MRI appearance of an unusual manifestation of septate uterus

G. Mueller[1], Y. Smith[1], E. Quint[1], J. Delancey[1], R. Carlos[1], H. Hussain[1]
[1]University of Michigan, Ann Arbor, Michigan, United States

Introduction: Mullerian anomalies are associated with increased risk of infertility and miscarriages [1]. The main purpose of MRI, clinical, and surgical examination of patients with suspected mullerian anomaly is to identify those that may benefit from surgical correction. Therefore, it is important to accurately classify these anomalies as clinical management is dependent on the diagnosis. Traditionally, septate uteri are treated surgically with excision of the uterine septum while didelphic or bicornuate uteri are not. An unusual Mullerian anomaly that can be clinically difficult to assign to appropriate clinical management is a septate uterus with a duplicated cervix. As two cervices are identified on gynecological examination which may lead to classification as a didelphic or bicornuate uterus and thus assigned to non-surgical treatment, correlation with MRI findings is important to exclude a uterine septation that is amenable to excision.

Purpose: The purpose of this review is to describe the MRI findings of an unusual Mullerian anomaly, a septate uterus with a duplicated cervix.

Material and Methods: 104 patients who underwent pelvic MRI for suspected müllerian anomalies between October 1998 and April 2003 were retrospectively identified. Of these 104, 6 patients were diagnosed with a septate uterus with duplicated cervix based on a combination of MRI imaging and gynecologic examination and/or gynecologic surgery. The study was approved by the Institutional Review Board.

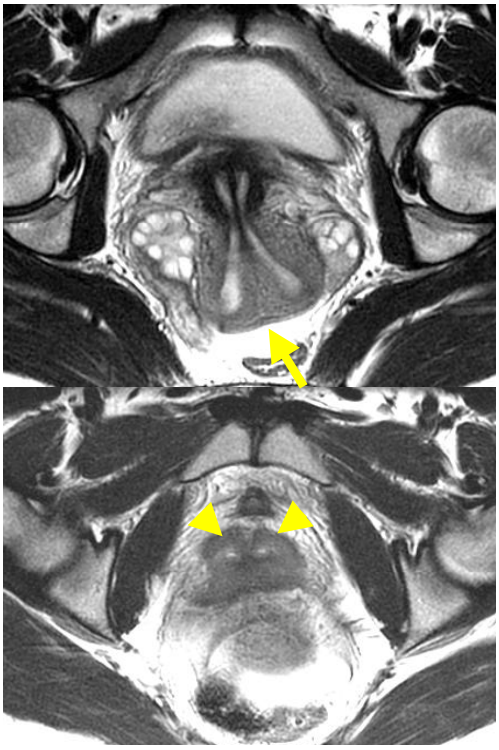

Figure 1 shows a septate uterus as indicated by the flat outer fundal contour (arrow), and double cervix (arrowheads). This patient was treated with metroplasty.

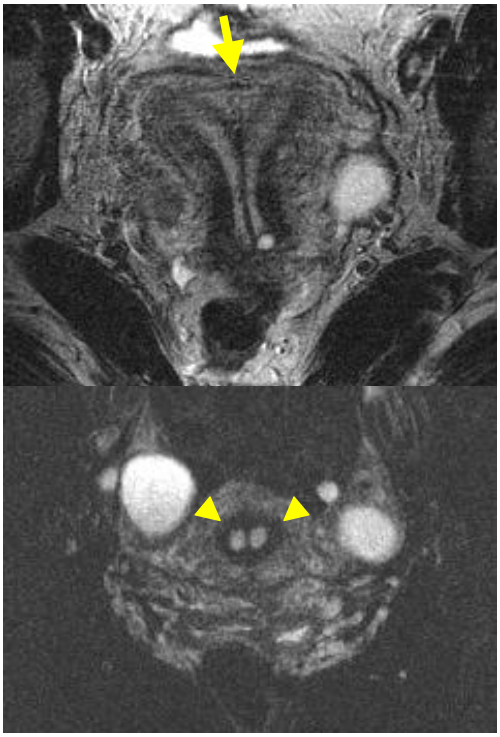

Figure 2 shows a septate uterus with a flat outer fundal contour (arrow), and double cervix (arrowheads). This patient was treated conservatively.

Results: All 6 patients had two distinct cervices, rather than a septated cervix. All 6 patients had a clearly identifiable single fundus with a flat or convex outer fundal contour, the most compelling evidence of a septate uterus. All of the 6 patients had a typically appearing uterine septum with a muscular component proximally and a fibrous component distally. All 6 patients had a vaginal septum. Of these 6 patients, 2 patients received a metroplasty after the MRI. One received resection of the vaginal septum. The remaining 3 were clinically treated as having didelphic uteri.

Discussion: Patients with septate uteri benefit from surgical correction of their anomaly. A septate uterus results from fusion of the mullerian ducts with incomplete septal resorption. Embryologically, it is thought that mullerian duct fusion is unidirectional, progressing caudad-to-cranial. However, it has been recently suggested that fusion of the upper and lower parts of the mullerian ducts are separate processes, resulting in variants of the septate uterus that are difficult to accurately classify. Affected patients show two separate cervices on clinical exam, which is suggestive of uterus didelphys rather than septate uterus, leading to discrepancy between the MRI diagnosis and the clinical impression. We encountered 6 patients with this variant of septate uterus, and only two of them underwent resection of their uterine septum. In these two patients, the surgical approach had to be altered due to the unusual anatomy.

References:

1. Elford KJ, Spence JE: The forgotten female: Pediatric and adolescent gynecological concerns and their reproductive consequences. J Pediatr Adolesc Gynecol. 2002 Apr;15(2):65-77. Review