Live Term Pregnancy in One Horn of a Bicornuate Uterus

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ABSTRACT

The uterus and its appendages are a common site for congenital abnormalities although overall they are considered rare. One of the easily recognised and described mullerian duct anomalies is the bicornuate uterus. Although it is now believed that unlike septate uterus, bicornuate uterus is not associated with infertility, it is associated with adverse obstetric outcome. We present a case of live term pregnancy in one horn of a bicornuate uterus in a 22 year old P_0^{+2} lady with 5 years history of infertility. The bicornuate uterus was undiagnosed before delivery and the antenatal period was uneventful. She was delivered of a live 3.8 kg male baby after an emergency caesarean section. The post partum period was uneventful and the patient was discharged home on the 8th post operative day. The issues surrounding the management of this rare condition are discussed.

INTRODUCTION

The uterus and its appendages are a common site for congenital abnormalities although overall they are considered rare. Many types of abnormalities may occur because of the number of sites for potential error, the complex interaction necessary for the development of Mullerian derivatives and the duration of the complete process.[1] The incidence in the general population is difficult to estimate as only those that are found during infertility evaluation or those with adverse obstetric outcome are usually reported. The incidence of Mullerian duct abnormalities is thought to be around 0.4%.[2]

One of the easily recognised and described mullerian duct anomalies is bicornuate uterus. Although it is now believed that unlike septate uterus, bicornuate uterus is not associated with infertility, it is associated with adverse obstetric outcome. These include recurrent pregnancy loss, preterm birth and malpresentation.[3-5] On the other hand, surgical correction such as Strassman's metroplasty is associated with improved obstetric outcome including near 100% take home baby rate.

We present a hitherto undiagnosed case of bicornuate uterus (uterus bicornis unicollis) discovered at an emergency caesarean section. The preceding history of infertility is highlighted and the issues surrounding the management of this rare condition are discussed.

CASE REPORT

Mrs A C was a 22 year old petty trader who presented to us in February 2009 with 5 years history of infertility. She had been severally investigated and had 2 spontaneous complete miscarriages before presentation. She had a recurrent history of oligomenorrhoea usually lasting 50 to 70 days about once or twice a year, otherwise she had a cycle length of 31 days with 7 days flow.

On examination, we found a healthy looking young lady with no obvious abnormality. Investigations previously done before presentation showed hour glass appearance of the uterus and polycystic ovaries on ultrasound. Serum FSH was 8.8 iu/ml, LH 28.6 iu/ml, prolactin 16.9µg/l and Progesterone 8.8 ng/ml. She was scheduled for further evaluation including hysterosalpingography. However she was lost to follow up as she relocated to Lagos.

She represented in our facility on 27th June 2010 with 10 weeks amenorrhoea and intermittent spotting of blood per vaginam. An ultrasound confirmed a viable intrauterine pregnancy with no abnormalities. She subsequently booked for antenatal care and was very regular with her appointments. Apart from one episode of malaria, the antenatal period was essentially uneventful. An ultrasound scan done at 36 weeks gestation confirmed a viable singleton foetus in longitudnal lie and cephalic presentation. The placenta was posterior, mid uterine while liquor volume was adequate.

The patient continued with her antenatal visits until her presentation in spontaneous labour at 40 weeks gestation on 24th January 2011. On examination, she was having strong contractions, 3 in 10 minutes each lasting 40 seconds. The foetus was in longitudinal lie, cephalic presentation and right occipito-anterior position. The presenting part was 4/5 palpable per abdomen while the foetal heart beats were heard at 142 beats per minute, strong and regular. Vaginal examination showed a cervix that was 4cm dilated. After 2 further reviews 4 hours apart, the abdominal findings were the same with foetal heart rate of 148 beats per minute, while cervical dilatation stagnated at 6cm even after augmentation with oxytocin. The patient was counselled and booked for emergency caesarean section.

At caesarean section, we found a clean peritoneal cavity. The pregnancy was located in the right horn of a bicornuate uterus. (See fig 1). Each horn of the uterus had a fallopian tube and ovary attached to it with broad

