

## Unilateral Agenesis of Adnexal Structures in a Subfertile Woman

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### Abstract

Unilateral absence of tube and ovary is an incidental finding in laparoscopy reported as rarely as 1 in 11,240 women. This case report describes absence in a 31 year old female married for five years, came for evaluation of secondary sub fertility with HSG showing blocked right tube. Laparoscopy revealed agenesis of right adnexa. The reason for this disease is unclear although adnexal torsion in fetal life could be the possible etiology. It is an incidental diagnosis in majority of the cases during laparoscopy. Women with this condition can have a finite number of reproductive years due to the presence of a single ovary.

**Keywords:** Absent ovary and tube; Adnexal torsion; Laparoscopy; Fallopian tube; Ovary;

### Abbreviation

HSG-Hysterosalpingogram

IUI-Intra uterine Insemination

IVF- in vitro fertilization

ART- Assisted reproductive technology

### Case Report

31 year old female married for five years attended the Institute of Reproductive medicine, MMM hospital, [Chennai, India] for evaluation of secondary sub fertility. She had one missed miscarriage in the past. On evaluation for sub fertility, ovarian reserve tests, and partner's semen analysis were normal and Hysterosalpingogram (HSG) done elsewhere three years ago revealed right

sided tubal block and patent left tube. The patient had not conceived despite three cycles of ovulation induction and two cycles of IUI wherein ovulation was documented on the left side. There was no history of abdomino pelvic surgeries. Pelvic examination was normal and transvaginal ultrasound showed normal left ovary and right ovary was not visualized. Subsequently, she underwent diagnostic laparoscopy and hysteroscopy. The laparoscopy revealed normal appearing uterus, absent right ovary and only proximal part of the right fallopian tube (Figure 1). Left tube was completely developed and left ovary was normal (Figure 2). Further evaluation with hysteroscopy revealed normal left and right ostia (Figure 3 & 4). No adhesions were observed in the rest of the peritoneal cavity. Chromopertubation revealed bilateral blocked tubes. With the suspicion of identifying renal malformation, ultrasound of the renal tract was done and found to be normal. She is planned for IVF in view of tubal factor infertility.

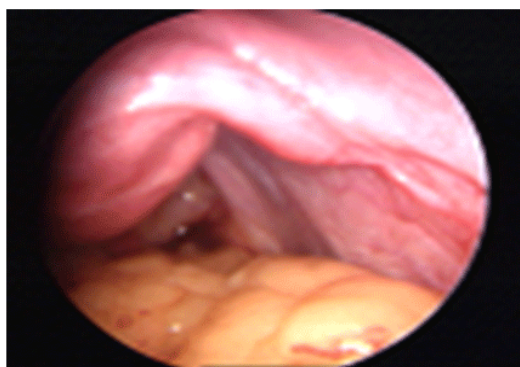
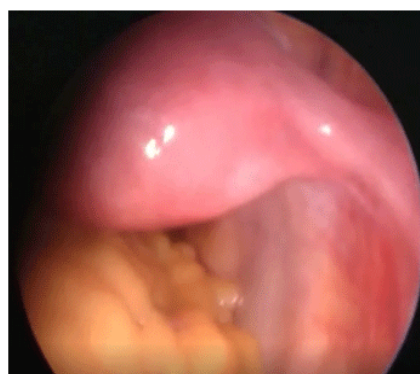


Figure 1: Absent distal tube and ovary-Right



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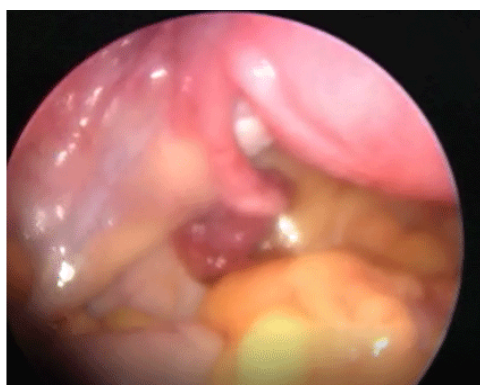
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### Discussion

