Incidental Finding of an Accessory Ovary at Laparoscopic Surgery

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Abstract

An accessory ovary is one of the rare gynecologic abnormalities of the female genital tract. The etiology of accessory ovary has been reported to be acquired origin, such as postsurgical or postinflammatory implants, and true embryologic origin. However, as in the present case with unremarkable medical history and no urogenital abnormalities, there are accessory ovaries that cannot be explained by these etiologies. In such cases, the etiology of accessory ovary might possibly be torsion of functional ovarian cyst during the fetal period or asymptomatic torsion of the functional ovarian cyst at some time after birth.

Keywords: Accessory ovary, asymptomatic torsion, ectopic ovary, fetal functional ovarian cyst, laparoscopic surgery

INTRODUCTION

Ectopic ovary, either accessory or supernumerary, is among the rarest gynecologic abnormalities. The incidence for these abnormalities is estimated to occur in 1 in 29,000 to 1 in 70,000 gynecologic admissions. In addition, when limited to infertile women, incidences for accessory and supernumerary ovaries are 2 in 3811, respectively. An accessory ovarian tissue has the functional and pathological abilities of normal ovary. We report a case of an accessory ovary incidentally discovered during laparoscopic hysterectomy.

CASE REPORT

A 46-year-old woman, gravida 0, para 0, presented to our hospital with the complaint of atypical genital bleeding. Menstrual cycle was regular with no clinical symptom of dysmenorrhea. She had no history of acute abdominal pain, surgery, or pelvic inflammatory disease. Her family history was uneventful. The clinical examination of the external genitalia and vagina was normal. On pelvic examination, the uterus was anteverted and was of fist size. Bilateral adnexa was not palpated. Transvaginal ultrasonography and preoperative magnetic resonance imaging revealed multiple uterine leiomyoma. The left ovary was able to be confirmed behind the uterus, but not the right ovary. Preoperative drip infusion pyelography revealed no urinary tract abnormalities. Laboratory data showed no abnormal findings. Cervical and endometrial cytology was both negative. The patient decided to undergo laparoscopic hysterectomy after receiving an explanation about the condition and treatment of the disease.

At laparoscopy, the patient was found to have a 2-cm white structure adhered to the omentum and right side of the abdominal wall. Macroscopically, the white structure resembled ovarian tissue. After excising the adhesion between the white structure and the omentum, the white structure and the scarred ectopic right ovary were found to be connected by 1-mm wide ligamentous tissue. The scarred ectopic right ovary was connected to the utero-ovarian ligament and...
infundibulopelvic ligament. There was no abnormal finding on the right fallopian tube. The film-like adhesion and ligamentous tissue were easily cut with scissors. The left ovary and fallopian tube were normal [Figure 2c]. Total laparoscopic hysterectomy, bilateral salpingectomy, and resection of the white structure were performed. There were no intra- or post-operative complications, and the patient was discharged on the 5th day after the surgery.

Histopathological examination of the resected white structure revealed corpus albicans and interspersed follicles, which was diagnosed with an accessory ovary [Figure 3].

**DISCUSSION**

Ectopic ovary, either accessory or supernumerary ovary, is a very rare ovarian abnormality. The accessory ovary is a structure containing normal ovarian tissue located in the vicinity of a ectopic ovary with which it has a direct or ligamentous attachment.[4] Whereas, supernumerary ovary was defined as ovarian tissue entirely separate from the normally placed ovary. There is no ligamentous or direct connection with the ectopic ovary, the broad ligament, the utero-ovarian ligament, or the infundibulopelvic ligament.[4] The etiology of accessory and supernumerary ovary is still unclear and may cause substantial confusion. Lachman and Berman described the accessory and supernumerary ovary reported in the past and suggested that 50% of the cases were postsurgical or postinflammatory implants.[5] Apart from this acquired origin, true embryologic origin is also suggested for the etiology of the ectopic ovary.[5] It is thought to result from the abnormal separation of a small portion of the developing and migrating ovarian primordium.[4,6] Thus, there are two types of ectopic ovary, namely, acquired origin and true embryologic origin.

In the present case, since there was no history of surgery and pelvic inflammatory disease, the etiology of accessory ovary according to Lachman’s classification might be the true embryologic origin. However, accessory ovary associated with true embryologic origin complicates the mesonephric and Müllerian duct-derived systems on the affected side such as the horn of uterus, round ligament, broad ligament, fallopian tube, kidney, and ureter.[7] Because the patient did not complicate any of these urogenital abnormalities, the etiology of the accessory ovary in the present case is unlikely to be the true embryologic origin. In such case with unremarkable medical history and no urogenital abnormalities, there are two conceivable explanations for the etiology of the accessory ovary. First, it might be the torsion of functional ovarian cyst during the fetal period. Since fetal supporting ligaments are less tense and the fetal pelvis is shallow compared to the postpubertal women, the fetal ovary is more susceptible to torsion than the postpubertal ovary. The incidence of fetal ovarian cysts is estimated to be 1/2500.[8,9] Although the fetal ovary is usually dormant, the follicular cyst may develop by exposure to placental human chorionic gonadotropin and maternal estrogen. After delivery, when the fetal ovary is isolated from maternal hormones, it disappears
spontaneously. Second, it might be asymptomatic torsion of the functional ovarian cyst at some time after birth. In most cases, the torsion of ovarian cyst interferes with the blood supply and causes necrosis of the tumor. As a result, subsequent autoamputation may occur. However, in the present case, the torsion might have been insufficient to interfere with the blood supply to cause necrosis and autoamputation of the ovarian cyst. Evidence of the scarred ectopic right ovary and adhesion between the accessory ovary and the omentum in the present case may suggest the torsion of the functional ovarian cyst and subsequent inflammation.

In summary, the present case report illustrates the accessory ovary incidentally found during total laparoscopic hysterectomy. The etiology of the accessory ovary has been reported to be acquired origin or true embryologic origin. However, among patients who do not have a history of acquired origin without complications of urogenital abnormalities, torsion of functional ovarian cyst during the fetal period or asymptomatic torsion of the functional ovarian cyst at some time after birth might be the conceivable explanations for the etiology of the accessory ovary.

Ethical Statement
The institutional review board committee of Tomakomai city hospital has approved this study. The IRB Project No.2019-5 was obtained on 30th August in 2019.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understand that names and initials will not be published, and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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