

Mirror artefact on Obstetric 1st trimester transvaginal ultrasound

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Introduction

Mirror image on ultrasound is produced when a highly reflective surface comes in the path of the primary beam. Very few cases have been reported in early pregnancy.

Case history

A 33 years old, multiparous woman with previous two vaginal deliveries presented for the viability scan. She was 7 weeks pregnant and had no clinical symptoms. The previous history included renal transplant in 2004 and type 2 diabetes.

Imaging

Transvaginal and transabdominal USS.

Initial TV USS showed findings suspicious of two uteruses with 7 weeks size viable pregnancy in each. Differential diagnosis was of mirror artefact, heterotopic pregnancy or double uterus. Further TVS for second opinion revealed the uterine cavities appeared on either side of bladder which was seen in the middle. The second/mirror image was hypoechoic, blurred and distorted as compared to the original image

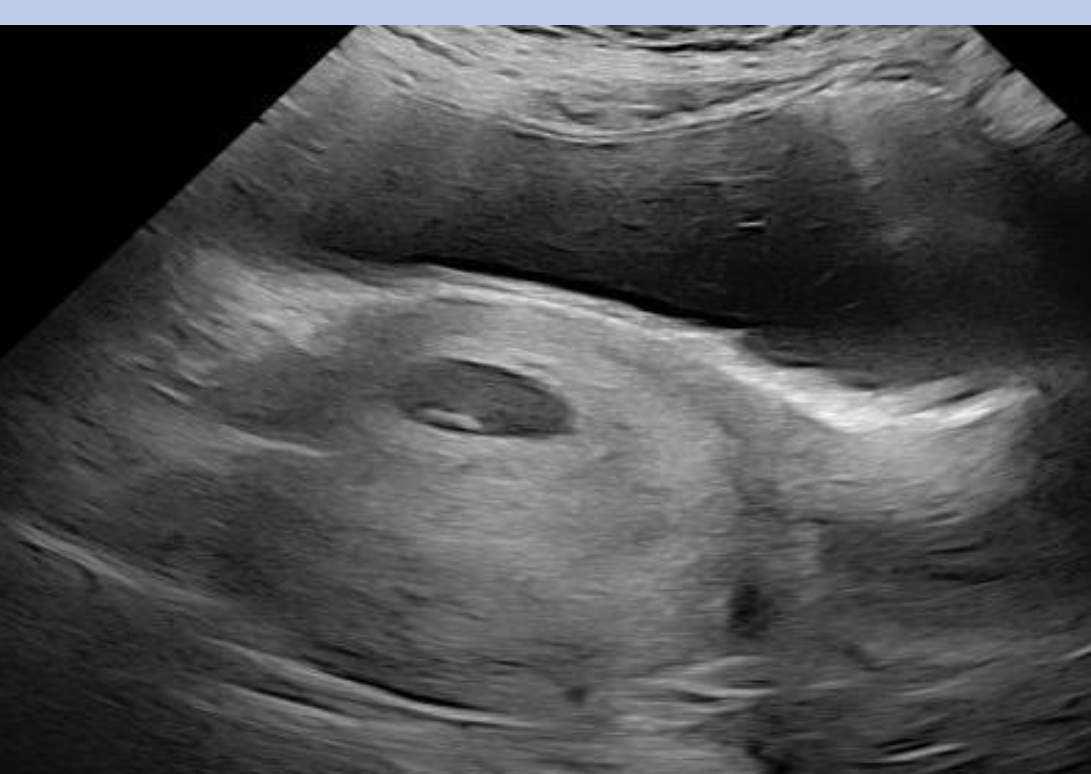
A linear echogenic foreign body was seen in the urinary bladder. Transplanted kidney was seen in the right iliac fossa. Transabdominal USS demonstrated single uterus with intrauterine pregnancy and a 3D scan confirmed arcuate shaped uterus with pregnancy on right side. Final diagnosis was of a mirror artefact mimicking two uterus.



longitudinal image of the uterus intrauterine pregnancy – image anterior to the bladder appears blurred and seen trembling during scan



Urinary bladder seen between the two images with echogenic linear shadow suspected of foreign body



Transabdominal 2D & 3D image of the fundal part of the uterus demonstrating the arcuate uterus with single intrauterine pregnancy



Physics behind mirror image

Mirror image on ultrasound is created by some simple rules of physics: when ultrasound beam reflected from the object, hits a highly reflective tissue (fluid or gas) between the transducer and the object, a mirror image is created.

USS challenges

Mirror image in obstetric ultrasound is a rare finding, can lead to diagnostic errors and must be differentiated from heterotopic pregnancy and uterine anomaly should be ruled out.