Gastroschisis and vertebral defect associated with amniotic band in a fetus with ADAM sequence

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Objective
ADAM sequence (amniotic deformity, adhesion, and mutilation) or as the more well-known name, amniotic band syndrome is a rare and heterogeneous condition in which birth defects are probably caused by the fibrous, constrictive amniotic bands with the sequence rupture of the amnion, followed by loss of amniotic fluid and extrusion of all or parts of the fetus into the chorionic cavity. The syndrome can cause a wide range of anomalies and the most common associated anomalies include amputations, constriction bands, encephalocele, acrania, syndactyly, craniofacial defects, club feet and cleft lip. Vertebral and abdominal wall defects such as omphalocele are extremely rare. It is commonly sporadic with a low risk of recurrence so the differential diagnosis of this syndrome from other structural and congenital anomalies is important.

Methods
We present a case referred to our clinic for fetal vertebral defect at 13 weeks of gestation and diagnosed as gastroschisis and vertebral defect with the presence of a strict amniotic band.

Results
A 27 year-old primigravid woman referred to our clinic at 13 week of gestation for fetal vertebral defect. According to the past history of the patient no pre-existing diseases or infections during pregnancy were recorded. Ultrasonography revealed a single live fetus compatible with gestational age with gastroschisis and vertebral defect and also an amniotic band crossing through the abdominal wall of the fetus (Figure 1). The pregnancy was terminated for multiple fetal anomalies. Macroscopic evaluation of the fetus revealed gastroschisis and also the thoraco-lumbar junction of the spine was disrupted with the presence of the amniotic band (Figure 2).

Conclusion
The exact etiology of amniotic band syndrome remains unknown and the incidence ranges from 1: 1, 200 to 1: 15, 000 live-born, and is even higher in spontaneous abortions with 1/56. Amniotic band syndrome is commonly associated with limb deformities such as amputations, partial syndactyly, constriction rings around the extremities and reduction defects. Band formation commonly occurs between 8–18 weeks of gestation. However, it can occur before the 45 day and this can be associated with cranial and facial defects and abdominal wall defects such as gastroschisis. The exceptional cases can be manifested with encephalocele, anopthalmia, thoracogastroschisis and exencephaly. Our case was an unusual presentation of amniotic band syndrome with gastroschisis and vertebral defect. In conclusion amniotic band syndrome requires close follow-up as it may cause severe malformations in the fetus.