

Simultaneous dermoid cyst and endometriosis in the same ovary: a case report

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Summary

The authors present a case of a 33-year-old infertile woman with coincidental dermoid cyst and ovarian endometriosis in the same ovary. She was admitted to the Clinic because of cystic tumor of the left adnexa. Transvaginal ultrasound (TVUS) examination found a bilocular tumor of complex structure on the left ovary. Video-laparoscopy was also performed. On the left ovary, two adjacent cystic formations were found. Laparoscopic ovarian cystectomy was performed and a surgical specimen was sent for histopathologic analysis. The diagnosis was a dermoid cyst and ovarian endometriosis. Without complications, the patient was released from the hospital. The patient was treated with an analogue of gonadotropin releasing hormone (GnRH) for three months as a preparation for in vitro fertilization (IVF).

Key words: Dermoid cyst; Endometriosis; Laparoscopy; Infertility; IVF.

Introduction

Ovarian dermoid cysts or mature cystic teratomas are considered to arise from the primordial germ cells of the yolk sac on their way to the primitive gonads [1, 2]. More than 80% of mature cystic teratomas with complete differentiation occur during the reproductive years [3, 4]. Dermoid cysts occur approximately in 43% to 70% of benign ovarian masses, and are present in 15% of all ovarian tumors. In both instances, mature cystic teratomas occur in only 10% of cases [5]. During the reproductive years, dermoid cysts are frequent causes of ovarian torsion. Typical ultrasound examination of the dermoid cysts shows the presence of focal or diffuse hyperechoic echoes. Such hyperechoic echoes are a consequence of the presence of hair, teeth, and body fat [6]. The origin of dermoid cysts in the ovary are explained with several theories such as: abnormal blastomere morphology with low egg viability, vanishing and conjoined twins, and consequent of the parthenogenesis [7]. A collision tumor represents the coexistence of two histologically distinct tumors in the same organ. The coexistence of different tumors in the same ovary is a rare finding. The most common collision tumors in the ovary are composed of teratoma and cystadenoma [8]. Endometriosis is a female health disorder that occurs when the endometrial tissue grows outside the uterine cavity and myometrium in other areas of the body [9]. The endometrial tissue implants are called endometriomas. Women with endometriosis typically have endometriomas on the ovaries and on the peritoneal area of the cul-de-sac. Endometriomas may rarely occur in other organs such as in skin scars in the lungs, and elsewhere. Endometriosis leads to painful menstrual periods and pain during sexual intercourse before and during menstrual bleeding. This process often leads to irregular bleeding and to infertility in these women. Usually, with these symptoms the diagnosis of en-

dometriosis is suspected. Transvaginal ultrasound (TVUS) examination has the ability to make a nearly correct diagnosis. On ultrasound (US), endometriomas are homogeneous and well-delimited structures, with low to moderate density contents, and with hyperechoic capsules [10]. In the presence of an avascular calcified solid or mixed components, endometriomas with differential diagnosis include: dermoid cyst, hemorrhagic follicular cyst, corpus luteum, carcinoma, and other cystic tumors of the ovary [11]. The estimated prevalence of endometriosis is 10% to 20% in reproductive-aged women. In infertile women, the prevalence of endometriosis is 20% to 50%. Endometriosis in the ovary is the most common, followed by broad ligament, peritoneum of the cul-de-sac, and on uterosacral ligaments [12].

Case Report

A 33-year-old patient, nulliparous, was admitted to the clinic because of cystic tumor of the left adnexa. The cyst was detected on pelvic US examination by a gynecologist at the Health Center. The patient complained of occasional pain in the left adnexa. She had very painful periods and her menstrual cycles were regular. She had menarche at the age of 14 years. She did not have regular gynecological check-ups. The last check-up examination was performed three years prior. Laboratory blood tests performed were normal. The values of CA-125 tumor marker were elevated at 48 mIU/ml. The values of Ca was 19.9, and both HE 4 and Roma index were normal. A vaginal gynecological examination revealed a uterus normal in size and with solid consistency. In the area of the left adnexa examined, the cystic formation was insensitive to palpation. The right adnexa was free and insensitive. TVUS revealed in the left adnexal region, the existence of a bilocular complex, 8.5 x 8.0 x 7.0 cm in diameter. One part of the cyst was 5.5 x 5.0 x 5.0 cm in diameter with hypoechogenic and hyperechoic contents. TVUS Doppler detected pericystic blood flow with an average resistance index of 0.59. At the level of the ovarian hilus, an average blood flow resistance index was detected with a value of 0.55. The second part of the cyst was 3.0 x 3.0 x 2.0 cm in diameter with low-level echo-density contents and hyperechoic capsule. Based on history, physical examination, laboratory tests

