

## Heteropagus conjoined twin - magnetic resonance imaging finding and its importance

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**C**onjoined twin is a rarely seen congenital anomaly and is one of the rarest forms of twinning which occurs in monozygotic twins without genetic predisposition. Ultrasonography (USG) is the gold standard method for imaging of above condition and it also helps in further treatment planning. The use of magnetic resonance imaging (MRI) with multiplanar imaging and without any radiation is extremely helpful for managing

such disorder [1]. Heteropagus twinning is a rare form of above disorder in which one of the fetuses is not completely formed.

A 3-day-old child presented to our department for MRI imaging from pediatric surgery department (Fig. 1). On examination of the conjoined twin, the fusion was found at the thoracoabdominal region. One of the children (among conjoined twin) was having normal head and thoracic region. The parasite (the dependent fetus) was attached



Figure 1: The parasite (the dependent fetus) was attached to upper abdominal wall and its limbs were visible



Figure 3: Bowel loops were seen communicating on both the sides with blood vessel signals were also there

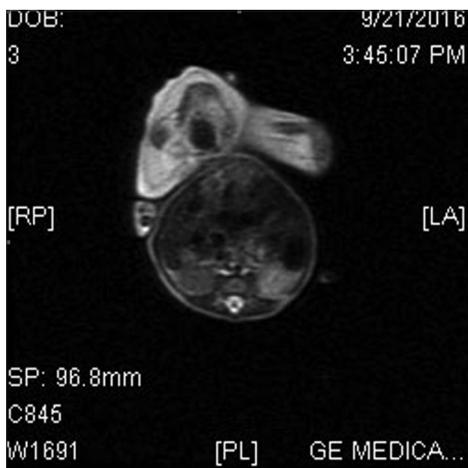


Figure 2: T2 axial magnetic resonance imaging image is showing the dependent fetus with its limb attach to abdominal wall



Figure 4: Communication was at epigastric level and no such communication was noted at thoracic level

to upper abdominal wall of normal looking fetus, and its limbs were only visible. Its head and thoracic cavity were not formed (Fig. 2). Bowel loops were seen communicating on both the side in fetus and in parasite and blood vessel signals were also there (Fig. 3). MRI revealed that the communication was at epigastric level and no such communication was noted at thoracic level (Fig. 4). After the findings of MRI, surgical management was decided for the above condition.

Conjoined twins are rare condition of unknown etiology. Incomplete division of embryonic disc within 13 days of fertilization is considered to be the etiology factor. Conjoined twins can be classified as symmetric or asymmetric type. Symmetrical type is the fusion of two identical twins at a certain site on both sides. This may be fusion at chest (thoracopagus), fusion at anterior abdominal wall (omphalopagus) at pelvis/ischium (ischiopagus), at cranium (craniopagus), or a combination of above condition [2]. Asymmetrical twins are also called as parasitic twins or heteropagus in which the dependent fetus or parasite is not completely formed and is attached to the normally formed fetus with evident of supernumerary limbs [3]. Depending on the site of union and extent of damage, it can be parasitic twin, enclosed fetus-in-fetu, internal teratoma, or cardiac variety. The parasitic variety usually does not have functional brain or heart with rudimentary gastrointestinal tract or urinary tract which

can be seen as communication between the two in imaging procedures. These cases of parasitic variety of conjoined twins can be separated by the use of surgical procedures.

Diagnosis and management of conjoined twins is very difficult. The use of USG and MRI can be a great help in planning and management of such conditions. Among these two, making an early diagnosis with MRI can predict accurately the site of union (at thoracic or brain level) of heteropagus twins.

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