

# COEXISTENCE OF RUPTURED ECTOPIC TUBAL PREGNANCY, DERMOID AND ENDOMETRIOTIC CYST WITH TUBO-OVARIAN ABSCESS IN THE SAME ADNEXA: CASE REPORT

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**SUMMARY** – A 32-year-old pregnant woman presented to the hospital with abdominal pain and minimal vaginal bleeding. Transvaginal ultrasound revealed visible fluid in pelvic region with suspected tubal rupture, and subsequently laparoscopy was performed. During laparoscopy, additional gynecologic pathologies were noticed. Histopathologic finding showed dermoid and endometriotic cyst, as well as tubo-ovarian abscess in the same adnexa. This case report highlights the necessity of considering multiple diagnoses in the same organic system, which may be encountered by surgeon and histopathologist.

**Key words:** *Pregnancy, ectopic; Dermoid cyst; Endometriosis; Adnexal diseases; Abscess; Case reports*

## Introduction

Ectopic pregnancy is a pregnancy outside the uterine cavity, most commonly seen in the fallopian tube, unlike primary ovarian pregnancy, which is a rare type of ectopic pregnancy that is difficult to diagnose clinically and even intraoperatively<sup>1,2</sup>.

Dermoid cysts are the commonest germ cell tumors, which account for 20% of all ovarian tumors, with the majority of cases found in reproductive population. Due to the risk of ovary torsion, cystic rupture, infection, and malignant alteration, dermoid cysts should be surgically removed. The major clinical characteristic of dermoid cyst is a solitary tumor, and it rarely coexists with other types of ovarian masses<sup>3</sup>.

Endometriosis is the commonest gynecologic condition, which affects approximately 10% of women of

reproductive age. It is defined as evidence of endometrial glands and stroma outside the uterine cavity and myometrium. The etiology of endometriosis is not yet completely understood. Endometriosis presents with a wide range of symptoms such as dysmenorrhea, dyspareunia, chronic pelvic pain, pelvic mass and infertility<sup>4</sup>.

Literature search revealed only sporadic cases of dermoid cyst and ectopic pregnancy, coexistence of endometriosis and dermoid cyst, and dermoid cyst superinfection<sup>3,5</sup>. However, there are no publications on the Pubmed/Medline on ruptured ectopic pregnancy together with dermoid and endometriotic cyst, and tubo-ovarian abscess of the same adnexa.

## Case Report

A 32-year-old nulliparous woman presented to the hospital emergency department with symptoms of severe left lower quadrant abdominal pain. The patient reported on her last menstrual period approximately 7 weeks before and positive  $\beta$ -hCG 7 days before, as

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well as on minimal vaginal bleeding that had lasted for 2 weeks prior to admission. The patient had regular menstrual cycles occurring every 24-27 days and lasting for approximately 5 days. She had no history of pelvic inflammatory disease or other pelvic pathology. Obstetric history revealed spontaneous abortion in the 12<sup>th</sup> week of gestation, two years before. Otherwise, the patient was healthy and was not taking any medication. Upon admission, the patient was alert and lucid but in severe abdominal pain. She was normotensive with normal heart rate. Physical examination revealed left lower quadrant tenderness. Speculum examination revealed a small amount of blood in the posterior fornix, with no signs of cervical lesion. Bimanual examination revealed closed cervix, small retroverted uterus and palpable left adnexal mass. Transvaginal ultrasound revealed a normal-appearing uterus, a moderate amount of free fluid in cul-de-sac, heterogeneous mass behind the left ovary which measured 30x28 mm and dermoid cyst of the left ovary measuring 25 mm in diameter. The right ovary was of normal size, with the presence of corpus luteum. Blood tests showed mild anemia (red blood cell count  $3.8 \times 10^{12}/L$ : normal range  $3.86-5.08 \times 10^{12}/L$ ; hemoglobin 113 g/L: normal range 119-157 g/L; hematocrit 0.332 L/L: normal range 0.356-0.47 L/L), with slightly elevated white blood cell count ( $12.6 \times 10^9/L$ : normal range  $3.4-9.7 \times 10^9/L$ ; segmented neutrophil granulocytes  $11.40 \times 10^9/L$ : normal range  $2.06-6.49 \times 10^9/L$ ; lymphocytes  $0.60 \times 10^9/L$ : normal range  $1.19-3.35 \times 10^9/L$ ). Laparoscopy was performed as ruptured left-sided ectopic pregnancy was suspected. Approximately 250 mL of blood and coagulum was found in cul-de-sac. Inspection of the left adnexa revealed ruptured ampullar ectopic pregnancy with active bleeding. Furthermore, a dermoid cyst was noted on the same ovary. The right ovary appeared normal with corpus luteum approximately 30 mm in diameter. Left salpingectomy was performed. Forceps was used to grasp the left ovary and unipolar cautery was used to make puncture in the left ovary, which resulted in outpouring of a sebaceous creamy substance with abundance of hairy material. By grasping the outer and inner layers separately, the inner cystic wall was stripped and removed. Another puncture was made on the opposite side of the left ovary, which resulted in outpouring of a chocolate substance (i.e. coagulated blood). Beneath

the left ovary, the formation of a tubo-ovarian abscess was seen; subsequently it was punctured and a significant amount of pus was noticed. As there was no ovarian tissue left, ovariectomy was performed. The histopathologic finding revealed dermoid and endometrial cyst of the left ovary together with tubal pregnancy and tubo-ovarian abscess on her left adnexa.