Revised manuscript accepted for publication June 18, 2012

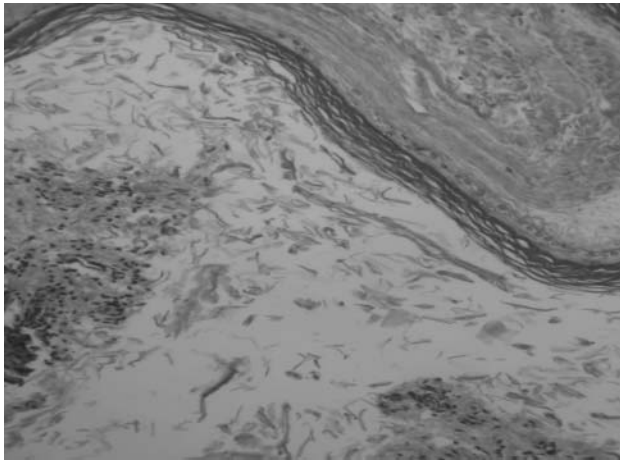


Figure 1. — Mature cystic teratoma of the ovary.

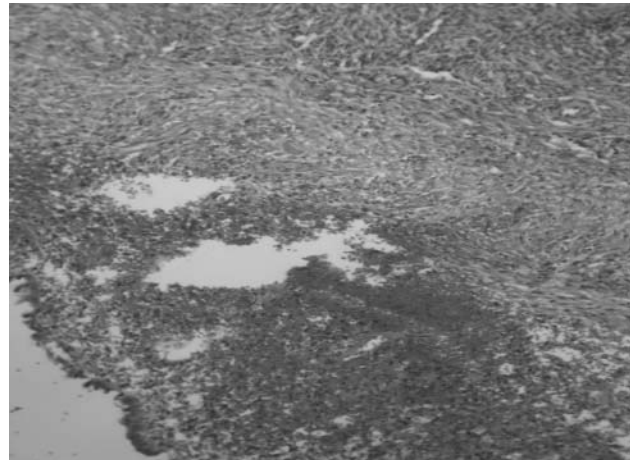


Figure 2. — Endometriosis of the ovary.

and US, it was concluded that the patient most likely had a dermoid cyst of the left ovary. The patient was submitted to video-laparoscopy. Two cystic adjacent formations were found in the left ovary with adhesions of the peritoneum pouch of Douglas. The fluid from the pouch of Douglas was aspirated and peritoneal washings were sent for cytological analysis. LCS scissors i.e. using Ultracision Harmonic Scalpel combined with hydro-dissection performed the ovarian cystectomy and released the left ovary. Both cystic formations of the left ovary were removed intact and as a whole without opening the capsule. The specimen was placed within an Endobag and removed from the pelvis. The ovarian defects were closed with 2-0 polydioxanone sutures using intracorporeal knot tying. The contralateral ovary was the control. Intraoperatively the authors routinely wash out the abdominal cavity with saline solution. Removed cystic formations were sent to the histopathological analysis. Without complications, the patient was released from hospital. The final histopathological finding were: mature cystic teratoma of the ovary and endometriosis of the ovary. These are shown in Figures 1 and 2, respectively. Cytological findings of the fluid from the pouch of Douglas and peritoneal lavage were normal. The patient was treated with gonadotropin releasing hormone (GnRH) analogue, triptorelin 3.75 mg for three months as a preparation for in vitro fertilization (IVF). A month after the last injection, the patient re-established her menstrual cycle which was not painful. Control pelvic findings were also normal.

