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A Case of Successful Unilateral Singleton Pregnancy in Incidentally Detected Uterine Didelphys

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Author's contribution

This whole work was carried out by the author PY.

Case Study

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ABSTRACT

Uterine didelphys or duplication of uterus is a rare congenital anomaly, which constitutes approximately 5% of mullerian duct anomalies. There is failure of the fusion of mullerian ducts resulting in the duplication of uterus and cervix. We report a case of uterine didelphys, which was incidentally detected in a 23 years old G2P1 patient who came for ultrasound with complaints of bleeding per vaginum. MRI was done and uterine didelphys was confirmed. Six months later that patient came again with 6 weeks pregnancy in the right uterine body. We did all antenatal follow up scans in this patient till 36 weeks. Lower segment cesarean section (LSCS) was done at 38 weeks and patient delivered a normal baby of 2.9-kilogram weight.

Keywords: Uterine didelphys; mullerian duct anomalies; pregnancy; mullerian duct; double uterus.

1. INTRODUCTION

Fusion of two mullerian ducts occurs between 6th and 11th weeks of gestation to form the uterus, fallopian tubes, cervix and proximal 2/3rd of vagina [1]. Disruption of mullerian duct development during this period can result in the mullerian duct anomaly [2]. Diagnosis of mullerian duct anomalies is clinically very important because of high associated risk of

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infertility, miscarriage, endometriosis and preterm deliveries [3]. Uterine didelphys constitutes approximately 5% of mullerian duct anomalies [4]. It results from complete failure of fusion of mullerian ducts results in two separate hemi uteri, cervix and proximal vagina (in 75% cases) [4]. In the absence of vaginal obstruction uterine didelphys is usually asymptomatic [1].

2. CASE REPORT

A 23 years old G2P1 female had come with the complaints of abdominal pain and bleeding per vaginum. There was the history of 1 ½ month of amenorrhea prior to bleeding per vaginum. Ultrasound abdomen and pelvis was done. On Ultrasound we detected duplication of the uterine body, endometrial cavity and the cervix Figs 1c and d. Both the uterine bodies were not of equal size. The right uterus was larger in the size than the left (Figs 1a and b). Endometrium of both uteri were normal in thickness. Both ovaries were normal. The kidneys, ureters and bladder were normal. We advised MRI for further evaluation. MRI findings have confirmed our USG findings. There were two separate well-defined uteri with two separate cervices (Figs. 2a and 2b). The Right uterus was larger (Fig. 2c) than the left uterus (Fig. 2d). A longitudinal septum was seen in the proximal part of vagina Fig. 2b.