## Discussion

Coexistence of mature teratoma and endometrioma on the same ovary has been described in some isolated case reports<sup>5</sup>. However, this is the first case report of ruptured ectopic pregnancy occurring with preexisting dermoid cyst, endometriosis and tubo-ovarian abscess of the same adnexa. In our case, the patient appeared to have ovulated from her right ovary as evidenced by corpus luteum cyst noted at laparoscopy. Ovulation may have occurred on the right side with fertilized ovum transfer to the left side. This phenomenon of transperitoneal migration of the ovum has been well described in the literature in patients having only one tube and one ovary on the contralateral side<sup>6</sup>. Ectopic pregnancy is difficult to diagnose clinically and even intraoperatively. Regarding literature on the coexistence of ectopic pregnancy and dermoid cyst, there are few case reports<sup>7,8</sup>. Mathew and Al-Hina<sup>9</sup> have reported a case of ruptured right ectopic pregnancy and dermoid cyst of the left adnexa; however, in our case, both ruptured pregnancy and dermoid cyst were seen on the same adnexa. Although dermoid cysts and endometriosis are commonly found separately in women of reproductive age, only few cases of endometriosis coexisting with dermoid cyst in a single ovary have been reported. Ferrario *et al.*<sup>5</sup> have published the first case report of the simultaneous presence of dermoid cyst and endometriosis in a single ovary, which was a coincidental finding in a 23-year-old woman subjected to bilateral salpingo-oophorectomy due to the finding of pelvic mass. Caruso and Pirrelli<sup>10</sup> have described a case of a 28-year-old woman with bilateral ovarian masses that were later histopathologically confirmed as separate endometrial and dermoid lesions in the left ovary. Frederick *et al.*<sup>11</sup> describe a case of a young woman with primary infertility and incapacitating dysmenorrhea. Histopathologic assessment led to the diagnosis of ovarian dermoid cysts with pelvic endo-

metriosis. Chen *et al.*<sup>12</sup> describe a complex, smooth-surfaced, ovarian tumor with two distinct parts in the right pelvis. Histopathologic examination revealed endometriosis and a benign cystic teratoma (referred to as dermoid cyst) with plenty of skin appendages, sebaceous glands and mature adipose tissue. Regarding the finding of tubo-ovarian abscess, there are few case reports of ovarian dermoid cyst superinfection diagnosed by abdominal radiography and computed tomography (CT) scan<sup>13,14</sup>. In the aforementioned cases, sonography was not an option as the presence of gas disables the finding. The last but not the least, if the patient is pregnant, CT scan is not a prudent option. Ectopic pregnancy can be easily mistaken for tubo-ovarian abscess. Some cases of infected ectopic pregnancy simulating tubo-ovarian abscess are reported and the authors agree that the diagnosis could be difficult and misleading<sup>15</sup>. Symptoms and signs of both conditions include abdominal pain and vaginal bleeding following the period of amenorrhea, usually accompanied by fever, which should be kept in mind on differential diagnosis. Recently, Takeda *et al.*<sup>16</sup> have reported a case of a female patient who suffered from early abdominal pregnancy complicated by parasitic bilateral dermoid cysts. They performed laparoscopic single-site surgery; however, we performed routine laparoscopic three-site surgery. Craggs *et al.*<sup>17</sup> report a case of a female in late pregnancy who had a tubo-ovarian abscess that manifested as appendicitis and was a result of *Enterobius vermicularis* infection.

To our knowledge, this is the first case report of ruptured ectopic pregnancy occurring with preexisting dermoid and endometriotic cyst together with tubo-ovarian abscess of the same adnexa. Coexistence of different pathologies in a single organ presents a challenge to both the clinician and histopathologist.

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## Sažetak

## RUPTURIRANA TUBARNA TRUDNOĆA, DERMOIDNA I ENDOMETRIOTIČNA CISTA TE TUBOOVARIJSKI APSCES NA ISTIM ADNEKSIMA

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Tridesetdvo­godišnja trudnica primljena je u bolnicu zbog bolova u abdomenu uz minimalno vaginalno krvarenje. Transvaginalnim ultrazvukom ustanovljena je slobodna tekućina u zdjelici te je učinjena laparoskopija kojom je otkrivena višestruka ginekološka patologija. Histopatološki nalaz je uz rupturiranu tubarnu trudnoću ukazao na istodobno postojanje dermoidne, kao i endometriotične ciste te apscesa jajovoda i jajnika. Ovaj prikaz slučaja ukazuje na mogućnost postojanja višestruke patologije na istom organskom sustavu, što bi operater i patolog trebali imati na umu u procjeni opsega operacijskog zahvata.

Ključne riječi: *Trudnoća, izvanmaterična; Dermoidna cista; Endometrioza; Apsces; Adneksalne bolesti; Prikazi slučaja*