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Case Report

Ovarian maldescent: a case report and discussion

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ABSTRACT

Undescended ovary or ovarian maldescent is a rare condition usually associated with mullerian malformation and typically found in case of infertility during their workup. Embryologically, the ovarian development from the genital ridge is totally different from the paramesonephric duct which forms the uterus and fallopian tubes. Still the ovarian maldescent has strong association with mullerian abnormalities, especially with unicornuate uterus. Therefore, supporting the hypothesis that abnormal migration could affect their normal fusion. In strong correlation of ovarian maldescent with mullerian abnormality here we report case of a patient presented to infertility clinic with unicornuate uterus with unilateral renal agenesis diagnosed to have unilateral undescended ovary with conclusion that the accurate diagnosis is important and radiological effort should be made to locate the undescended ovary if the ovary could not be found in normal location especially when associated with mullerian abnormality.

Keywords: Abdominal ovary, Ovarian maldescent, Undescended ovary, Unicornuate uterus

INTRODUCTION

Maldescented ovary is a rare clinical condition in which ovaries are found in abnormal site along its migration pathway from lumbar region to ovarian fossa. They are said to be abdominal ovaries when the upper pole attachment is above the level of common iliac vessels.^{1,2}

Embryology

Embryology is most important to understand the undescended ovaries. The gonads develop during 5th week of pregnancy as cluster of proliferating cells at medial side of urogenital ridge. At the same time the mesonephric (wolffian) and paramesonephric (mullerian) ducts also develops.^{3,4}

During the 3rd month of fetal life the gonads descend from their initial location near the kidney towards the pelvis guided by Gubernaculum, a string of mesenteric tissue attached to the inferior pole of gonad. At the final

stage cranial gubernaculum forms the ovarian ligament and the caudal part becomes round ligament of uterus which runs through the inguinal canal and ends in the labia majora. The ovarian suspensory ligaments are attached to the superior pole of fetal ovary and becomes infundibulopelvic ligament. If any of this step is altered, the descent of ovaries will be disturbed and can lead to ovarian maldescent.³

The exact underlying mechanism of maldescent of ovary is unclear. It may be due to lack of caudal descent or growth restriction of specific portion of genital ridge. The other possible theories can be in association with mullerian anomalies due to multifactorial process leading to a developmental insult at 6-9 or 12 weeks.^{1,5-7}

The overall prevalence of ovarian maldescent reported is 0.3-2%. It is commonly seen along with mullerian anomalies and reported to be 20% in patient with MRKH syndrome, 42% in patient with unicornuate uterus and the prevalence of associated renal anomalies was 23%.⁵

CASE REPORT

A 26-year-old nulligravida presented to infertility clinic for evaluation of infertility of 5-year duration. She had regular menstrual cycle since menarche. She had no complaints of chronic pelvic pain or cyclical abdominal pain. No significant past medical or surgical history. In the course of infertility evaluation husband semen analysis showed normozoospermia. Ultrasonography was suggestive of right sided unicornuate uterus, left renal agenesis and absent left ovary. Folliculometry showed evidence of ovulation in right ovary.

Diagnostic hysterolaparoscopy was performed for further evaluation of uterine anatomy/anomalies and tubal patency. It revealed right sided unicornuate uterus with normal right fallopian tube and ovary. Left fallopian tube and ovary could not be visualized in the pelvis. Left ovary and part of left fallopian tube was present above the common iliac vessels.



Figure 1: Laparoscopic view of the undescended left ovary.

DISCUSSION

Failure of descent of ovary is a rare condition. In literature search we can find very few case reports of ovarian maldescent with mullerian abnormality and associated renal agenesis. This anomaly is usually associated with unicornuate uterus suggesting improper attachment of gubernaculum on one side leading to failure of ovarian descent. Fallopian tube is not attached to the uterus in this case and only distal end of the tube develops adjacent to undescended ovary.⁸

Due to atypical location of the ovary it is always misdiagnosed. The low incidence may be due to under diagnosis/ misinterpretation by radiologist/gynecologist because of lack of awareness. Therefore, in a patient of infertility with mullerian abnormality with absent ovary in routine USG and with cyclical abdominal pain, undescended ovary should be suspected. Accurate

diagnosis is important to avoid unnecessary intervention. MRI offers the most complete evaluation of uterine anatomy-associated anomalies in the work up of infertility.⁹ As in this case, laparoscopy is another diagnostic modality which remains the gold standard.³ Patient should also be made to understand about the condition as 77% of them are diagnosed during infertility workup.⁵

Sinonquel et al, reported that, like cryptorchidism undescended ovaries may have the risk of gonadal tumor formation.³ But there is no indication for removing the maldescended ovary in the absence of malignant features.

Patient should be educated and made to understand that pregnancy is still possible with risk of miscarriages and 4% prevalence of ectopic pregnancy.¹⁰ Voorhis BJ et al, reported successful ovulation with ovulation induction in maldescended ovary. Oocyte retrieval followed by IVF can also be an option in such patients with infertility.⁸ Therefore, accurate diagnosis is needed in management of patients of infertility.

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