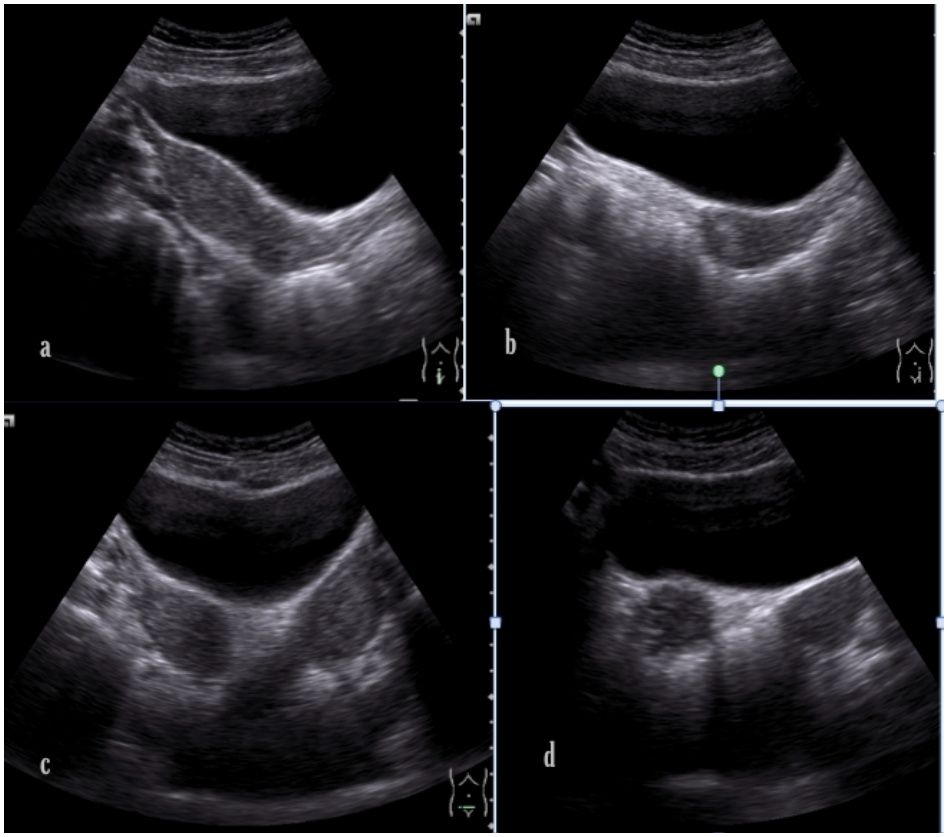

Fig. 1. Ultrasound images of 23 years old female who came with pain in abdomen and bleeding per vaginum. Fig. 1 a shows large right uterus and b shows small left uterus in longitudinal plane. Figs. 1c and 1d show two separate uterine bodies and cervices in transverse plane

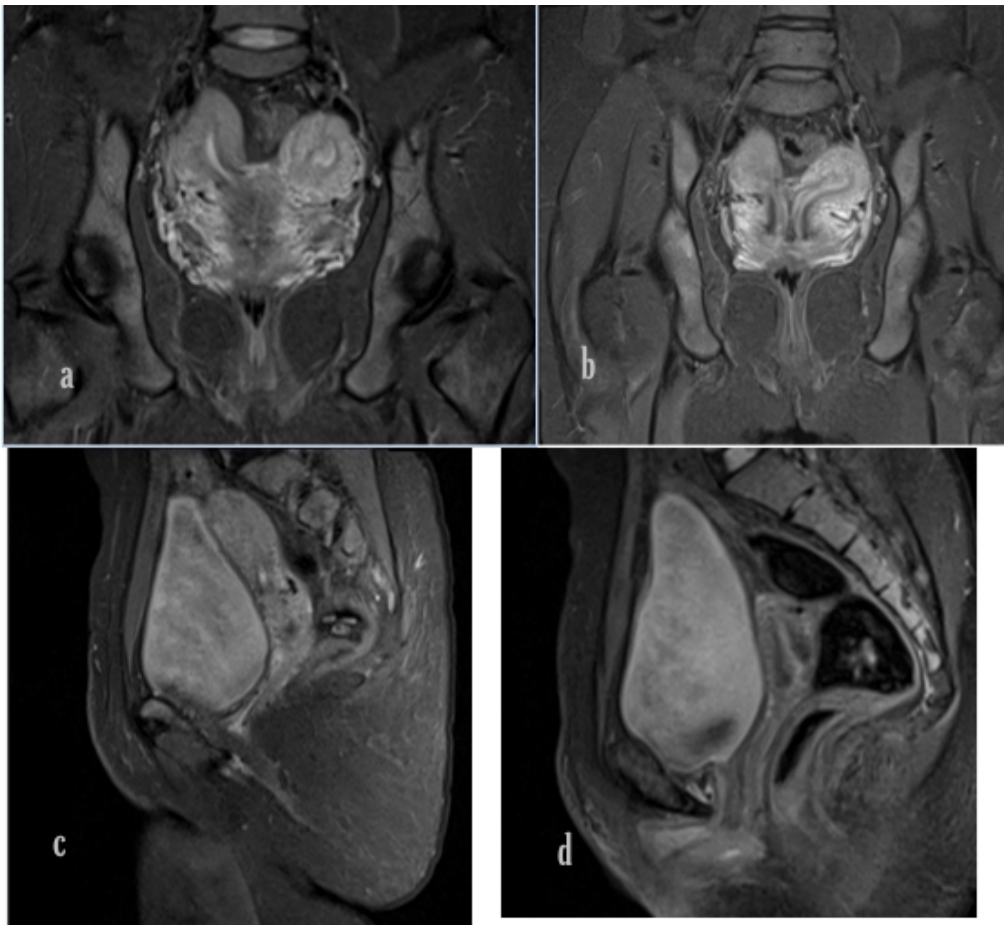

Fig. 2. MRI of 23 years old female who came with pain in abdomen and bleeding per vagina. Coronal T2WI (a and b) and Sagittal T2WI (c and d) show large right uterus and small left uterus ,two separate uterine bodies and cervices with two separate endometria. Thin vaginal septum was also seen (b).

