

# Fetal MRI of thoraco-omphalopagus conjoined twins

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## DESCRIPTION

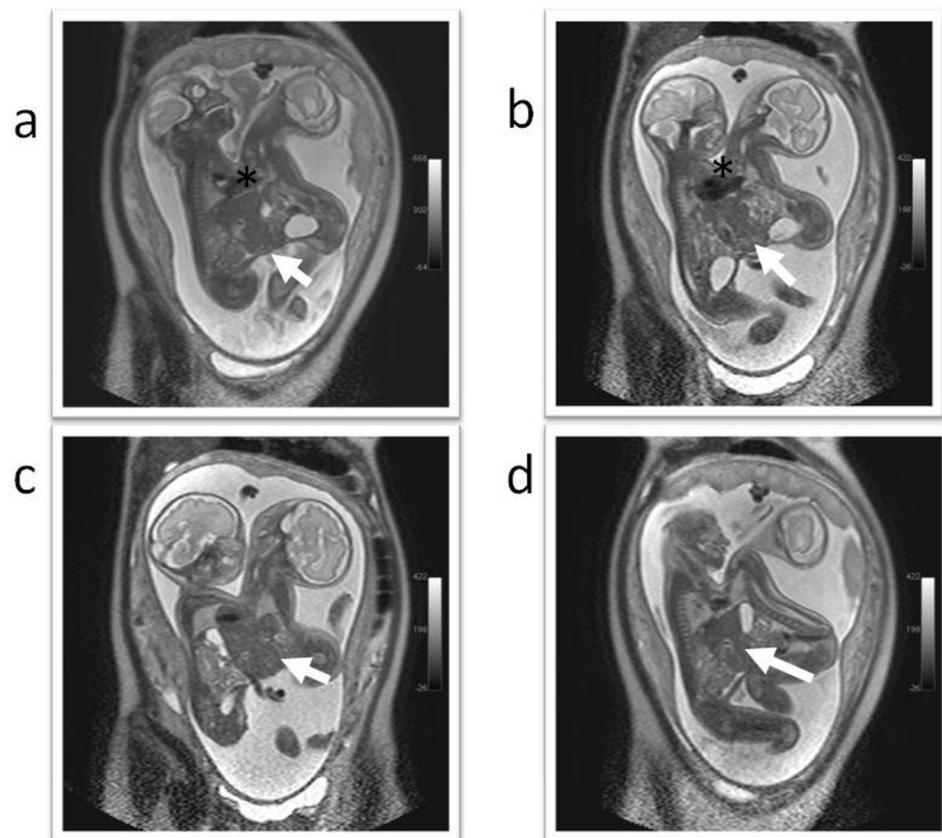
Conjoined twins are very rare with incidence of 1 per 250 000 live births.<sup>1</sup> Fetal MRI is an important adjunct to ultrasound particularly in evaluation of complex fetal anomalies and organ positions.<sup>2,3</sup> This case report illustrates our first experience in MRI fetal of conjoined twins with the current available sequences.

An 18-year-old G<sub>2</sub> P<sub>0+1</sub>, with no known medical illness, was diagnosed with conjoined twin pregnancy from antenatal ultrasound at 28 weeks. MRI of pelvis was performed using a 1.5 T Phillips using torso array coil. Sequences employed were *Coronal T2 FB* (free breathing), *Axial T2 FB*, *Sagittal T2 FB*, *BB\_SSh\_RTrig SE*, *Axial BTFE* and *BB\_SSh\_RTrig SE*. The effective time echoof 188 s, 10mm slice thickness. Each slice was performed in 2s, and the full sequences in each imaging plane require 27 s, 256×256 matrix and 34 cm field of view.

It showed conjoined twins with single and fused heart, and liver represented a thoraco-omphalopagus presentation (figure 1).

The images from MRI allow counselling with the parents regarding poor prognosis of the non-operable fused heart and liver (figure 2). The patient underwent emergency caesarean section due to premature labour. Two baby girls were found to be joined at the thorax and abdomen (fused heart and liver) with single umbilical cord insertion. The patients succumbed to death due to heart failure at day 2 of life.

