CASE REPORT

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Supernumerary Ovary Characterized by Cystic Changes in the Omentum: A Rare Pathology

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ABSTRACT Supernumerary ovary is a rarest gynecologic condition in children. The presence of cystic changes within the supernumerary ovary is extremely rare. We report a case of neonate with supernumerary ovary. The patient was 3-month-old girl with a right-side cyst diagnosed by a prenatal ultrasonographic evaluation. Ultrasonography performed right after birth, and a magnetic resonance imaging examination had revealed that the abdominal cystic mass contained patchy semisolid components within a hemorrhagic or mucinous fluid. Laparotomy revealed a cystic mass which has no connection with the normal reproductive organs. Two normal ovaries were identified in the abdominal cavity. After excision, histopathologic study revealed that cystic mass was supernumerary ovary on the omentum. The baby had no postoperative complications. Prenatal differential diagnosis of abdominal cystic masses in infants with supernumerary ovary will be useful to keep in mind.

Keywords: Supernumerary ovary; neonatal ovarian

Defined as an ectopic ovarian tissue without any connection with the utero-ovarian ligament, broad ligament, or infundibulopelvic ligament, a supernumerary ovary is an extremely rare gynecological anomaly. It was first described by Winckel in 1890. The supernumerary ovary is unrelated to normal ovaries but has a normal ovarian function, although they may also sometimes be non-functional.[1-3] In this paper, we report the clinical, radiological, and histopathological features of a supernumerary ovary in the right abdominal region that was excised laparoscopically, and diagnosed histopathologically.

CASE REPORT

A female infant born at 39th gestational week had been found to have an abdominal cystic mass by prenatal ultrasonography (US) at 28th week of gestation. US was performed right after birth (Figure 1A), and a magnetic resonance imaging (MRI) examination had revealed that the abdominal cystic mass contained patchy semisolid components within a hemorrhagic or mucinous fluid (Figure 1B, Figure 1C).

Surgery had been recommended for the lesion, but the patient's parents had refused it. The patient was referred to our hospital for jaundice 3 months later. In laboratory studies, she had a hemoglobin level of 7.7 g/L, a thrombocyte count of 17,000/mm^3, and an indirect bilirubin level of 4.6 mg/dL. On examination, there was a mass with a size of approximately 5 cm on the right side of the abdomen. US examination showed no significant morphological change but a modest increase in size compared to the

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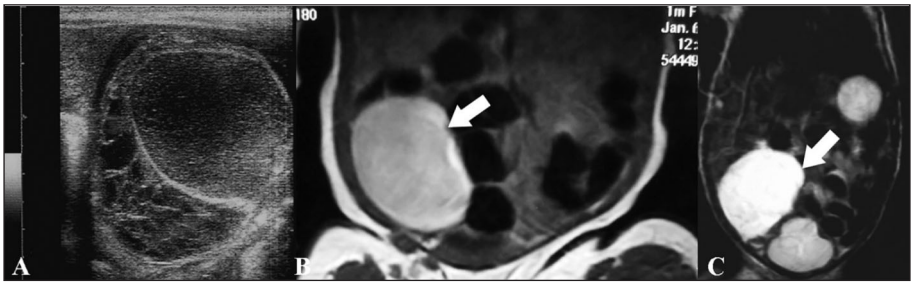

FIGURE 1: A) An ultrasonographic image shows a large, complex mass with a mixed echo pattern; B) T1-weighted and C) T2-weighted coronal magnetic resonance images show a hyperintense expansile cystic mass lesion at the right lower quadrant. Hyperintensity in the T1-weighted magnetic resonance image is based on the hemorrhagic nature of the lesion.

previous US examination. This time, the patient's family gave consent for surgery. In laparotomy, a brown-colored cystic mass connected to omentum was excised, which had a size of 7x5x3 cm and a weight of 80 grams (Figure 2A). The cystic mass did not have any connection with normal reproductive organs. It was, however, connected to the greater omentum and twisted around a pedicle. It had a thin and smooth wall. Cyst fluid had a hemorrhagic character. There were 2 normal ovaries and a normal uterus in the pelvic cavity. Histologically, a normal ovarian stroma with scattered primordial follicles was seen (Figure 2B-D). The histopathological diagnosis of a supernumerary ovary with signs of torsion and cystic changes was made. The patient had no postoperative complications and was discharged on the 4th postoperative day. Her follow-up was also non-problematic. Informed consent was obtained from the parents of the patient for this study.

