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CASE REPORT: Bicornuate Uterus – A Precipitator of Maternal Morbidity

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Abstract

This case report concerns a woman diagnosed with a bicornuate uterus with ovarian torsion. She had been married for seven years and had conceived three times, giving birth to two live babies and had onespontaneous abortion. She was presently admitted to the hospital with complaints of pain in the left iliac fossa,which she had had for two hours before admission along with vomiting, severe bleeding, and burning micturition.During the abdominal examination, left iliac tenderness was present. During the speculum examination, cervical erosions were seen and discharge was present. A vaginal examination revealed a normal sized uterus and the left fornix was tender. The urine pregnancy test was negative. As a part of management, laparoscopy with a left-sided Salphingo-Oopherectomy was performed. When structural abnormality of the pelvic organs exists, problems arise that can place an extra burden on the mother and the fetus.Pregnancies in a bicornuate uterus are usually high-risk and require extra monitoring because of association with poor reproductiveoutcomes.When a mullerian anomaly is identified, the woman should be counselled about reproductive prognosis, pregnancy outcomes, and evidence-based management.

Keywords

Bicornuate Uterus, Developmental Anomaly, Mullerian Ducts, Strassman operation

Introduction

A 36-year-old womanfrom a low socio-economic background presented at the Gynaecology Department of a hospital in India, with complaints of pain for two hours in the left iliac fossa, vomiting, severe bleeding, and burning micturition. Her obstetric history included three conceptions, two live births and one miscarriage. She weighed 51 kg and had been married for seven years. There was no history of consanguineous marriage of parents and there was no family history of any abnormal pregnancies. Her age at menarche was 14 years and her menstrual history was uneventful. She had no significant past history of diabetes, hypertension, Rhesus incompatibility and Rubella infection. She had a history of appendectomy four years ago.

On admission to the hospital, a abdominal examination revealed left iliac tenderness. On Per Speculum examination, cervical erosions were seen and discharge was present. A Vaginal examination revealed a normal size of uterus and the left fornix was tender. Urine Pregnancy Test was done which was negative. She was advised for routine investigations and ultrasound. She was put on antibiotics and laparoscopy was planned. All blood tests showed normal results. A transvaginal ultrasoundscan was made of the pelvis with colour flow imaging, which showed that the uterus had a bicornuateconfiguration and was normal in echo texture. The endometrial cavity showed no inter cavitary contents. The left ovary was bulky, with peripherally arranged

follicles and echogenic central stroma. There was a small heterogenic structure adjacent to the left ovary, which was seen abutting the uterus (left ovarian torsion with thickened/pedicle/tubo-ovarian infective mass). The right ovary was normal. Marked probe tenderness was present in the left fornix. On Colour Doppler Flow Imaging (CDFI), no obvious internal vascularity was seen in the ovary; however, the adjacent heterogenic structure showed vascularity. Mild free fluid was seen in the pelvis. Laparoscopy with Left-sided Salphingo- Oopherectomy was done, and uncoiling of pedicle was done followed by coagulation of pedicle and excision.

Epidemiology

The prevalence of uterine malformation is estimated to be 6.7% in the general population, slightly higher (7.3%) in infertile women and significantly higher in women with a history of recurrent miscarriages (16%). [2] Overall,congenitaluterineanomaliesoccur in ~1.5% (range 0.1-3%) of females.Bicornuate uteri are thought to represent ~25% (range 10-39%) of Mullerian duct anomalies.[3, 4]

Pathophysiology

The female genital tract is formed in early embryonic life when a pair of ducts develops. These paramesonephric or mullerian ducts come together in the midline and fuse into a Y- shaped canal. The open upper ends of this structure lead into the peritoneal cavity and the unfused portions become the uterine tubes. The fused lower portion forms the uterovaginal area. [1]

A uterine malformation is the result of an abnormal development of the Mullerian ducts during embryogenesis. A bicornuate uterus is formed during embryogenesis. The fusion process of the upper part of the Mullerian ducts (Paramesonephric ducts) is altered. As a result, the caudal part of the uterus is normal while the cephalo part is bifurcated. [2]

Clinical Presentation

The most common symptomatic presentation is early pregnancy loss andcervical incompetence.[3] Infertility is not usually a problem with this type of malformation because implantation of the embryo is not impaired.[5] Dysmenorrhea is there due to cryptomenorrhea (pent up menstrual blood in rudimentary horn). Menorrhagia is present due to increased surface area in the bicornuate uterus. [1]

Effect on Reproduction

Pregnancies in a bicornuate uterus are usually considered high-risk and require extra monitoring because of association with poor reproduction potential. [2]

A bicornuate uterus is associated with increased adverse reproductive outcomes like:

Recurrent pregnancy loss

The reproductive potential of a bicornuate uterus is usually measured by live birth rate (also called fetal survival rate).

