

Supernumerary Ovary: A Case Report

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Abstract

Supernumerary Ovary is a rare incidental diagnosis, which is on the rise due to modern imaging modalities and advent of laparoscopy in Gynecology. It has various clinical implications. It can present like Endometrioma, Fibroma or as papillary serous cystadenocarcinoma. Removal of this additional ovary tends to stay in dilemma, because its follicles can be used in the treatment of infertility and it has malignant potential. Hence, correct diagnosis and prompt decision making is necessary based on the patient age and parity. As in our case, a nulligravida presented with torsion of the ovarian cyst. During Laparoscopic procedure, we noticed that this pathology was from the third ovary as in this case Supernumerary ovary. The removal of the ovary was not done as this patient was undergoing treatment for infertility. Weighing the benefits over risks, patient was counselled for proper follow-up and removal of this Supernumerary ovary following completion of family. All gynecologists should be aware of this rare condition due to its clinical implications and its appropriate management.

Keywords: Supernumerary Ovary, Ovarian Torsion, Malignant potential, Fertility, Incidental diagnosis

Introduction

Supernumerary ovary is a rare and a unique entity. Approximately 44 cases been reported in the literature [1]. Ovaries are said to be Supernumerary if the ovarian tissue is entirely separate from Eutopic ovaries which has its own pedicle and blood supply, with no ligamentous or direct connection to nor-

mally placed ovaries [2]. This additional ovary consists of ovarian follicles that develop from a different primordium. Different anatomical locations where the supernumerary ovaries can be present are the mesentery, omentum [3], uterine ligaments, Pouch of Douglas, sigmoid colon or even remote sites such as kidney [4]. The incidence is on a rise due to advent of laparoscopy and other imaging modalities. This incidental finding has to be mentioned due to its various clinical implications and decisions regarding its management.

Case report

A 34 year old nulliparous patient presented to our hospital with intermittent lower abdominal pain for 10 days. The pain was continuous and increased in intensity for the past 2 days. She had no history of fever or vomiting. She had regular menstrual cycles, and presented on day 12 of her menstrual cycle. She is married for 4 years and was evaluated for infertility. She was diagnosed with a right ovarian cyst before 6 months. She was asymptomatic until this presentation and was on regular follow up. She has no history of ovulation induction. No other medical or surgical history. She is obese with a Body Mass Index of 33. On examination she is hemodynamically stable, per abdomen examination revealed a vague cystic mass in the right iliac fossa extending up to suprapubic area with tenderness in the right iliac fossa. Internal exam revealed a tense cystic mass in the anterior and right lateral fornix with the normal sized uterus which is deviated to the left side. An Ultrasonography showed torsion of right ovarian cyst with no free fluid within the pelvic cavity. Her blood counts were normal.

After obtaining an informed written consent, patient was posted for Laparoscopic right ovarian cystectomy. She was given analgesics and antibiotics and was taken up for surgery. Intra operative findings showed a normal sized uterus and two ovaries were seen on the right side, each ovary measures 3 x 3 cm. One ovary was in the normal anatomical position suspended medially by the ovarian ligament and laterally with infundibulopelvic ligament and supernumerary ovary situated 6cm lateral to the eutopic ovary which is connected to the Infundibulopelvic ligament medially with its own pedicle and blood supply (Figure 1). Ovarian cyst of size 14 x 12 cm arising from supernumerary ovary (Figure 2) which had undergone torsion 6 times along its pedicle (Figure 3). Pedicle was untwisted and cystectomy done. Biopsy was taken from the additional ovary to confirm the diagnosis; Histological examination showed presence of ovarian stroma and corpus albicans (Figure 4). Contra lateral adnexa had normal fallopian tube and ovary. Hemostasis was secured. Postoperative antibiotics and analgesics were continued. Patient had uneventful post-operative period and was discharged 2 days after surgery. This case history has been presented after obtaining written consent from the patient.

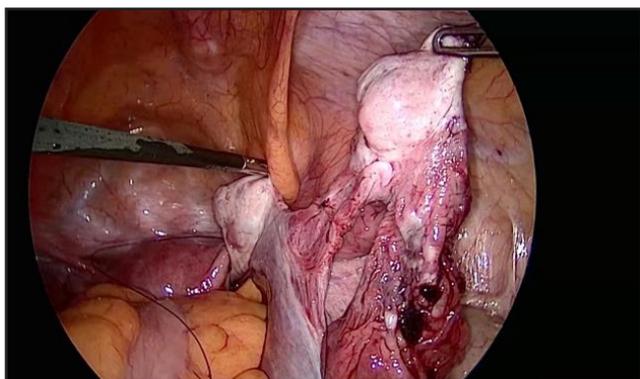


Figure 1: Shows two ovaries on right side. Additional ovary seen 6cm lateral to Eutopic ovary with its own pedicle (attached to IP ligament medially). This image is following cystectomy.

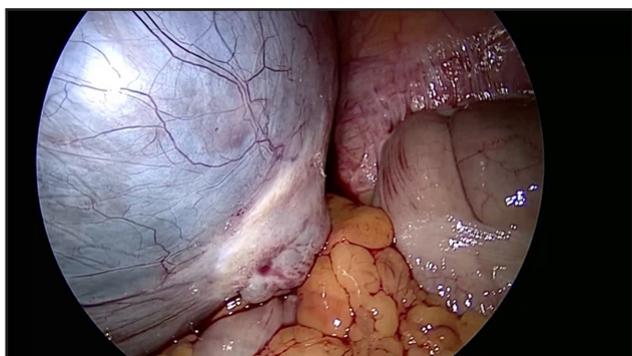


Figure 2: Shows cyst arising from supernumerary ovary with normal ovarian tissue seen close to the cyst wall.

