

## Septate Uterus as Congenital Uterine Anomaly: A Case Report

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### Abstract

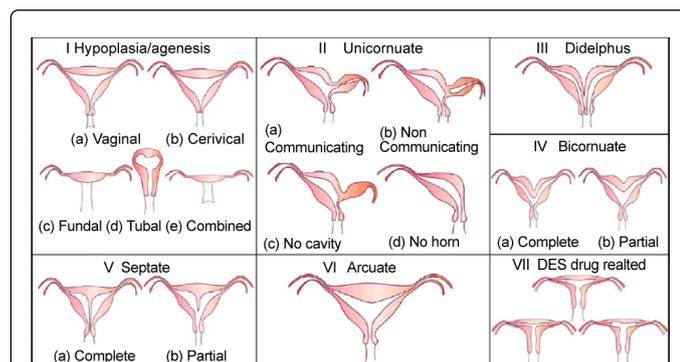
Abnormal fusion of Mullerian duct in embryonic life is the origin of variety of malformations which may alter the reproductive outcome of the patients. Septate uterus is caused by incomplete resorption of the Mullerian duct during embryogenesis. Here, we report a case of septate uterus that was initially diagnosed by ultrasound scan and confirmed by Magnetic Resonance Imaging (MRI) technique.

**Keywords:** Septate uterus; Mullarian ducts; Ultrasound; MRI

### Introduction

Uterine anomalies can lead to infertility and problems with reproduction among women. A lot of uterine malformation like septate uterus, unicornuate uterus, and bicornuate uterus result from abnormal development of paramesonephric (mullarian) duct fusion during uterus development.

The prevalence of uterine anomalies in the general population is about 0.5% [1]. Acien, in a review study, found a mean incidence for septate uterus 22% (complete septate 9%, partial septate 13%) among the all other types of mullarian defects [2]. In 1988 American Fertility society described congenital uterine anomalies related to mullarian ducts according to Figure 1.

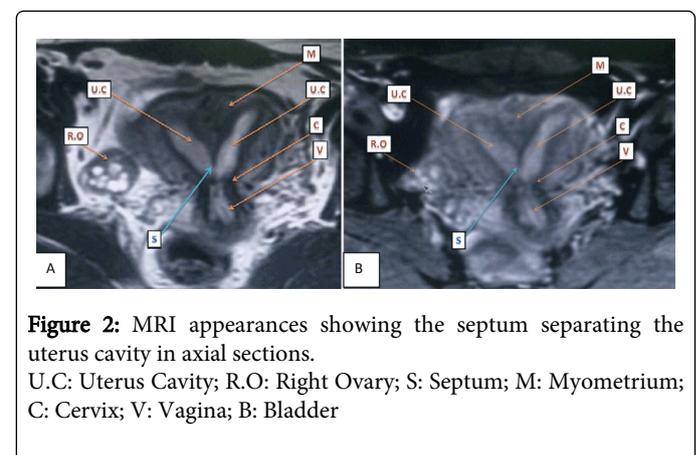


**Figure 1:** Classification of congenital uterine anomalies as described by the American Fertility Society (1988).

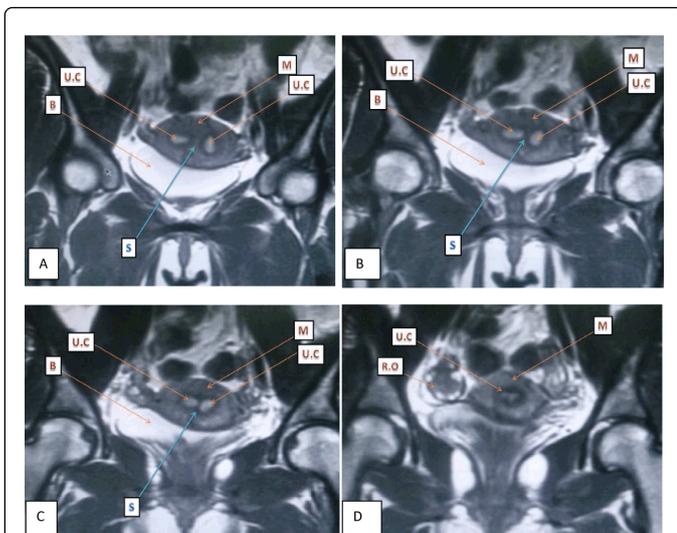
Septate uterus is the most frequent uterine malformation [3,4] and characterized by a muscular or fibrous wall, called the septum. The septum affects only the cranial part of the uterus (partial septate uterus) or it may reach as far as the cervix (complete septate uterus) Figure 1(v). It is diagnosed by medical image techniques, i.e. ultrasound or an MRI.

