Abstract:
Pregnancy in the non communicating rudimentary horn of bicornuate uterus is extremely rare and terminates by rupture in the end of first trimester or second trimester of the pregnancy. Thus excision of rudimentary horn is recommended whenever diagnosed. Here is a case of ruptured ectopic in rudimentary horn of bicornuate uterus in a 23 year old women who presented to us in a state of shock with history of 3 months amenorrhea and abdominal pain for 3 hours. She had delivered a full term male baby one year back, by normal vaginal delivery and her uterine abnormality was not previously diagnosed. Since she presented with shock she was immediately taken up for surgery after confirming ruptured ectopic by culdocentesis and bedside ultrasonogram. Peroperatively she was diagnosed as a case of bicornuate uterus with ruptured ectopic pregnancy in the non-communicating rudimentary horn on the right side.

She underwent excision of the rudimentary horn and right salpingectomy which was done to prevent further ectopic by the mechanism of transperitoneal migration. She was discharged after 10 days with advice for contraception with hormonal or barrier methods for one year.

Keyword: bicornuate uterus, non-communicating rudimentary horn, ruptured ectopic, salpingectomy

INTRODUCTION
Incidence of congenital uterine anomalies is 0.5%. Bicornuate uterus accounts for 39% of uterine anomalies. Bicornuate uterus is caused by incomplete lateral fusion of the mullerian ducts. There are two types of bicornuate uterus, complete and incomplete. Complete variety is uterus bicornis bicollis where the vagina is single, but the two cornua of the uterus remains separate, and two completeervices project in to the vagina. Occasionally a partial vaginal septum may be present.
Incomplete variety is uterus bicornis unicollis where two cornua of the uterus remains separate in the region of body of the uterus, but there is a single cervix and single vagina. The horns may be equal, or unequal with rudimentary horn on one side. The rudimentary horn may be communicating or non-communicating with the developed horn. A case of ruptured ectopic pregnancy in the non-communicating rudimentary horn of bicornuate uterus unicollis is presented here.

**CASE REPORT:**

A 23 year old multigravida, G2P1L1 with h/o 3 months of amenorrhoea was admitted with c/o severe lower abdominal pain since 3 hours. There was no h/o bleeding per vagina and vomiting. Her menstrual cycles were regular and the last menstrual period was on 5.4.11 (gestational age-13 weeks). H/O spasmodic dysmenorrhea was present. No history of menorrhagia. Married since 3 years, she had one full term normal vaginal delivery a year back. She lactated her baby for six months. She was not on any method of contraception and had resumed menstrual cycles 6 months after delivery. She had two cycles after that, before becoming amenorrheic. Pregnancy had been confirmed by urine pregnancy test at 45 days of amenorrhoea, but dating ultrasonogram was not done. There was no significant past medical or surgical history. On examination, the patient was conscious, oriented, afebrile, pale, not dyspnoeic or tachypnoeic. Pulse rate was 126/min and BP was 80/60mmHg. No abnormality was detected in the cardiovascular system and respiratory system. On per abdominal examination, abdomen was distended, guarding, rigidity and tenderness were present. On per vaginal examination cervix was pointing posteriorly and exact size of uterus could not be made out due to the guarding and rigidity of the abdomen. Cervical os was closed and there was no bleeding per vagina. Movement of cervix was painful. Fullness was present in both fornices. Culdocentesis was positive for unclotted blood.

Bed side ultrasonogram showed a single fetus in the right adnexal region, with crown rump length measuring 6.5 cm with gestational age corresponding to 12 weeks and 5 days with absent fetal cardiac activity. The uterine cavity was empty with irregularly thickened endometrium. Massive free fluid was found in the peritoneal cavity. As the patient was hemodynamically unstable, immediate resuscitation with intravenous fluids was carried out and followed by blood transfusion. Simultaneously, the patient was taken up for emergency laparotomy.

**Per operative findings:**

There was 900ml of hemoperitoneum and 450 gms of blood clots found in the peritoneal cavity. A fresh dead male fetus weighing 40 grams with intact amniotic sac was found lying free in the peritoneal cavity, having been extruded through the tear in the upper right horn of uterus bicornis unicollis to which placenta was still attached (as shown in Fig.1). The round ligament was lateral to the placental site. Left uterine horn was slightly enlarged. Both tubes and ovaries were normal (as shown in Fig.2 & 3). Left horn of uterus was normal. A blunt probe was inserted and the rudimentary horn found to be non-communicating with uterine cavity. Excision of the ruptured rudimentary horn with right salpingectomy was done. Three units of whole blood transfusion were given.
Post operative period:
Post operative period was uneventful. Suture removal done on 7th post operative day. The patient was discharged on the tenth postoperative day with advice to follow hormonal or barrier method of contraception for 1 year.

DISCUSSION:
Ruptured ectopic is a life threatening problem. In our case the diagnosis was ruptured ectopic pregnancy in the non-communicating rudimentary horn of bicornuate uterus. A rudimentary horn results from an arrest in the development of one of the mullerian ducts with inappropriate fusion with the contralateral side. Incidence of pregnancy in rudimentary horn is 1 in 1,00,000 to 1 in 1,40,000\(^1\). 90% of rudimentary uterine horn is non-communicating to main uterine cavity\(^2\). Pregnancy in our case is thought to result from transperitoneal migration of sperm or zygote from the opposite side. This suggestion is based on the finding of corpus luteum in contralateral ovary in 10% of cases\(^2\).

