Case Report:

Rupture of the gravid horn of bicornuate uterus following induction of labour

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ABSTRACT

We report a case of a Primi gravida with preeclampsia and intrauterine foetal death. As she failed to respond to induction of labour she was taken up for caesarian section. On opening the abdomen, uterus was bicornuate with fundal rupture of left horn. Dead foetus presenting as breech was found in the left horn. After delivering the foetus and placenta the rent was sutured in two layers. In this case, induction of labour in patient with undiagnosed uterine anomaly has led to rupture. This case stresses the importance of early ultrasound in diagnosing uterine anomalies.

Key words: *Bicornuate uterus, Rupture uterus, Failed induction of labour, Ultrasound*

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INTRODUCTION

The occurrence of all types of Mullerian duct abnormalities is estimated to be around 0.4 %.[1] A bicornuate uterus is estimated to occur in 0.1%-0.5% of women. Of all the Mullerian duct anomalies, the incidence of bicornuate uterus is 25%. Bicornuate uteri, which are uncommon in the unselected population, are significantly more prevalent in women with infertility and those with miscarriage, particularly if these coexist.[2]

Bicornuate uterus is caused by incomplete fusion of bilateral Mullerian system during embryogenesis. Helpful techniques to investigate uterine anomalies include transvaginal ultrasound, sonohysterography, hysterosalpingography, magnetic resonance imaging (MRI) and hysteroscopy. Recently 3D-ultrasonography has been advocated as an excellent method to evaluate these malformations.[3] In developing countries, routine ultrasonography may not be conducted in all pregnant women due to financial constraints. Most of the uterine anomalies are first recognized during pregnancy. This is a rare case report of rupture of bicornuate uterus following induction of labor. This case underlines the importance of antenatal diagnosis of congenital malformations and the need to keep these conditions in mind when there is no response to induction of labour.

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CASE REPORT

A Primigravida with unknown dates came to Government maternity hospital, Tirupati with complaints of absent foetal movements for the past two days. She was married one year ago. Her menstrual cycles were regular. Last menstrual period was not known. She had irregular antenatal checkups at primary health centre. Physical examination revealed blood pressure 150/100mm Hg and pitting pedal oedema. Obstetric examination findings were as follows. Per-abdominal examination revealed term uterus, breech in lower pole; foetal heart sounds were not heard. Per vaginal examination revealed uneffaced cervix, os was closed. Presenting part was breech that was felt high-up. Abdominal and pelvic ultrasonography revealed a dead foetus in breech presentation. Her haemoglobin was 8.6 gm/dL, Bleeding time and clotting time were 2' 30" and 3' 30"respectively, random blood glucose 94 mg/dL, urine did not reveal albumin and sugar. Her blood group was AB Rh positive. Blood urea was 20 mg/dL and serum creatinine 0.8mg/dL. Platelet count was 2 lakh/mm^3.

In view of foetal death, after obtaining an informed consent, labour was induced with extra amniotic Foley's catheter. This was followed by administration of prostaglandin E2 (PGE2), intracervical

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gel and oxytocin drip. As there was no response to the above measures and the patient had imminent symptoms of eclampsia and abdominal discomfort, she was taken up for emergency caesarean section.

Abdomen was opened by suprapubic transverse incision. Two hundred milliliters of blood was found in the peritoneal cavity. Uterus was bicornuate with two well developed horns (Figure 1). As the rent could not be visualized, incision was extended and the uterus was delivered out. A transverse rent of 8 cm was seen in the fundal region of the left horn. The foetus was found in the left horn in breech presentation. A dead foetus weighing 2.3kg and placenta were delivered through the rent (Figure 2). Both horns were communicating and the cervix was single. The rent was closed in two layers. Peritoneal lavage was given. Two units of blood was transfused. Postoperative period was uneventful. The patient was discharged on the 8th postoperative day. She came for postoperative checkup after two weeks. Ultrasound abdomen was done by the radiologist. Both kidneys were found to be normal. No further investigations were advised by the radiologist. Her blood pressure was normal. She was counseled about her uterine anomaly and asked to come for antenatal checkup as soon as she conceives.

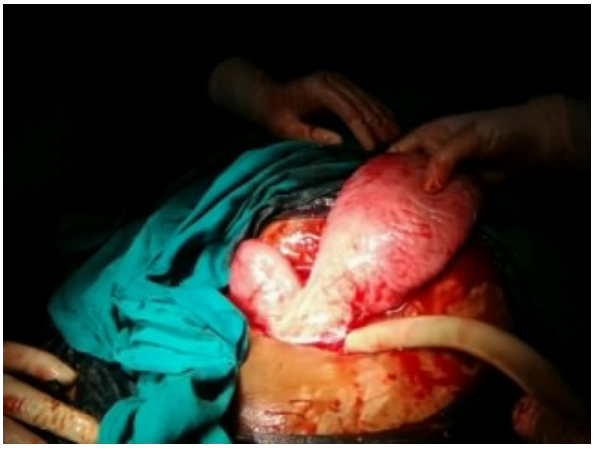

Figure 1: Operative photograph showing bicornuate uterus

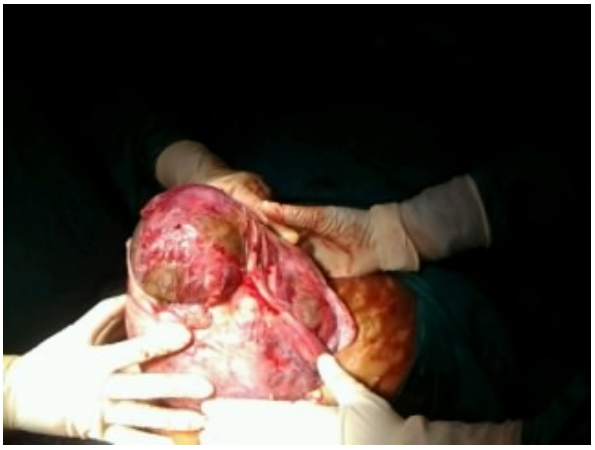

Figure 2: Operative photograph of the rent in the fundus of the left horn showing the foetal head

