

## An Incidental Case of Bicornuate Uterus in a Perimenopausal Patient

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### Abstract

Congenital uterine anomalies result from the abnormal formation, fusion and resorption of Mullerian ducts during fetal life. Here we report one such anomaly, a case of bicornuate uterus in a perimenopausal patient, with an obstetric history of two full term normal vaginal deliveries. This finding came to light when she presented to the Obstetrics and Gynaecology outpatient department (OPD) with complaints of abnormal uterine bleeding. Pregnancy in one of the horns of a bicornuate uterus is associated with high incidence of uterine rupture and other obstetric complications; however our patient had an uneventful obstetric history. Therefore we report this incidental case of bicornuate uterus and also a brief discussion about Mullerian duct anomalies and their reproductive outcomes.

**Keywords:** Mullerian duct anomalies (MDAs); Bicornuate uterus; Vaginal delivery

### Introduction

The incidence of Mullerian duct anomalies (MDA) is exactly not known and estimates have varied from <1% to 30%. Simon et al. [1] found the incidence of MDAs in fertile population to be 3.2%. Uterine malformations can be asymptomatic or may present with infertility, repeated first trimester abortions, fetal intrauterine growth retardation, fetal malposition, preterm labour and retained placenta [2].

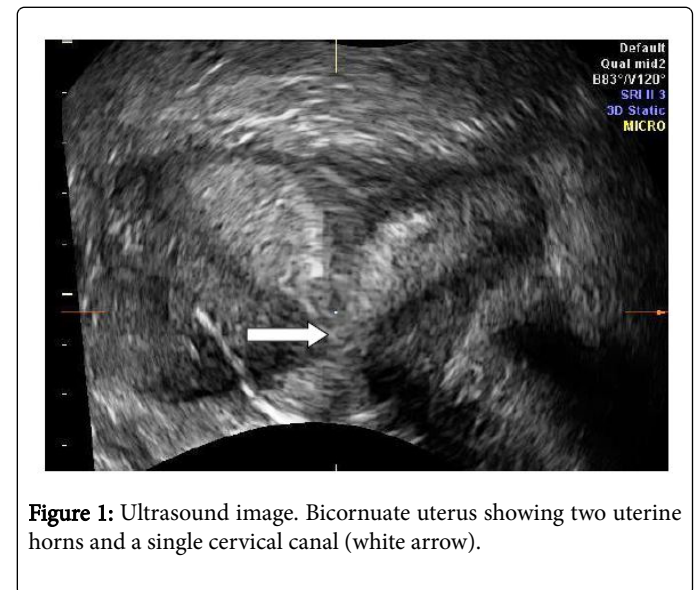
In one of the retrospective analysis of seventeen years duration, Green et al. found uterine anomalies in 0.25% of all normal deliveries [3]. In Jarcho estimated that MDAs occur once in 15,000 normal deliveries [4]. Cooper et al. [5] reported a 6.2% incidence of structural uterine anomalies in women undergoing elective hysteroscopic sterilization. Ashton D et al. [2] showed the incidence of MDAs to be 1.9% in a group of multiparous females undergoing elective tubectomy. Here we present a case of bicornuate uterus in a perimenopausal female, which was incidentally detected, seventeen years after her last child birth.

### Case Report

A 47 year old female presented to the OBG OPD with history of irregular menses for 1.5 months. Her previous cycles were regular, that is once in 28-30 days for 3-4 days. She had no history of dysmenorrhea or excessive bleeding. For the past 1.5 months her cycles were more frequent with excessive bleeding once in 15-18 days for 3-5 days. Patient had an active married life of twenty years and two normal full term vaginal deliveries at home. The last child birth was seventeen years ago. Both the off-springs are alive and healthy. She had not taken regular antenatal check-up during both her pregnancies and labour was conducted at home by local mid wife. Her general and systemic examinations were normal, except that she had pallor which might have been due to menorrhagia and polymenorrhea.

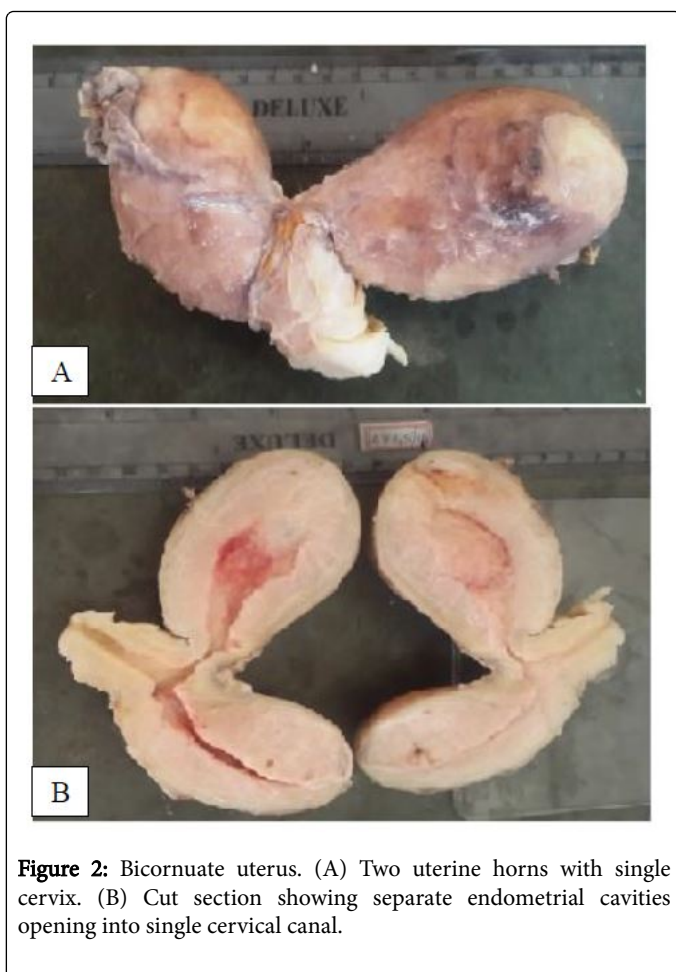
Ultrasound examination of abdomen and pelvis revealed two separate divergent uterine horns, uniformly separate endometrial