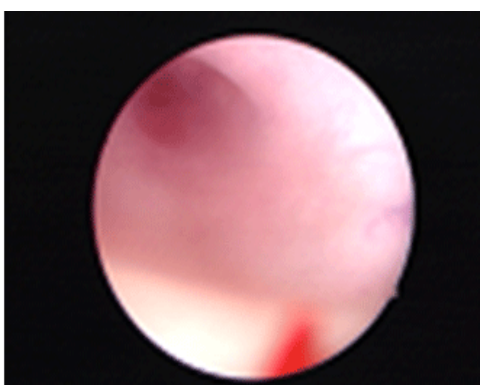
Absent tube and ovary is a rare entity reported as rarely as 1 in 11,240 women by Sivanesaratnam in 1986 [1]. With the advent of laparoscopy, there is a possibility of increase in the incidence. The theories proposed behind this pathology are adnexal torsion in fetal life, vascular accident leading to ischemia of the adnexa and defect in the development of Mullerian system [2].

The embryological development of the uterus and fallopian tubes starts from 6th week of gestation. This occurs concurrently with the metanephros. The ovary has a different embryological origin from the primitive yolk sac [3]. The absence of tube may point towards the abnormal development of the ipsilateral Mullerian duct but in this case, it is unlikely as it is usually associated

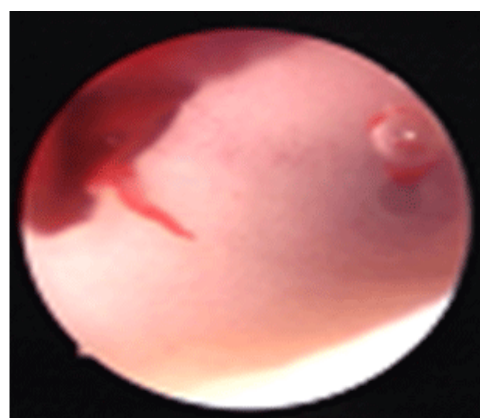
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**Figure 2:** Normal left adnexa



**Figure 3:** Hysteroscopy-Right Ostia normal



**Figure 4:** Hysteroscopy-Left Ostia normal

with abnormality in the uterus as reported by Mulayim [4]. Congenital tubo-ovarian defects was described by Dueck et al., [5] and the laparotomy in a 8 month old child revealed a cystic right ovary and absent left ovary with a stretched rudimentary tube indicating a fetal vascular accident. Gursoy [6] had reported absent left kidney and adnexa pointing to common embryological origin of these structures.

Several authors [2,7,8] have mentioned similar cases in their reports where only a part of the tube and the entire ovary was absent and the reason could be torsion at the ovarian ligament in the fetal or adolescent life which could have lead to resorption of the structures.

Another interesting theory could also explain the unilateral absence as proposed by Garret [9], who observed discontinuous fimbrial ends in

young girls along with absent ovaries, possibly pointing towards common embryological origin of the fimbria and ovary. A novel origin for serous ovarian carcinoma has been proposed in the distal oviduct and thus bears importance for future diagnosis and treatment [9].

The absence of one ovary does not lead to decreased fertility potential but due to finite number of follicles, the women can have a shorter reproductive life [10]. There was a report in 2013 by Gursoy et al., [6] where there was an incidental diagnosis of ipsilateral absent adnexa in a multiparous woman at the time of hysterectomy. Chen et al., [7] reported a similar case of unilateral agenesis of adnexa with blocked contra lateral tube. There might be a congenital block in the lumen of the other fallopian tube pointing common origin. IVF is the only resort in such cases. Salpingoscopy may be of relevance in such cases. Lin et al., [11] observed that controlled ovarian stimulation and IUI is as effective in women with unilateral obstruction and ART is not necessary as the first line of treatment. Our patient was planned for IVF in view of tubal pathology.

### Conclusion

This rare entity should be borne in mind and it is mostly an incidental finding during laparoscopy. Fetal adnexal torsion is the most plausible reason although the new theory of common origin of fimbria and ovary needs to be validated. Women with this condition will also need screening of the renal tract to rule out anomalous development. HSG always has limitations and the radiograph must be reviewed by the treating clinician. Since there is a possibility of common origin of pathology in bilateral adnexa, the contralateral tube should always be checked for patency. Such women should be encouraged to try for pregnancy immediately in view of their finite reproductive potential.

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