DISCUSSION

The supernumerary ovary is a rare congenital, anatomic, and genital condition. Lachman and Berman classified its etiology as being postoperative, post-inflammatory, or true embryological.[2] Primordial germ cells found on the cyst's wall confirm that the omental cystic lesion of our patient originated from the ovarian tissue. These findings, taken together with those of previous reports, made us hypothesize that the ectopic ovarian tissue transformed into an omental cyst after abnormal embryological migration. We may suggest that supernumerary ovaries possibly have an embryological origin as per Lachman's classification.[2-4]

According to Wharton criteria, the supernumerary ovary has 3 major characteristics.[5]

1. It must contain ovarian follicular tissue

2. It must be completely separate from the normal ovarian tissue

3. It must originate from a separate primordium.

Accessory ovary, a condition most commonly confused with the supernumerary ovary, is either located in the vicinity of or in relation to a normal ovary. It may also be connected to accessory ovaries, fallopian tubes, or various ligamentous structures of the utero-ovarian complex.[6]

Supernumerary ovaries may be located in the pelvis, retroperitoneum, para-aortic region, inguinal area, or colon mesentery. Omental location, however, is less common. Omental supernumerary ovary with cystic changes is particularly rarer.[7] Our literature search identified only eight cases with omental supernumerary ovary.[7,8] It has been reported that 23-36% of supernumerary ovary cases are associated with other congenital malformations of the genitourinary system such as kidney and ureter agenesis, bladder diverticula, ureteral duplication, and bicornuate/unicornuate uterus.[2,6,9] No associated malformation was detected in our patient. Furthermore, endometriosis at various locations of the pelvic cavity may also be associated with supernumerary ovary in about 20% of adult patients.[6]

The majority of cases with supernumerary ovary are asymptomatic and diagnosed incidentally at surgery performed for other indications, or at autopsy. The supernumerary ovary may become clinically

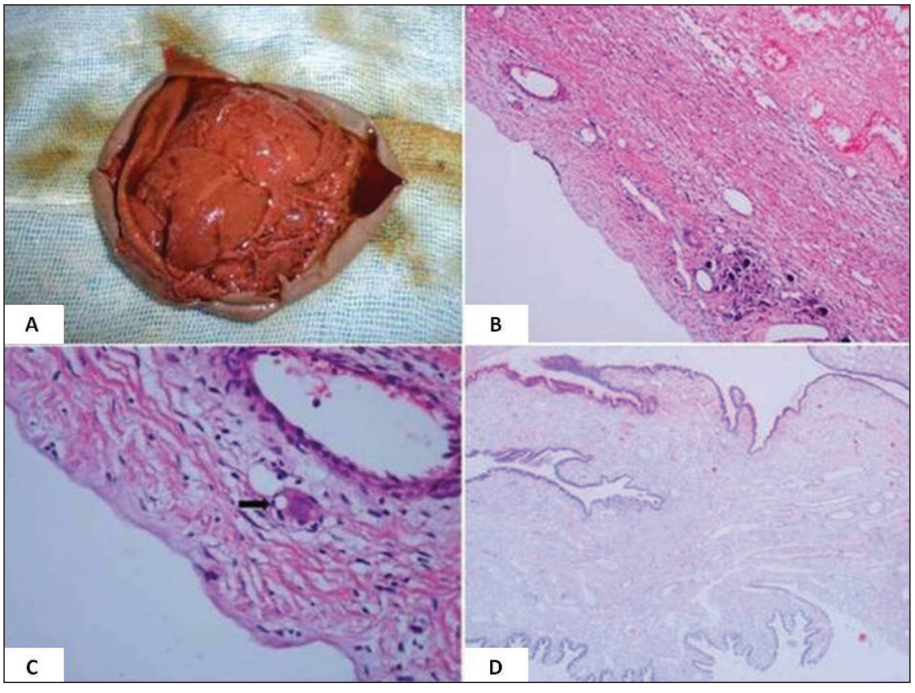

FIGURE 2: A) Postoperative gross specimen shows a thin-walled cyst containing intraluminal hemorrhage; B) Hemorrhage, necrosis and microcalcified body are seen in ovarian stromal-like connective tissue (H&E, original magnification x40); C) Primordial germ cell (marked with an arrow) (H&E, original magnification x200), and D) Tuba uterina (H&E, original magnification x40).

symptomatic when it gets enlarged or twisted around a pedicle, as in our case. They may rarely show the cystic or neoplastic transformation. US, computed tomography, and MRI may aid in the diagnosis of the supernumerary ovary.[6,7] Unfortunately, no specific imaging finding has been reported for supernumerary ovary in the literature. However, supernumerary ovary should be suspected in cases having bilaterally normal ovaries and a thick-walled, complex cystic lesion, especially in the pelvic region.

The differential diagnosis of supernumerary ovary should include hydrosalpinx, ectopic pregnancy, para-ovarian cyst, pedunculated myoma uteri, parasitic tumors of internal genital organs, cysts of mesenteric and omental origin, and lymphangioma. Defining supernumerary ovary may be important for the differential diagnosis of neonatal ovarian cysts. Supernumerary ovary should be remembered in the prenatal differential diagnosis of ovarian cystic mass lesions.[3,5,6,8,10,11]

Owing to the risk of malignant transformation, supernumerary ovary should be treated by surgical excision.[11]

In conclusion, the supernumerary ovary is an extremely rare gynecological condition. It should be remembered in the differential diagnosis of intraabdominal cystic mass lesions in the prenatal period, as was the case in our patient.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

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