Discussion

Up to 25% of ovarian tumors originate from germ cells. Dermoid cysts are the most frequently germinoma during the reproductive years and are present in 15% of all ovarian tumors, usually occurring in one ovary, and most of them are mature cystic teratomas [4, 5]. The clinical characteristics of a dermoid cyst is that it is a most frequently isolated adnexal tumor. The US image of cystic teratoma appears as well-circumscribed area with fields of focal or diffuse hyper-echogenicity associated with posterior acoustic shadow with or without a cystic component [1, 13]. The presence of ovarian dermoid may cause complications such as rupture, infection, and malignant degeneration. Secondary malignant alteration of ovarian teratomas is a rare event, but is described to occur with an incidence of 1% to 2%. Squamous-cell carcinoma accounts for 80% of

secondary malignant transformation of ovarian teratomas [14]. Because of possible listed complications, teratomas should be surgically removed. Dermoid early coexists with other types of ovarian tumors [5].

Incidence of endometriosis is from 10% to 20% for the general female population.

The diagnosis of endometriosis is based on visual US inspection presents with circular homogeneous and clearly delimited structures from the parenchyma with hypoechoic "tissue" of low-level echo-density contents without papillary proliferation, with values of tumor markers, especially CA 125 and CA 19-9, and based on visual observations during diagnostic laparoscopy [1, 15]. Diagnostic laparoscopy is the gold standard for evaluating an adnexal mass. Histopathological examination confirmed the diagnosis of endometriosis [1]. The presence of endometrioma in the pelvic cavity is closely associated with local pelvic inflammatory process, resulting in the development of numerous adhesions to the surrounding organs. Incidence of endometriosis is from 20% to 50% in infertile women [1, 12]. The treatment of adnexal endometriosis depends on the desire to give birth, patient's age, US examination findings, and on combination of levels of serum CA-125 with positive clinical findings [16, 17]. Operative laparoscopy, with its advantages of less postoperative adhesion formation, lower postoperative pain, rare complications, and acceptable appearance of scars on the skin, compared with open laparotomy represents an important surgical technique in the treatment of adnexal pathological changes, particularly in the surgical treatment of infertility [18]. Due to the accumulation of calcium in the endometrioma, differential diagnosis with US is required as it can resemble a cystic teratoma [1]. The coexistence of endometriosis and dermoid cysts in the same ovary is a rare occurrence [12]. In published literature, regarding collision endometrioma and teratoma in the ovary, the authors found until now only a few previous reports and all these described this entity in young women who underwent laparoscopy [19, 20]. The patient described in this study was a 33-year-old infertile woman, who was admitted to the Clinic due to bilocular cystic tumor of the left adnexa. This entity is the first such case published

in Serbia. TVUS examination revealed in the left adnexal region the existence of the bilocular complex, 8.5 x 7.5 x 8.0 cm in diameter. Given this US, the desire of the patient to give birth, tumor size, and studies which indicated a significantly higher risk of a neoplasm existing in ovarian cysts greater than five cm, the authors opted to perform video-laparoscopy. Ultracision harmonic scalpel combined with hydro-dissection performed the ovarian cystectomy and released the left ovary. The ovarian defects were closed with 2-0 polydioxanon sutures using intracorporeal knot tying. The contralateral ovary was the control. The removed cystic formations were sent for histopathological analysis. Histopathology examination showed an ovarian benign tumor composed of endometriosis and coexisting mature teratoma tissue. As a number of studies have shown that dermoid cysts can be successfully removed laparoscopically, the authors decided to remove it using US harmonic scalpel technique [13]. Regarding classical laparoscopic cystectomy for dermoid cysts, it was reported that spillage had occurred in 88% [21]. As suggested by several articles, in order to prevent spillage of dermoidal contents avoiding potential risk of chemical peritonitis, or excess adhesion formation, the authors used an Endobag [5, 17, 22]. Chemical granulomatous peritonitis is the major complication after laparoscopic dermoid cystectomy [12, 17]. In order to prevent this intraoperative complication, the authors routinely wash out the abdominal cavity with saline solution to ensure appropriate removal of all particles, and to check hemostasis after surgery. Without complications, the patient was released from hospital. In preparation for IVF the patient was advised to receive a GnRH analogue for the next three months.

Conclusion

A dermoid cyst collision with ovarian endometriosis in the same ovary as a separate entity is rarely seen. All benign collisions of dermoid cyst with ovarian endometriosis can be successfully removed through video -assisted laparoscopy. In order to prevent spillage of dermoidal contents or excess adhesion formation after surgery, the authors suggest using an Endobag and routinely wash out the abdominal cavity.

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