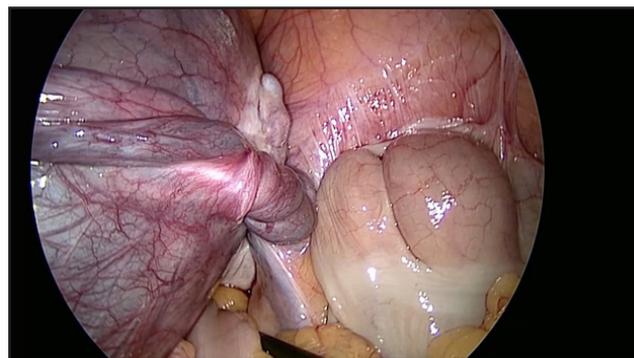


Figure 3: Shows Torsion of Ovarian cyst

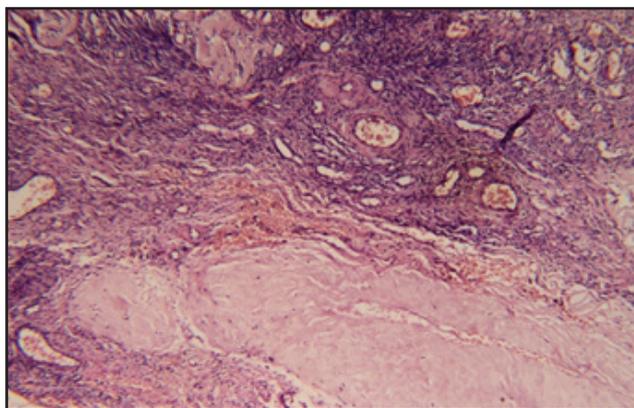


Figure 4: High power view showing ovarian stroma and corpus albicans

Discussion

The incidence of this rare entity has been shown approximately to be 1 in 93000 [5]. The first reported case was in 1890, Winckel et al [6]. Generally 36% of the cases were associated with congenital anomalies such as accessory ostium, accessory fallopian tubes, bifid tubes, bicornuate uterus, unicornuate uterus, septate uterus, agenesis of kidney or bladder diverticulum and one rare case of accessory adrenal was also reported along with supernumerary ovary [7].

There are various proposed theories that results in supernumerary ovary such as transplantation of gonadal ridge following gonocyte incorporation, arrested gonocyte migration [8]. Various experimental models [9] like homograft transplantation suggested that normal peritoneal tissue is not susceptible to implantation whereas scar tissues are. Later following this supernumerary ovary was classified as postsurgical, post inflammatory or embryological [10]. Based on our patient's medical history suggested that in our case supernumerary ovary likely to be of embryological origin.

Pathologies that were found in a supernumerary ovary are corpus luteal cysts, endometrioma, dermoid cyst, fibroma, mucinous cystadenoma, Brenner and even malignancy like papillary serous carcinoma [11,12]. Supernumerary ovary is usually asymptomatic unless otherwise presents with any of the above pathologies. They are commonly an incidental finding.

They are mostly less than 1cm and formed from a separate anlage, widely situated from normal ovary. It is confirmed with histological finding of normal ovarian tissue with cystic corpus luteal tissue many times [13]. Many cases have reported with the history of previous pelvic surgery, pelvic inflammatory disease, genitourinary tract abnormality or malignancy [14].

Differential diagnosis includes (a) Accessory ovary - situated near the normal ovary, usually attached to it with a common blood supply. They are developed from splitting from embryonic gonad during early development [15]. May also be due to ovarian implant or torsion. (b) Ovarian remnant syndrome- when a part of ovarian tissue is left during salpingoophorectomy procedure, if the clamp is not placed proximal across infundibopelvic ligament [16]. This remaining ovarian tissue is generally active. This may cause pelvic pain or dyspareunia. (c) Ovarian implant syndrome- unintentional ovarian tissue in other different places following abdominal surgeries [17] (d) Ectopic ovary- undescended ovaries are characterized by the attachment of the upper pole to an area above the level of the common iliac vessels [18]. Although the term ectopic ovary is commonly used, undescended ovary is probably a more accurate reflection of the underlying pathophysiology.

Few case reports have showed that obesity is inked to supernumerary ovary [14]. As in our case, patient's body mass index being 33. This is explained by excess estrogen which can result in additional ovarian tissue but not proven. Clinical implication of this additional ovary may be torsion, cystic or neoplastic transformation [11] or if situated within the pelvis can provide follicles for future fertility. The Probable reason of torsion in our case being supernumerary ovary with single pedicle and no lateral attachment. Furthermore, this extra ovary can produce hyper estrogenic environment which can induce malignancy [19]. Hence this should be properly screened for any pathology prior to surgery. In our case Supernumerary ovary was preserved as the patient is infertile and it may provide follicles for future fertility. Patient has been counselled for removal of Supernumerary ovary following completion of family due to its malignant transformation.

Other important clinical implication that should be taken care in this case is during ovum acquisition for artificial reproductive techniques. Ovum pick-up would be difficult and it needs proper sonographic evaluation. Additional ovarian tissue theoretically will result in raised estrogen levels and markedly decreased levels of follicular stimulating hormone. Further, the antral follicular count and Anti mullerian Hormone would be elevated. Hence, ovarian hyper stimulation should be kept mind during ovulation induction [14].

Conclusion

We present this unusual rare entity which can have significant clinical relevance to the patient. Hence careful sonographic screening is essential. Generally this additional ovary should be removed due to its malignant potential. All gynecological

surgeons should be aware of this condition for proper management.

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Declaration:

- a) Conflict of Interest: No Conflict of Interest
- b) Ethical committee approval: Obtained

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