### Case Report

A 29 year old lady came to the imaging diagnostic center of Ahvaz Oil Grand Hospital. It was past 6 years of her marriage. Her menstrual history was normal. There was no family history of any abnormalities related to uterus. Her obstetric history showed 3 miscarriages. After the third abortion she was referred to an ultrasound center and the doctor reported bicornuate or septate anomalies for her uterus where as other parts of her internal genital organ were sonologically normal. In order to further investigation she under went MRI in our center. The MRI findings are shown in Figures 2 and 3. Our observation confirmed a septate uterus for her.



**Figure 2:** MRI appearances showing the septum separating the uterus cavity in axial sections.  
U.C: Uterus Cavity; R.O: Right Ovary; S: Septum; M: Myometrium; C: Cervix; V: Vagina; B: Bladder



**Figure 3:** MRI appearances of septate uterus in a series of coronal sections (A, B, C, D respectively).

U.C: Uterus Cavity; R.O: Right Ovary; S: Septum; M: Myometrium; C: Cervix; V: Vagina; B: Bladder

## Discussion

Uterine anomalies are related to an increased risk of infertility, miscarriage, premature birth, fetal loss and cesarean delivery [5,6]. In present case, according to the patient history, septate uterus has influenced her fertility and there was a previous history of abortion.

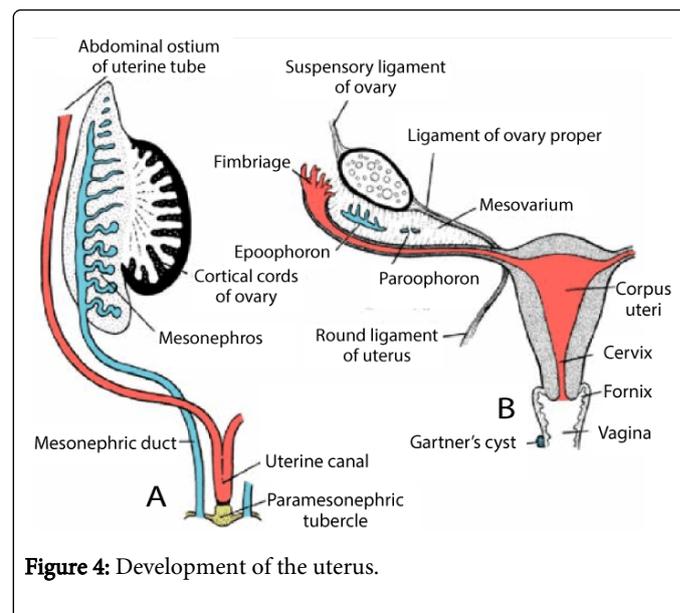
Ultrasonography is a simple, quick, and non invasive technique for detecting and diagnosing uterine anomalies. Despite the notable advantages of this technique, unfortunately the obstetric ultrasound scan done on our patient could not detect the septate uterus as anomalies accordance with uterus exactly and it could be probably as a result of lack of experience. However, our MRI images diagnosed this problem accurately. Grimbizis et al. reported that 12 (26.1%) out of their 46 infertile patients with septate uterus had laparoscopic finding of endometriosis [7]. Fayez also found endometriosis in three (43%) out of seven similar patients [3]. It seems possible that septate uterus may be involved in the pathogenesis of endometriosis and thereby plays an important role in indirect relationship within fertility. Therefore, it seems that any finding about endometriosis should be followed by careful investigation for uterine malformation especially in women affected by septate uterus.

In conclusion, the diagnosis of septate uterus as a congenital anomaly can be achieved easily with MRI. It can be corrected by hysteroscopic surgery and thereby decreases the rate of abortion for women greatly.

## Embryogenesis

In female embryo, the müllerian ducts give rise to the fallopian tubes, uterus, and upper portion of the vagina. The uterus is developed

from fusion and canalization of the vertical parts of the müllerian ducts in the midline. At first, because of presence of an incomplete septum this fusion is incomplete. As the uterus development progress, this septum reabsorbed and uterus with a single cavity forms (Figure 4) any abnormalities in this process can result in the range of known müllerian anomalies like septate uterus. Although these anomalies can remain in a relatively quiescent state during the prepubertal but they also can be followed by obstetrical complication in female during puberty years [8].



**Figure 4:** Development of the uterus.

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