The same patient again came for ultrasound after 6months with history of 6 weeks amenorrhea. USG was done and detected single live gestational sac in right uterus. Fetal pole and yolk sac were seen (Fig. 3). CRL was corresponding to 6 weeks of pregnancy. Decidual reaction was also seen in the left uterus (Fig. 3a.). We did antenatal scan again at 13 weeks, which showed normal fetus and normal heart rate. The left uterus also showed enlargement as compare to non-pregnant state (Fig. 4).

Next antenatal scan was done at 22 weeks, which revealed normal fetus. Placenta was right posterolateral in location and amniotic fluid was adequate. No gross congenital anomaly was detected. Left uterus also showed enlargement and increased vascularity as the right (Fig. 5). The patient was having more fullness on right side of abdomen and pelvis and felt pain in right hypochondrium during third trimester. Cerclage was done at 22 weeks to prevent the risk of premature delivery.

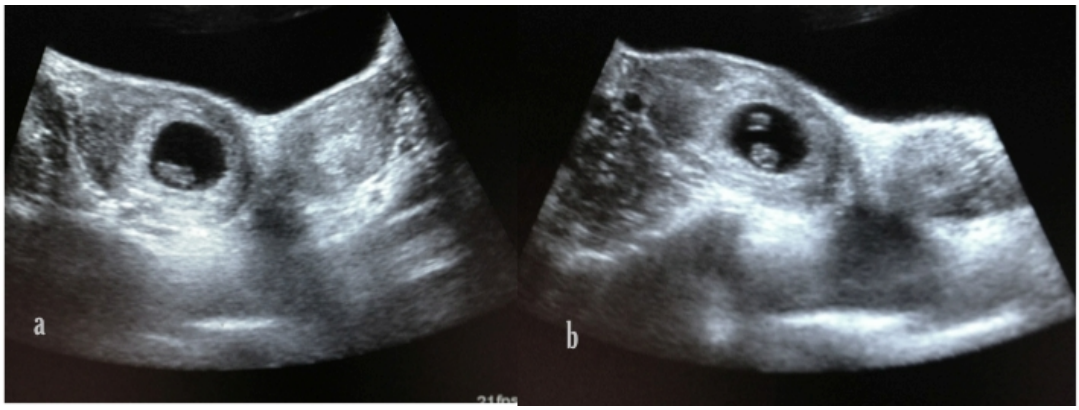

Fig. 3. Ultrasound images of 23 years old female with uterine didelphys who came with 6 weeks amenorrhea. Single intrauterine gestational sac was seen in right uterine body. Fetal pole and yolk sac was seen