cavities without any evidence of communication. These features were suggestive of a "Bicornuate uterus" (Figure 1). Also noted was a cyst in upper pole of right kidney. Other abdominal and pelvic organs were within normal limits.



**Figure 1:** Ultrasound image. Bicornuate uterus showing two uterine horns and a single cervical canal (white arrow).

As the patient did not respond to hormone replacement therapy (progesterone therapy) and had completed her family, hysterectomy was done. Specimen was sent for histopathological examination. Grossly the uterus had two horns each measuring 8×3.5×2 cm and a single cervical canal measuring 2.5 cm in length (Figure 2A). Both the horns had separate endometrial cavities which opened into the common cervical canal and the horns were neither adherent nor was there any communication between the uterine cavities (Figure 2B). Myometrium showed few hemorrhagic foci suggestive of adenomyosis. On microscopic examination, cervix showed chronic cervicitis and endometrium in both the horns was in secretory phase. Myometrial sections from both the horns showed adenomyosis which might have been the cause of her deranged menstrual cycles.



**Figure 2:** Bicornuate uterus. (A) Two uterine horns with single cervix. (B) Cut section showing separate endometrial cavities opening into single cervical canal.

## Discussion

Female genital tract develops from the Mullerian ducts between 6th and 12th week of gestation [2]. Normal development of female genital tract comprises of three phases – organogenesis, fusion and septal resorption. Defects in any of these three phases results in Mullerian duct anomalies (MDA). American society of reproductive medicine, in 1989 has classified uterine anomalies into seven classes as follows: Class I- uterine agenesis, Class II- unicornuate uterus, Class III- didelphys uterus, Class IV- bicornuate uterus, Class V- septate uterus, Class VI- arcuate uterus and Class VII- DES related MDAs. Class I and II result from failure of organogenesis, class III & IV develop due to failure of fusion phase and failure of septal resorption causes class V & VI anomalies [6]. In our case the patient had bicornuate uterus which is classified as class IV uterine anomaly.

Congenital uterine anomalies are now thought to be more prevalent than earlier, basically because of increased physician awareness and improved diagnostic modalities [7,8]. However the true incidence of Mullerian duct anomalies in general population is difficult to determine because most of the data is derived from patients presenting with reproductive problems only and the data of those asymptomatic with normal reproductive outcome is unavailable [9].

Uterine anomalies have been quoted as a cause of infertility, recurrent pregnancy loss, prematurity and other obstetric complications. However in many individuals these MDAs are

asymptomatic, except in agenesis and duct obstructions which obviously cause infertility [1]. In our case also the patient remained asymptomatic during her reproductive period and had two normal full term vaginal deliveries. Unicornuate uterus results from normal differentiation of one of the Mullerian ducts, chances of having a live birth in these malformations is only 43.7%. Didelphys uterus results from failure of fusion of Mullerian ducts, they have a poor reproductive performance with term delivery rate of 20% only. Bicornuate uterus results due to partial fusion of two normally differentiated Mullerian ducts and failure of septal resorption causes septate uterus. Both these conditions have high rates of spontaneous abortions, i.e., >60% [1]. Another fatal complication of pregnancy in one of the horns of a bicornuate uterus is uterine rupture, which tends to occur in the late first trimester or second trimester of pregnancy. Rupture in such cases occurs because of inability of malformed uterus to expand as a normal uterus [10].

The cause of spontaneous abortions and uterine rupture in bicornuate and septate uterus is due to anatomic and histologic variations of myometrial structures. The muscle fibres are arranged irregularly and are “thin and weak”. Relative avascularity of the muscular elements has also been postulated as a cause of high incidence of uterine rupture and spontaneous abortions [8,9,11].

Bicornuate uterus though do not cause reduced fertility, are associated with aberrant outcomes throughout the course of pregnancy like miscarriage, preterm birth and fetal malposition. Thus fertility is not impaired in bicornuate uterus but gestational capacity is [8]. Like in our case; the patient did not have any problems in conception for both her pregnancies. Corrective surgery increases the probability of having a live born infant. In our case, the patient did not undergo any corrective surgery but still had two normal full term vaginal deliveries.

Besides problems during antenatal period, patients with bicornuate uterus tend to have excessive postpartum hemorrhage due to ineffectual uterine contractions, uterine inertia or atonia and sloughing of large decidual casts from the non-gravid horn of uterus [12]. Since the postpartum period following both the deliveries was uneventful in our patient, her uterine anomaly went undetected for a long period.

## Conclusion

Fusion defects of Mullerian ducts causing bicornuate uterus is not a rare entity. However vaginal delivery of term infant from a patient with such an anomaly is relatively uncommon. Thorough research regarding the genetics and pattern of inheritance of uterine anomalies is necessary for early detection and management of these anomalies. Our case is unique, since the condition went undetected for a long period and the patient’s obstetric history was uneventful unlike most of the cases where such anomalies present early in life with obstetric complications.

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