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Case Report

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Amniotic Band Syndrome – A Case Report

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ABSTRACT

Amniotic Band Syndrome (ABS) encompasses a wide spectrum of abnormalities, all of which result from the entrapment of various parts of the fetal body in the disrupted amniotic fluid. Because of the randomness of entrapment, each affected individual has the potential to develop a unique deficit. Termination of pregnancy is usually suggested at the time of diagnosis of severe abnormalities, while minor limb defects can be repaired by surgery after birth [1]. Here we report a case of amniotic band syndrome detected during fetal anomaly scan at 19w0d gestational age.

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Introduction

Amniotic Band Syndrome (ABS) is considered a rare, sporadic condition among live births [2]. ABS is a constellation of congenital anomalies that can be seen in infants without any known genetic mutations. The malformations in ABS are multifactorial. Various deformities in ABS mimics genetic syndromes, hence, the knowledge for an accurate diagnosis is important for parental counselling regarding the low risk of recurrence in future pregnancies. Early and accurate prenatal diagnosis is important as medical abortion is justified in cases of severe congenital anomalies.

Case Report

A 23-year-old gravida 2, live 1 (born by normal spontaneous vaginal delivery), with an uncomplicated second pregnancy, presented for anatomical sonographic examination of the fetus in the 2nd trimester (the patient could not recall her last menstrual period). The patient had no family history of congenital anomalies, previous uterine procedures or paternal consanguinity.

Gestational age based on sonographic parameter (including biparietal diameter, head Circumference, abdominal circumference and femur length) was 19 weeks 0 days. A thin echogenic linear membrane (amniotic membrane) separate from the chorion enveloping the fetus and the umbilical cord (Figure 1) was noted on the fetal anomaly scan. In addition, numerous craniofacial and limb deformities were found.

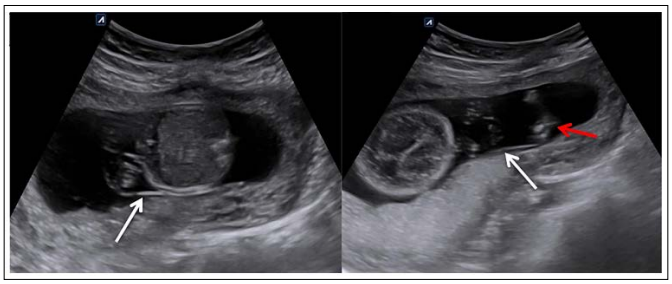

Figure 1(A and B): Obstetrical suprapubic grey scale ultrasound showing thin echogenic amniotic membrane (white arrow) separate from chorion completely encasing fetus and the umbilical cord

Micromelia (hypoplasia involving distal and proximal bones) of the upper and lower limbs (red arrow in figure 2A, 1B).

Specific craniofacial deformities included lissencephaly along with pachygyria and subdural hygroma, significant cerebellar hypoplasia with posterior fossa cyst (Figure 2B), and mandibular hypoplasia (Figure 2C) was noted.

Other significant anomalies were fetal pleural effusion and ascites, bilaterally bulky and echogenic fetal kidneys (Figure 2D), and absence of a gastric bubble with an echogenic bowel.

Medical termination of pregnancy was advised to the patient and she underwent induction abortion at 19 week 4 days.

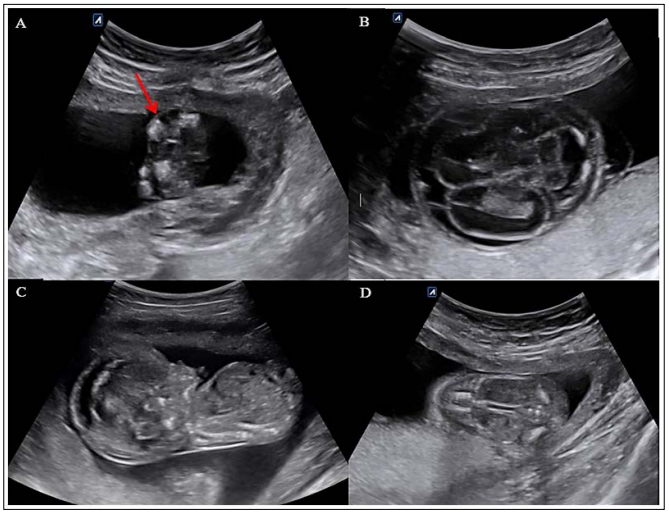

Figure 2: Obstetrical suprapubic grey scale ultrasound showing multiple fetal congenital anomalies. Micromelia of both upper and lower limbs(red arrow fig 2A, 1B). lissencephaly, subdural hygroma, cerebellar hypoplasia, posterior fossa cyst thin(Fig 2B).