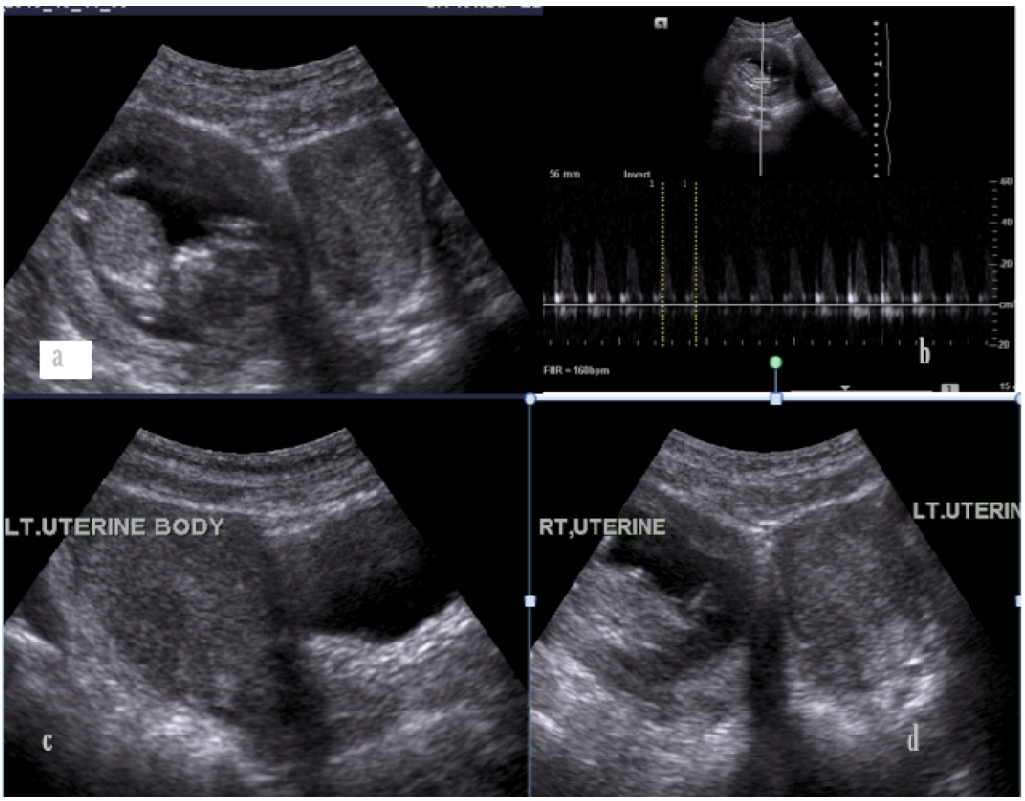

Fig. 4. Antenatal Ultrasound images of 23 years old female with uterine didelphys at 13 weeks. Left uterus also shows enlargement as compare to non-pregnant state.

Antenatal scan at 36 weeks showed normal growth of fetus with fetal weight of approx. 2546 Grams (Fig. 6). There was gross enlargement of left uterus as compare to non-pregnant state and now it measures approximately 13cm (Craniocaudal) x 6.4 cm (transverse) x

5.4cm (Anteroposterior) (Figs. 7a and b). There was increased blood flow in left uterus on Doppler study Figs. 7c and d. Cervical length was normal. LSCS was done at 38 weeks and patient delivered a normal baby boy of 2.9 kg weight.

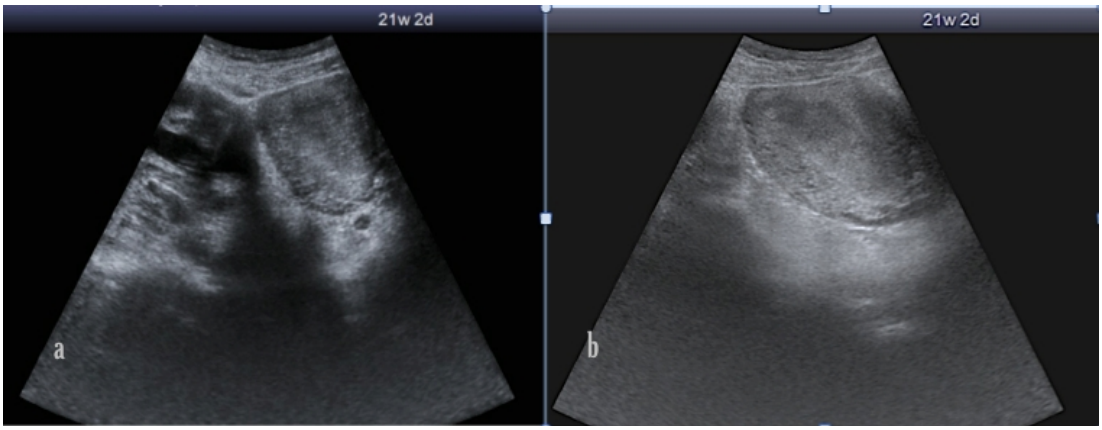

Fig. 5. Antenatal Ultrasound images of 23 years old female with uterine didelphys at 21 weeks 2days.Left uterus shows enlargement as compare to previous antenatal scan at 13 weeks