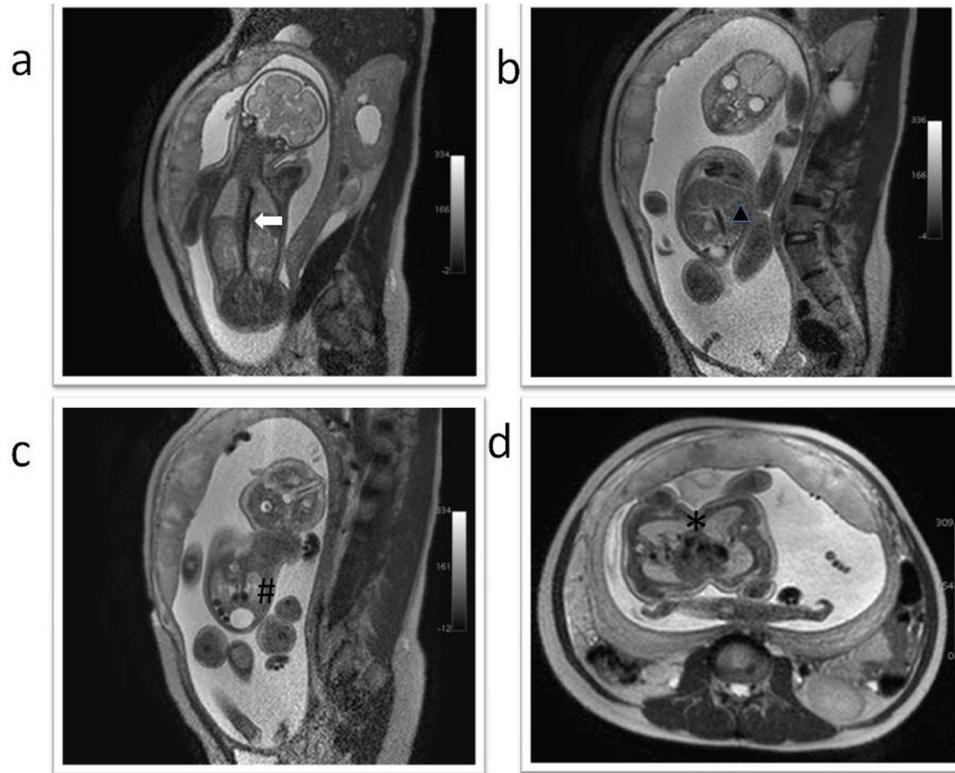
In our experience, the most useful MRI sequence is T2 FB in all three planes. The advent of fast acquisition sequences in MRI technology allows better images by minimising movement and breathing artefacts.



**Figure 1** Fetal MRI in T2 FB coronal images (A–D) show conjoined twins face to face with fusion of the upper thorax and abdomen. The shared heart (\*) is in the midline, positioned horizontally between the two fetuses. Single liver is shared between both fetuses (↖). Each fetus has separate stomach, kidneys, urinary bladder and two upper and two lower limbs. FB, free breathing.



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**Figure 2** Sagittal T2 FB (A) shows fetal thoracic and abdominal aorta (∧) and (B) shows the IVC (Δ) of the fetus. (C) shows thin low signal linear structure anterior to the vertebral body representing small calibre thoracic and abdominal aorta (#) of the fetus. Axial T2W (D) shows single fused heart (\*) and two separate lungs. FB, free breathing. IVC, inferior vena cava

**Learning points**

- ▶ Ultrasound is the mainstay of fetal imaging, but combination of ultrasound and fetal MRI has been shown to be 60% more superior to ultrasound alone in twin pregnancies.
- ▶ MRI shows improved anatomical detail compared with ultrasound which is particularly useful for preoperative assessment or in cases of maternal obesity and oligohydramnios which limits sonographic ability to differentiate soft tissues.
- ▶ The advent of fast acquisition sequences in MRI technology allows better images by minimising movement and breathing artefacts.

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by HA and NAW. Images analysis and literature reviews were also done by HA and NAW. KAB contributed in the planning and initial idea of the manuscript.

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**Patient consent** Obtained.

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