Unruptured ectopic pregnancy in the rudimentary horn

In most cases of the pregnancy in the rudimentary horn, the pregnancy lasts longer than tubal pregnancy because of the variable musculature of the horn, with 80-90% of cases rupturing by mid trimester and 10% going to term with 2% fetal salvage rate\(^3\). Patients with unruptured ectopic pregnancy in non-communicating rudimentary horn of bicornuate uterus, usually have abdominal pain at the end of first trimester or beginning of second trimester. Diagnosis is only by
suspicion. Bimanual palpation of a mass extending outside the uterine angle i.e., Barrt de la failles” sign or displacement of fundus to contralateral side with rotation of uterus and elevation of affected horn (Ruge Simon Syndrome) and deviation of uterus to one side with adnexal mass in pregnancy may indicate rudimentary horn[4]. Ultrasonography can help in the prerupture diagnosis of rudimentary horn pregnancy. The criteria for sonographic diagnosis of rudimentary horn pregnancy are pseudo pattern of asymmetrical bicornuate uterus, absent visual continuity tissue surrounding the gestational sac and the uterine cervix, and the presence of myometrial tissue surrounding the gestational sac[5]. Sensitivity of ultrasound is 26% in diagnosis of unruptured rudimentary horn pregnancy, and decreases with advancing gestational age[6]. Laparoscopy is most accurate in diagnosis. Literatures show low preclinical 8% and preoperative detection rate 29%[6] only. Once diagnosis is strongly suspected, laparoscopy or laparotomy must be done and excision of rudimentary horn advised[7].

Ruptured rudimentary uterine horn pregnancy:
In 70-80% cases rupture usually occurs in the second trimester before 20 weeks in the non-communicating horn as in our case. In the communicating horn, pregnancy was reported till term in horn because the fetus has space to grow. Rupture usually occurs because of variable thickness of rudimentary musculature and poor distensibility of myometrium to expand as a normal uterus. In our case, the rupture occurred at 13 weeks of pregnancy in the non-communicating rudimentary horn of uterus bicornis unicollis which was diagnosed by single cervix, single vagina, two separate cornua and ruptured non-communicating rudimentary horn. Treatment usually involved is the removal of the ruptured horn with ipsilateral salpingectomy. In our case, excision of the ruptured rudimentary horn with ipsilateral salpingectomy was done to prevent the future chance of ectopic by the mechanism of transperitoneal migration of sperm or zygote from opposite side. In non-pregnant women: Bicornuate uterus with non-communicating rudimentary horn usually presents with dysmenorrhea and endometriosis due to retrograde menstruation. Hysterosalpingography, hysteroscopy, three dimensional ultrasonogram and MRI can diagnose uterine anomalies. If detected, excision of rudimentary horn with ipsilateral salpingectomy should be done. This will not affect the future reproduction[8].

Post surgical care
Since excision involves the upper portion of uterus it is better to avoid pregnancy for 1 year by using hormonal or barrier method of contraception[9]. In the next pregnancy since the chance of rupture uterus at the scar site is high ,elective cesarean section should be done before the patient goes into labour.

Other pregnancy complications in bicornuate uterus:
Habitual abortion due to myometrial weakness or implantation on the septum, preterm labour , persistent malpresentations such as transverse lie , oblique lie and breech presentations due to abnormal shape of the uterine cavity. Several studies suggest that women with bicornuate uterus can expect a reasonable success in delivering live child about 60%[6]. In our patient, in the previous successful term vaginal delivery the conception probably would have occurred in the well developed contralateral communicating horn. Evaluation of renal system must be advised because of high incidence of co-existing urological anomalies.
in bicornuate uterus\cite{10}. In our patient, Ultrasonogram (KUB) kidney, urinary tract and bladder and intra venous pyelogram was done 1 month after discharge and was found to be normal.

**SUMMARY:**

Pregnancy in the rudimentary horn is a very rare type of ectopic pregnancy.

In bicornuate uterus depending whether the horn is communicating or non communicating the time of rupture of the ectopic pregnancy varies. It is usually before 20 weeks in the non communicating horn and can extend upto the third trimester in the communicating type.

The diagnosis should be done before conception or at least before rupture and excision of rudimentary horn advised to prevent catastrophic intraperitoneal hemorrhage and maternal mortality.

If rupture occurs, it should be managed as any other ectopic rupture. However the horn should be excised along with the ipsilateral salpinx to prevent recurrence of ectopic pregnancy.

Patients who have undergone excision of the horn, must be advised against pregnancy for the next 1 year and must be given barrier or hormonal methods of contraception to prevent uterine rupture or abnormal implantation.

In the next pregnancy, these patients should be monitored carefully and should undergo elective LSCS before they go to labour to prevent the chances of uterine rupture.

All patients with bicornuate uterus must be screened to rule out associated urological abnormalities.

**REFERENCES:**


5 Williams gynaecolgy, anatomic disorders, pg-418