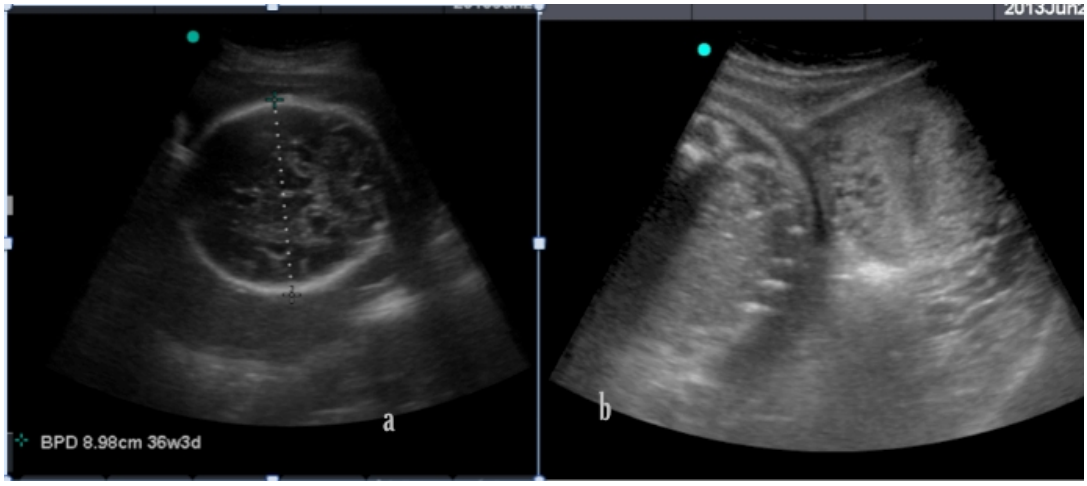

Fig. 6. Antenatal Ultrasound images of 23 years old female with uterine didelphys at 36 weeks 3days.Fetal growth parameters are normal

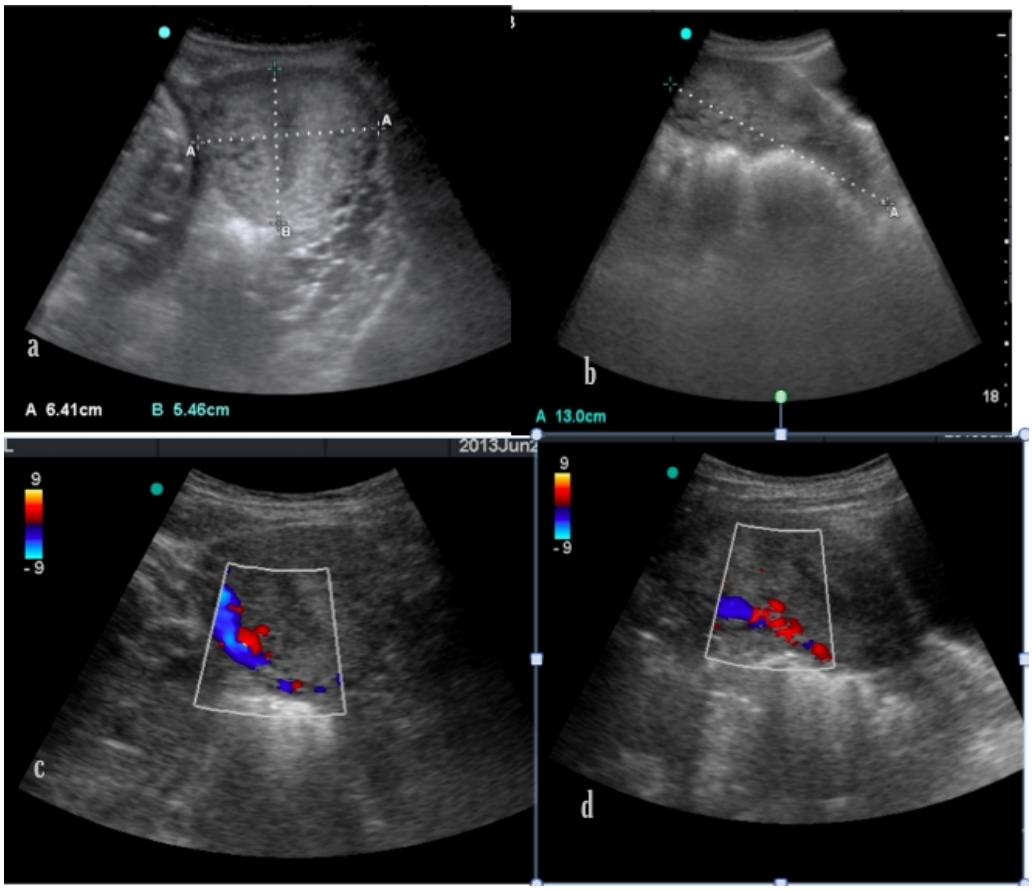

Fig. 7. Antenatal Ultrasound images of 23 years old female with uterine didelphys at 36 weeks 3days.Gross enlargement of left uterus as compared to non-pregnant state and increased blood flow in left uterus on Doppler study (figures c & d)

3. DISCUSSION

Uterine didelphys or the duplication of uterus is rare cause of infertility which results from the complete failure of the fusion of the mullerian ducts. It predisposes to variety of the gynecological problems eghematocolpos or mucocolpos. It can result in obstetric complications preterm labour, repeated spontaneous abortion, fetal malpostion or cervical incompetence [3,4]. Pregnancy in uterine didelphys is an uncommon occurrence [5], incidence of which varies from 1 in 1,500 to 1 in 1,42,000 pregnancies worldwide [6].