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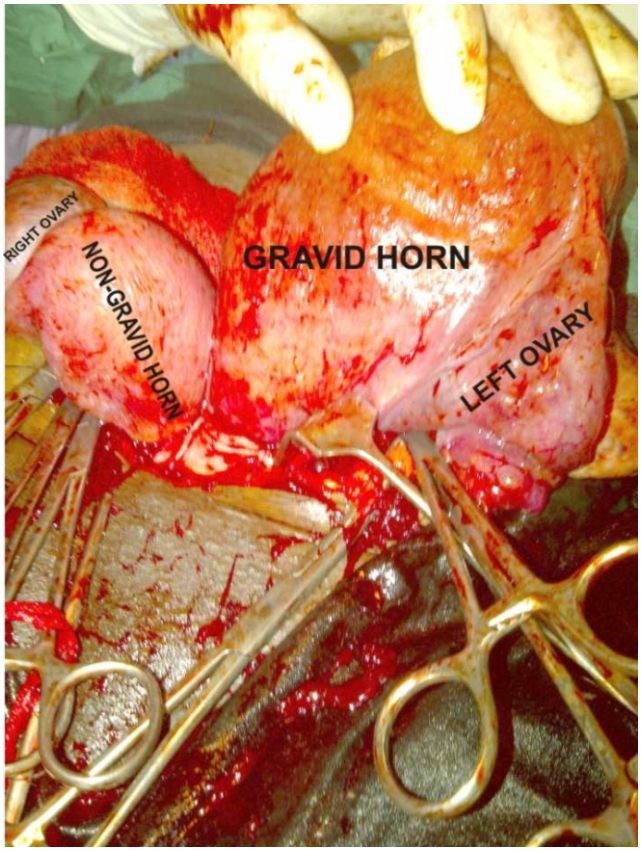
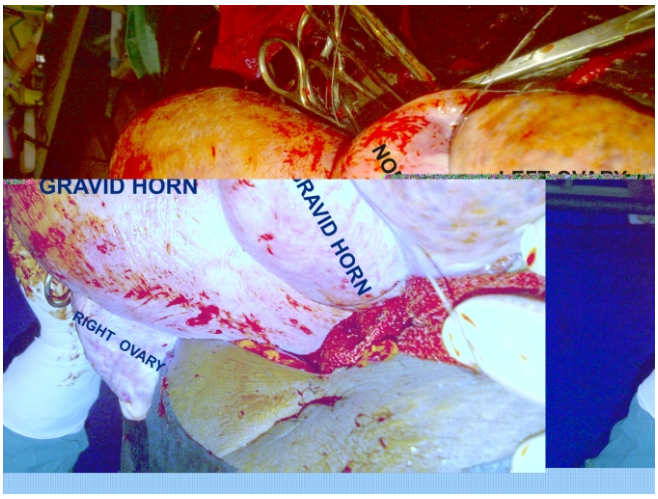
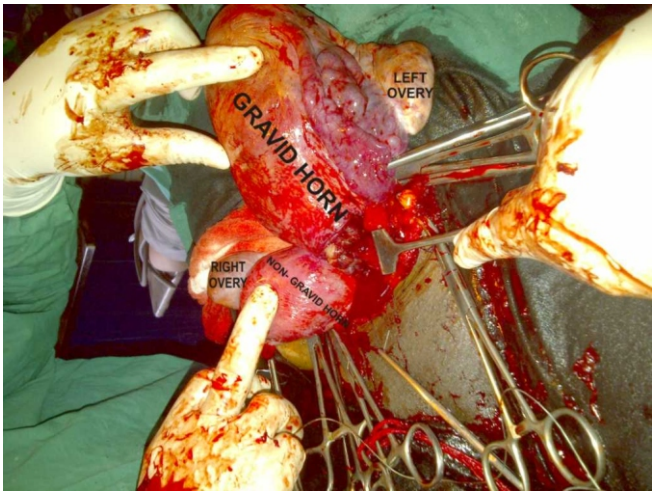
ligament on both sides, while both horns shared a common cervix and vagina. Both ovaries showed features of polycystic ovaries with the left more marked than the right. The fallopian tubes were normal. The urinary bladder was also normal. All the features above were found during the process of closing the lower segment incision after extraction of the baby.

After a lower segment incision, a live 3.4 kg male baby with Apgar scores of 8 and 10 in 1 and 5 minutes respectively was extracted. There was no demonstrable gross abnormality in the baby. A posterior and mid uterine placenta and membranes which weighed 0.7 kg were delivered complete by cord traction immediately after the delivery of the baby. The transverse incision on the pregnant horn and the anterior abdominal wall were closed in routine fashion.

The post operative period was essentially uneventful with the removal of alternate and remaining stitches on the 7th and 8th post operative days respectively. The patient was discharged on the 8th postoperative day after counselling. She was counselled on the nature of her problem, the need for early booking in her next pregnancy and the possible mode of delivery. The mother and her baby had a normal puerperal period and were well at the 6 weeks postnatal visit.







