CLINICAL IMAGES

MRI of a twin pregnancy in a uterus bicornis unicollis

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A 30-year-old woman was seen at 24 weeks for a discrepancy between the symphysis-fundal height and the gestation by dates. Ultrasound examination revealed a twin pregnancy and showed the placentas to be implanted 'back-to-back' over what appeared to be a septum that extended from the uterine fundus to the cervix (Fig. 1). A bicornuate unicollis uterus was confirmed on MRI and revealed two divergent uterine horns separated by a deep fundal cleft, surrounded by myometrial tissue, containing a fetus within each horn (Fig. 2). A single cervix and vagina was visualised (Fig. 3), in keeping with a Class IVA Müllerian duct abnormality.[1] At 33 weeks, an emergency caesarean section delivery was performed via two separate classic incisions into each corpus.

A spectrum of congenital uterine malformations is attributed to the abnormal fusion of the pair of Müllerian ducts or failure of the absorption of the uterine septum;[2,3] bicornuate uterus is the most common.[3] Spontaneous twin gestation in a case of bicornuate uterus is rare. MRI is a valuable adjunct to sonar, which can be diagnostically limited in the third trimester. MRI assists in delineating external uterine contour, characterising septal composition, endometrial/myometrial ratio and defining the subtype of Müllerian duct anomalies.[3] Deep uterine bifurcation causes myometrial distortion denying each corpus the full complement of musculature, resulting in a higher incidence of reproductive loss, malpresentations, fetal dysmorphia, premature labour and perinatal morbidity and mortality as well as maternal death.[2-4]

MRI influenced management in our patient by characterising the uterine anatomy, so allowing proper surgical intervention and planning the future management of pregnancies.

Fig. 1. Trans-abdominal ultrasound: 'back-to-back' implantation of placentas on either side of a septum extending down from the uterine fundus.

Fig. 2. MRI: Two divergent uterine horns with a fetus within each horn. The horns are separated by a deep fundal cleft and surrounded by myometrial tissue; the dividing septum extends down to the internal cervical os.

Fig. 3. MRI demonstrating a common single cervix.

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1. The American Fertility Society classifications of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, mullerian anomalies and intrauterine adhesions. Fertil Steril 1988;49(6):944-955.
2. Arora M, Gupta N, Jindal N, Jindal S. Unique case of successful twin pregnancy after spontaneous conception in a patient with uterus bicornis unicollis. Arch Gynecol Obstet 2007;276(2):193-195.
3. Marten KVR, Funke M, Obenauer S, Baum F, Grabbe E. MRI in the evaluation of mullerian duct anomalies. Journal of Clinical Imaging 2003;27:346-350.
4. Barmat LI, Damario MA, Kowalik A, Kligman I, Davis OK, Rosenwaks Z. Twin gestation occupying separate horns of a bicornuate uterus after in-vitro fertilization and embryo transfer. Hum Reprod 1996;11(10):2316-2318.