descends from the medial of

the urogenital folds down to the pelvic cavity. If there are any interruptions during this descent, the ovary is seen above the normal ovarian location and is hence called undescended ovary. In utero 5th month, the ovaries are in the iliac fossa and at that term at the pelvic ridge. During the postpartum period, they are supposed to have moved to their normal location.^{2,3}

The term "ectopic ovary" is often used for abnormal localized excess ovarian tissue in addition to the normal ovary.⁴ Undescended ovary and ectopic ovary are among the extremely rare cases without a clear incidence. Undescended ovary can be unilateral or bilateral, even in patients with normal uterus. However, its incidence is significantly higher in the presence of uterine anomalies.⁵

Anomalies such as Mullerian agenesis or unicornuate uterus are commonly seen in undescended ovary cases. Anomalies such as renal agenesis are also witnessed in patients. In patients with congenital uterine, anomalies ovarian malposition (ovarian maldescent) are more common.^{6,7} To the best of our knowledge, there is no established definitive association between undescended ovary and infertility or malignancy. Undescended ovary is generally associated with urinary and uterine anomalies. Most of the patients for whom treatment is considered unnecessary are asymptomatic and diagnosed during infertility evaluation and treatment. Including the present report, as far as we know, there have been only 30cases of asymptomatic or symptomatic undescended ovary reports. Among these, 18 (60%) cases were asymptomatic and 12 (40%) were symptomatic (table 1).^{4,8-14} All symptomatic cases were similar to the present case and diagnosed during surgical intervention. Asymptomatic cases were diagnosed after infertility and ovarian hyper stimulation studies.⁸ Moreover, unilateral undescended ovaries are reported to be more common on the right side and more likely to be located in the retro peritoneum.¹⁵ Mullerian and renal anomalies were more common in symptomatic undescended ovary cases.

Undescended ovary can become symptomatic and lead to acute surgical abdomen. The most common symptoms are abdominal pain secondary to a ruptured ovarian cyst or ovarian torsion.¹⁵ In our patient, due to the high preoperative localization of the ovary in the abdominal CT-scan, mucocele was considered during the primary examination. In the diagnosis of similar cases, magnetic resonance imaging(MRI) is preferred by many clinicians due to its high sensitivity and as a noninvasive method for renal and genital tract

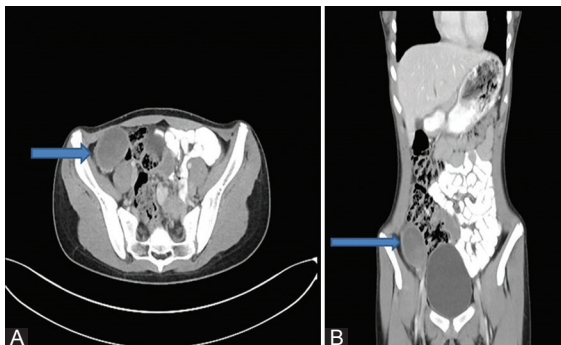


Figure 1: CT-scan of the lower-right abdominal quadrant showing a cystic lesion with well-defined borders close to the cecum.

Table 1: All reported cases of symptomatic undescended ovary

Source	Age, cases (years, number)	Affected side	Method of diagnosis	Preoperative diagnosis	Postoperative diagnosis	Renal anomalies	Mullerian anomalies
Cohen et al. ⁴	18,1	Left	CT, Laparoscopy	Abdominal wall hemangioma	Functional cyst of left ovary	None	None
Suh et al. ⁸	14,1	Right	Laparoscopy, MRI, USG	Pseudocyst	Ruptured hemorrhagic cyst of right ovary	None	Left unicornuate uterus
Adnopoz et al. ⁸	22,1	Left	Laparotomy	Torsion of left ovarian cyst	Torsion of left ovarian cyst	Not listed	None
Brown et al. ⁸	24,1	Left	IVP, Laparotomy, USG	Ectopic pregnancy	Left tubal pregnancy	Left renal agenesis	Right unicornuate uterus
Dabby et al. ⁸	34,1	Right	IVP, Laparotomy	None	Right tubal pregnancy	Right renal agenesis	None
Kives et al. ⁹	13,1	Both	CT, Laparoscopy	Congenital intestinal duplication	Ruptured hemorrhagic cyst of right ovary	None	Bicornuate uterus
Gabriel et al. ¹⁰	29,1	Right	IVP, Laparoscopy, USG	Ectopic pregnancy	Right tubal pregnancy	Right renal agenesis	Left unicornuate uterus
Pokoly ¹¹	26,1	Left	HSG, Laparoscopy	Ectopic pregnancy	Primary amenorrhea	None	Right unicornuate uterus
Kim ¹²	28,1	Left	Laparotomy	Ectopic pregnancy	Left tubal pregnancy	Left renal agenesis	Right unicornuate uterus
Granat et al. ¹³	23,1	Left	HSG, IVP, Laparotomy	Ectopic pregnancy	Left tubal pregnancy	Left renal agenesis	Right unicornuate uterus
Nichols et al. ¹⁴	36,1	Left	Laparotomy	Acute cholecystitis	Hemorrhagic cyst of right ovary	Left renal agenesis	None
Present case	15,1	Right	USG, CT, Laparotomy	Mucocele	Ruptured hemorrhagic cyst of right ovary	None	None

CT: Computed tomography; HSG: Hysterosalpingography; IVP: Intravenous pyelography; MRI: Magnetic resonance imaging; USG: Ultrasonography

anomaly diagnoses.⁵ If undescended ovaries are determined incidentally, there is no need for any kind of radical intervention unless they are symptomatic.⁸

Cystic formations of the undescended ovary, if located on the right, can be confused with acute appendicitis, plastrone appendicitis, paracolic abscess, or mucocele. Although quite rare, in young female patients with severe abdominal pain, the possibility of undescended ovaries should also be considered. In symptomatic cases, during surgical intervention, relevant neighboring tissues are to be investigated carefully.

We have reported a case that had undescended ovary presenting with acute abdomen symptoms mimicking mucocele of the appendix. Although rare, but it should be part of a differential diagnosis in patients with peritoneal irritation symptoms. Surgical exploration must be carefully made in suspected cases.

Conclusion

In women, especially under age cases, painful acute abdominal symptoms in the right lower quadrant might be related to hemorrhagic cystic complications of the undescended ovary. In the absence of surgical intervention and solely based on radiological analysis, it can be confused with the mucocele of the appendix. As these patients are often diagnosed during the operation, a thorough surgical exploration of the uterus for the presence gonadal anomalies is deemed necessary due to inherent infertility risk.

Conflict of Interest: None declared.

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