DISCUSSION

Developmental anomalies of the mullerian duct system represent some of the most fascinating disorders that occur in the human body. The mullerian ducts differentiate to give rise to the fallopian tubes, uterus, cervix and the upper part of the vagina. Bicornuate uterus which is one the more common mullerian duct anomalies is a developmental anomaly which result from errors in the complex process of genital development. In uterine septa and bicornuate uterus, there is partial or complete failure of canalisation or resorption of the midline septum between the 2 mullerian ducts.1 The incidence ranges from 0.1 to 3% but is thought to be around 0.4% on the average.1,2 Uterine abnormalities are usually unrecognized at birth and are unreported. They are usually discovered and reported during the reproductive years when any form of reproductive malfunctions occur.

The patient presented in this report shares most of the features associated with bicornuate uterus which is lack of symptoms or marker for the problem. Up to the time of her operative delivery, the abnormality was not clearly demonstrated. The earlier investigations she had before presentation were targeted at her irregular

menstruation. She got married at 17 years and presented to us with 5 years history of infertility within which period she had 2 miscarriages. In line with generally accepted knowledge, she had normal female phenotype with proper development of secondary sexual characteristics. Mullerian duct anomalies are generally associated with functioning ovaries and age appropriate external genitalia.

Bicornuate uterus is best diagnosed by hysterosalpingography or laparoscopy. However it may also be picked up by ultrasonography which is a less sensitive method of diagnosis. The case presented did not have the first two while ultrasonography described an uterus with hour glass appearance. It is important that bicornuate uterus is distinguished from septate uterus as the reproductive performance and obstetric outcome differ. Laparoscopy and Magnetic Resonance Imaging (MRI) are better tools for distinguishing the two.

Although there was 5 years history of infertility, it seems to have been secondary to the polycystic ovarian syndrome (PCOS) for which she had been investigated. When there is isolated bicornuate uterus without any other anomaly in the reproductive system, there is no association with infertility.[6] The 2 early miscarriages suffered by the patient before presentation may be attributed to the PCOS or other factors and not the bicornuate uterus. Whereas bicornuate uterus is not associated with early pregnancy loss, it is associated with late pregnancy loss which may be recurrent3 and preterm labour or birth.[4,7]

The course of pregnancy in the case presented was uneventful as wont to happen in most cases although as described above, some cases may end up with premature labour. The ultrasound scans done in our facility did not pick up the bicornuate uterus as there was no index of suspicion. The pregnancy was carried to term and she presented in spontaneous labour. Although malpresentation especially breech presentation is commoner in bicornuate uterus,[5] the case presented was in cephalic presentation and right occipito anterior position.

There are many unique developments that have been associated with bicornuate uterus. These include twin pregnancy in one horn of a bicornuate uterus although the pregnancy ended at 22 weeks gestation.[8] There have also been reports of rupture of one horn of bicornuate uterus either early in pregnancy[9] or at term.[10] A successful delivery of twin pregnancy in a bicornuate uterus by bilateral caesarean section has been reported.[11]

Given the variants and peculiarities associated with bicornuate uterus, the pattern of labour and delivery will certainly vary. Majority of patients are delivered by caesarean section[5] especially if the diagnosis had been made before pregnancy/labour or if corrective surgery had been carried out in the patient. Caesarean section is usually carried out due to associated malpresentation and the unpredictable nature of the course of labour. In the case presented, the diagnosis was not known. Caesarean section was embarked upon for the purely obstetric reason of poor progress in labour secondary to stasis in cervical dilatation. At surgery, each horn had a fallopian tube, ovary and broad ligament attached. The co-existing polycystic ovaries were thought to be independent findings as the ovaries do not arise from the Mullerian apparatus. The common cervix and vagina shared by the two horns suggest that each horn can house a pregnancy for a reasonable length of time.

The extraction of a vigorous physically normal live male baby with complete placenta and membranes was not remarkable. It is rather interesting that one horn could carry a 3.4 kg baby to term complete with 0.7 kg placenta and membranes. There are reports of rupture of the horns in pregnancy or labour in some cases.[9,10] The weight of the products of conception and the poor distensibility of a horn of a bicornuate uterus may be contributory. The post operative period was uneventful and followed the pattern of other operative deliveries.

Bicornuate uterus is rare and often discovered in the process of investigating infertility or adverse obstetric outcome. Pregnancies are usually considered high risk and require extra monitoring due to the association with poor reproductive potential. Surgeries such as Strassman's metroplasty are reserved for those with recurrent pregnancy loss or preterm birth.[12,13] After Strassman's metroplasty, about 88 % of patients achieve pregnancy while caesarean section is advocated for all deliveries. The take home baby rate then approaches 100 %.[13]

We have presented a case hitherto undiagnosed bicornuate uterus which was only discovered in the course of an emergency caesarean section. Although it is fraught with reproductive and obstetric problems, our patient had a normal course of pregnancy with delivery by caesarean section at term. Women with recurrent pregnancy losses should be evaluated for Mullerian duct anomalies.

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