Occasionally the anomaly remains undetected and only detect incidentally on routine check up. Mullerian duct anomalies generally associated with normal functioning ovaries and normal external genitalia.

The incidence of mullerian duct anomalies is approximately 1% in general population; in patients of infertility it is estimated to be 3 % [7].

The Uterus is developed during embryogenesis by the fusion of two paramesonephric or mullerian ducts. When partial fusion of mullerian duct occurs it result in bicornuate or septate uterus. Complete nonfusion of mullerian ducts gives rise to uterine didelphys. Uterine didelphys have two separate uteri and cervices. There may be a vertical vaginal septum in 75% of cases [8].

Each hemi uterus has a single horn linked to ipsilateral fallopian tube that ends in the ipsilateral ovary. Mullerian duct anomalies result from interruption of the normal mullerian duct development at any stage. Intrauterine and extra uterine elements, genetics, and teratogens (eg, diethylstilbestrol [DES], thalidomide), have been associated with müllerian duct anomalies [9]. The ovaries and lower one third of vagina develop from the thickened portion of posterior urogenital sinus called the sinovaginal bulb. Sometimes it is associated with transverse vaginal septa, which can result in hematometrocolpos. Non-obstructive uterine didelphys is usually asymptomatic [10]

American Fertility Society (AFS) Classification Scheme [11] classified mullerian duct anomalies in 7 classes as follows:

Class I anomalies consist of agenesis and variable degrees of uterovaginal hypoplasia.
Class II anomalies represent unicornuate uteri that may be partial or complete unilateral hypoplasia.
Class III is uterine didelphys in which complete nonfusion of mullerian ducts resulting in duplication of uterus.
Class IV anomalies are bicornuate uterus, result of the incomplete fusion of the superior segments of the uterovaginal canal.
Class V anomalies are septate uteri resulted from the partial or complete non-resorption of uterovaginal septum.
Class VI anomalies represent arcuate uteri that result from near complete resorption of the septum.
Class VII anomalies represent sequelae of in utero DES exposure [7,8].

Our case is of class III mullerian duct anomaly.

Ultrasonography is a good investigation, which can detect two separate divergent uterine bodies and two separate cervices. Endometrial cavities are separate with no communication in uterine didelphys. In uterine didelphys two uterine bodies normally are of equal sizes. However in our case the right uterus was larger than the left (Fig. 2), which might be because patient had given one childbirth and probably the previous pregnancy was in right uterine body which is of larger size.

MRI is the best modality for evaluation of mullerian duct anomalies. Characterization of the uterus, cervix and endometrial cavity are best in MRI. Vagina and vaginal septum can also evaluate in MR imaging. MR imaging provides clear delineation of internal and external uterine anatomy in multiple imaging planes and most importantly reliable depiction of the external uterine contour. MRI also has the ability to detect the frequently associated renal anomalies [10].

Evaluation of the uterine congenital anomalies can also be done by hysterosalpingography however; it has major limitation that it can characterize only the endometrial canal and inability to evaluate the external uterine contour. Hysterosalpingography is a painful technique and it has disadvantage of radiation exposure.

Didelphic uterus can progress for a successful pregnancy (57%) [12] with a fetal survival rate as high as 64% [13]. The pregnancy in a functional hemi uterus has a better prognosis in regard to the fetal survival rate than a pregnancy in uterine bicornuate, septate or arcuate uterus [14]. Spontaneous vaginal delivery as well as cesarean section at term has been reported [15,16]. Twin pregnancy in each uterine body of uterine didelphys is very rarely seen [17].

4. CONCLUSION

Uterine didelphys is a rare cause of infertility, however it can progress to a successful pregnancy. Ultrasonography along with MRI are investigation of choice for accurate diagnosis of mullerian duct anaomaly.

CONSENT

Author declares that 'written informed consent was obtained from the patient for publication of this case report and accompanying images'.

ETHICAL APPROVAL

Approval from the ethical committee of the hospital was obtained.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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