DISCUSSION

Bicornuate uterus (*bicornis unicollis*) represents a double uterus with a single cervix and vagina resulting from the failure of the embryo genetic fusion of part of the Mullerian ducts. Each uterus has a single horn linked to the ipsilateral fallopian tube that faces its ovary. Pregnant uterine anomalies may be difficult to diagnose only by two-dimensional (2-D) ultrasonography.[4] In resource poor countries, employing sophisticated diagnostic modalities may not be feasible.[5] In the present case the cause of intrauterine foetal death was preeclampsia, induction of labor has led to rupture of the left horn of the uterus. Though there was no proteinuria, the patient had imminent symptoms of eclampsia and foetal death. Proteinuria is the surrogate objective marker that defines the system wide endothelial leak, which characterizes the pre eclampsia syndrome. Even so, when blood pressure increases appreciably, it is dangerous to both mother and fetus to ignore this rise because proteinuria has not yet developed. As Chesley emphasized, 10 percent of eclamptic seizures develop before overt proteinuria is identified.[6]

A similar case was reported from Bangalore, India where a primi gravida with 30 weeks gestation with eclampsia was induced with misoprostol and had developed rupture of the uterus.[7] Rupture in such cases occurs because of inability of malformed uterus to expand as a normal uterus.[8] Uterine rupture may occur due to the weak or deficient musculature of the anomalous uterus. Rupture of gravid uterus in a primigravida is rare and is generally associated with uterine anoma-

lies. The present case was a rare case of silent rupture. The site of rupture in the present case is the fundus of the uterus, which is also very rare. Other causes of fundal rupture are previous dilation and curettage,[9] fundal pressure during the second stage of labor[10] and placenta percreta.[11] The incidence of rupture of an unscarred uterus is between 1 in 8000 and 1 in 15000.[12]

In some cases, transvaginal ultrasound and computed tomography failed to diagnose the condition and it was diagnosed only at emergency laparotomy for haemoperitonium.[13] As these cases also have associated urinary tract abnormalities, there is a need for complete post partum evaluation of the genito-urinary tract.

Uterine abnormalities though rare, are associated with adverse reproductive outcomes, the most severe of them being rupture of the gravid uterus. Whenever there is no response to induction of labor, these conditions have to be thought of. A high degree of suspicion is necessary in cases of malpresentation especially in nullipara. There is a need for capacity building in diagnosing these anomalies.

REFERENCES

1. Nahum GG. Uterine anomalies. How common are they, and what is their distribution among subtypes? J Reprod Med 1998;43:877-87.
2. Chan YY, Jayaprakasan K, Zamora J, Thornton JG, Raine-Fenning N, Coomarasamy A. The prevalence of congenital uterine anomalies in unselected and high-risk populations: a systematic review. Hum Reprod Update 2011;17:761-71.
3 Salim R, Jurkovic D. Assessing congenital uterine anomalies: the role of three-dimensional ultrasonography. Best Pract Res Clin Obstet Gynaecol 2004;18:29-36.
4. Hua M, Odibo AO, Longman RE, Macones GA, Roehl KA, Cahill AG. Congenital uterine anomalies and adverse pregnancy outcomes. Am J Obstet Gynecol 2011;205:558.e1-5.
5. Nwosu BO, Ugboaja JO, Obi-Nwosu A. Spontaneous rupture of gravid horn of bicornuate uterus at term - a case report. Niger Med J 2010;51:184-5.
6. Cunningham F, Leveno K , Bloom S , Hauth J , Rouse D, Spong C. editions Williams Obstetrics. 23rd edition; p.708.
7. Jayaprakash S, Muralidhar L, Sampathkumar G, Saxsena R. Rupture of bicornuate uterus. BMJ Case Rep 2011; 28:2011.
8. Kore S, Pandole A, Akolekar R, Vaidya N, Ambiye VR. Rupture of left horn of bicornuate uterus at twenty weeks of gestation. J Postgrad Med 2000;46:39-40.
9. Sobande AA, Al-Sunaidi MI, Al-Ghamdi JM, Archibong EI. Fundal hiatus discovered in a presumably unscarred uterus at emergency cesarean: an old perforation or rupture? Acta Obstet Gynecol Scand 2002;81:673-5.
10. Kurdoglu M, Kolusari A, Yildizhan R, Adali E, Sahin HG. Delayed diagnosis of an atypical rupture of an unscarred uterus due to assisted fundal pressure: a case report. Cases J 2009; 2:7966.
11. Jang DG, Lee GSR, Yoon JH, Lee SJ. Placenta percreta-induced uterine rupture diagnosed by laparoscopy in the first trimester. Int J Med Sci 2011;8:424-7.
12. Pan HS, Huang LW, Hwang JL, Lee CY, Tsai YL, Cheng WC. Uterine rupture in an unscarred uterus after application of fundal pressure. A case report. J Reprod Med 2002;47:1044-6.
13. Sant CL, Andersen PE.Misdiagnosed uterine rupture of an advanced cornual pregnancy. Case Reports in Radiology. Article ID 289103. Available at URL: http://www.hindawi.com/crim/radiology/2012/289103/. Accessed on February 15, 2013.