Preterm birth

With a 15 to 25% rate of preterm delivery.Often the reason that a pregnancy may not reach full-term in a bicornuate uterus is that the baby begins to grow in either of the protrusions at the top. A short cervical length seems to be a good predictor of pre-term delivery in women with a bicornuate uterus.

Malpresentations (breech birth or transverse presentation)

A breech presentation occurs in 40-50% pregnancies with a partial bicornuate uterus and not at all (0%) in a complete bicornuate uterus.

Deformity

The off-spring of mothers with a bicornuate uterus are at high risk of "deformities and disruptions" and "malformations."[7-10]

Diagnostic Evaluation

Helpful techniques to investigate uterine anomalies include transvaginal ultrasonography and sonohysterography, hysterosalpingo-graphy, MRI, and hysteroscopy. More recently 3-D ultrasonography has been advocated as an excellent non-invasive method to evaluate these malformations. [11] Often, more than one method of investigation is necessary to accurately diagnose the condition.

Correct and early diagnosis is crucial as treatment or the various conditions are very different and require proficient gynaecologists. Recurrent pregnancy loss is an absolute symptom in such conditions; unlike this patient, who had two successful pregnancies despite having a bicornuate uterus.

Management

There are different options for management. Metroplastysurgery, done to create a large uterine cavity with minimal destruction of the uterine tissue, is thetreatmentof choice.Another option is cervical cerclage, which is done to improve the fetal survival rate in selected patients. Both metroplasty and cervical cerclage may be prescribed. The most common and definite management is the Strassman operation, in which unification of both the uterine cavities, after the excision of the tissue in between the two cavities, is done. The Strassmanutriculoplasty operation, with a transverse fundal incision for the reunification of the uterine cavity, certainly improves the obstetric outcome in women with bicornuate uterus, who have suffered earlier pregnancy losses.[12]

Despite the association of obstetric problems with double uterus, various authors have reported favourable reproductive outcomes among these women. In Finland, it was found that 8 (15.7%) out of the 51women with double uterus attempting pregnancy had primary infertility of non-uterine causes, while 49 (96.0%) of them were able to produce 115 pregnancies with a live birth rate of 72%, abortion rate of 27%, and pre-term delivery rate of 12%. However, these women should be monitored closely in pregnancy to improve the pregnancy outcomes.[13]

In this patient, previous ultrasound reports were unavailable and, according to the informant, it was during this admission that this diagnosis was revealed which seems quite cynical.

In pregnancy, patients with a double uterus need special attention as premature birth and malpresentations are common. The caesarean section rate is very high (82% as reported by Heinonen). [14] A recent case in America reported a twin pregnancy that was carried to 34 weeks gestation and delivered through a caesarean section.[15]

Conclusion

A bicornuate uterus, the most common congenital uterine anomaly, though a rare condition, is associated with many gynaecological and reproductive morbidities and can impact a woman's reproductive capabilities. Pregnancies in a bicornuate uterus are usually considered high-risk and require extra monitoring because of their association with poor reproduction potential. The condition is associated with an increased rate of spontaneous abortion, though the miscarriage rate is lower with a bicornuate uterus than with a separate uterus. That is probably because the blood supply to the midline indentation is better. Premature labour, a breech presentation, and/or a retained or trapped placenta are also common complaints with a bicornuate uterus. Precise antenatal diagnosis is important in order to ensure appropriate management. It should be diagnosed before the pregnancy occurs or, at the latest before rupture occurs, and should be treated through immediate surgery,as boththe baby as well as the mother can be saved by doing emergency Caesarean Section. When a mullerian anomaly is identified, the woman should be counselled about reproductive prognosis, pregnancy outcomes, and evidence-based management.

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