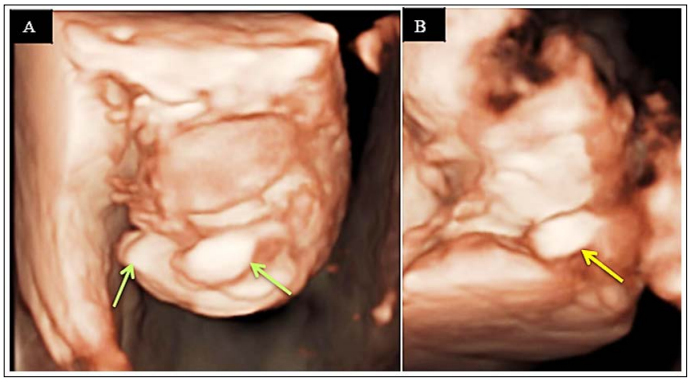

Figure 3A: Transabdominal three-dimensional ultrasonography with section below the level of fetal chest showing dysplastic bilateral lower limbs (green arrow); Figure 3B : section above the level of fetal chest showing dysplastic bilateral upper limb (yellow arrow).

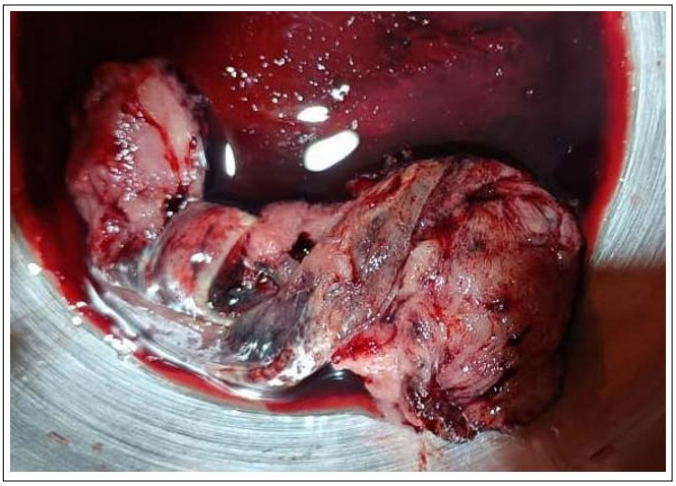

Figure 4: Photograph of abortus

Discussion

Amniotic Band Syndrome (ABS) can lead to anomalies that range from mild deformities to severe anomalies that are incompatible with life. The prevalence is estimated to be ~1:1200-1300 live births with no sex predilection [3]. The exact pathogenesis is not well understood, although several etiologies have been proposed. According to the exogenous theory proposed by Torpin in 1965, disruption of the amnion allows a part of embryo or fetus to enter the chorionic cavity, where the body parts become entangled in fibrous mesodermal fibres emerging from the chorionic side of the amnion [4]. If this occurs early in pregnancy, it can potentially cause multiple malformations. While the endogenous theory postulates that vascular damage during early embryogenesis is responsible for the amniotic band syndrome [1].

Diagnosis of amniotic band syndrome on antenatal ultrasound is supported by the pattern of deformity and anomalies occurring in fetus. Amniotic bands can lead to focal constrictions causing distal lymphedema or slash defects in in nonembryologic distributions. Fetal limb amputation can occur from genetic or teratogenic causes, where it tends to be bilaterally symmetrical, however amputations due to the amniotic band syndrome are usually asymmetric [5].

When gastroschisis is associated with exteriorization of the liver the amniotic band syndrome should be strongly considered. Encephaloceles associated with failure of neural tube fusion occur in midline, whereas asymmetric encephalocele should strongly suggest the amniotic band syndrome [6]. Other malformations such as nonembryological clefts, asymmetric anencephaly, and gastropleuralschisis can be suggestive of ABS, even when the bands are not apparent [7, 8].

Antenatal detection of an aberrant sheet or bands of tissue attached to the fetus with characteristic deformities and restriction of movements is diagnostic of amniotic band syndrome. Antenatal detection of the sheet or band in the amniotic cavity without associated deformity does not warrant a diagnosis of ABS. Antenatal sonographic demonstration of a sheet of aberrant tissue in the amniotic fluid surrounding a fetus without evidence of associated deformity does not imply the presence of the amniotic band syndrome and does not constitute sufficient indication for elective pregnancy termination [6].

Diagnosis of ABS is important for the management of the current pregnancy and for reassurance regarding future pregnancies, as the chance of recurrence is low [9].

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