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SHORT COMMUNICATION

Amniotic Band Syndrome

M. Regi Cindrella[1], B. Jayabharathi[2]

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ABSTRACT

Amniotic band syndrome also called as Streeter's dysplasia is one of the rare disorders by birth, which causes malformation and deformities in the fetus. The ruptured amniotic membranes constrict the body or limbs or both of the fetus and cause malformations. The main stay of diagnosis is ultrasound during pregnancy but it is mostly missed by healthcare workers. This condition leads to mild to severe deformities like amputation of fingers or toes, club foot in the fetus leading to limited movements of the limbs or even death. The treatment options include observation and exercise in mild cases, and surgical correction, rehabilitation in case of moderate to severe fetal deformities.

KEYWORDS

• Contraception • Lactation • Progestin • Family Planning • Amenorrhea

INTRODUCTION

The fetus is surrounded by two layers in the uterus called as amnion (inner layer) and chorion (outer layer). Amniotic band syndrome is a condition wherein the amnion layer is ruptured, for which the cause is unknown, and projections from the ruptured membrane constricts the fetus (either body, limbs or both, neck). Due to the constriction, the part constricted is devoid of blood flow which results in deformities or even loss of life (in case of head/neck constriction) in the fetus. The incidence of this condition is 1 in 1200-15000 live births.

DIAGNOSIS

The Amniotic band syndrome can be diagnosed in prenatal ultrasound which require keen observation, so it is mostly missed out by the healthcare professionals

AUTHOR'S AFFILIATION:

[1] Tutor, Meenakshi College of Nursing, Meenakshi Academy of Higher Education and Research, Chennai, India.
[2] Vice Principal, Meenakshi College of Nursing, Meenakshi Academy of Higher Education and Research, Chennai, India.

CORRESPONDING AUTHOR:

B. Jayabharathi, Vice Principal, Meenakshi College of Nursing, Meenakshi Academy of Higher Education and Research, Chennai, India.

E-mail: prachisaner7219@gmail.com

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and is diagnosed only after the birth. After the diagnosis is made in prenatal period, MRI can be done to confirm and find the extent of the deformity.

COMPLICATIONS

The Amniotic band syndrome could be classified into mild, moderate and severe based on the constriction by the amnion projections and the site/ part affected.

The most common site of amnion layer constriction is limbs which lead to club foot, syndactyly or amputation of toes/fingers. If the amniotic projections surround the head, it could result in cleft lip or palate and when the constriction is around the neck or umbilical cord, it could prove fatal for the fetus.

TREATMENT

Based on the location, severity and the stage of diagnosis the treatment modality differs.

If the fetus is born with mild constriction, the baby is observed and would require exercises. In moderate or severe cases, and diagnosed in antenatal period, the fetus would require in-utero surgery to remove the constrictions to restore blood supply. It involves cutting the amniotic projections with laser or sharp instruments by which the risk or extent of deformity could be reduced.

In moderate or severe cases diagnosed after birth, the baby has to undergo plastic and reconstructive surgeries to correct fused fingers, toes, cleft lip/palate and clubbed foot. In case of amputated limb, prosthetics are suggested to the children.

The most recent advancement in the treatment of this condition is by using regenerative medicine and cell-based technology which has been reported to show promising results.

Studies about Amniotic Band Syndrome

Cristina Rossi A., Samer Assaf and Ramen H. Chmait (2009), did a systematic literature review with 27 identified case reports about Amniotic Band Syndrome (ABS) which were already published in journals and also available online. In these cases, the survival rate was 52%(14/27), termination of pregnancy 29%(8/27), intrauterine death 7%(2/27) and neonatal death was 11%(3/27). Out of the total surviving cases, 78%(11/14) had normal development and 22%(3/14) had deformities. Fetoscopy was done in 44%(12/27) fetuses which exhibited great result with one exception. Thus the study concluded that ABS is a severe condition which could be treated with fetoscopic lysis of the amniotic bands given favorable circumstances.

Chris Minella MD, Benedicte Costantino MD, Rodrigo Ruano MD., et al., (2020) did a study to report the effectiveness of fetoscopic treatment for Amniotic Band Syndrome. 3 cases were taken totally, in which amniotic band release was performed with laser fiber through a single trocar in 2 cases and the other one case was carried out with scissors. The study concluded stating that the amniotic band removal in fetal period has positive results in preventing amputation and dysfunction of the fetus.

CONCLUSION

The Amniotic Band Syndrome is a rare life-threatening condition but with early and correct diagnosis, the possibilities of fetoscopic interventions, the rate of deformities in the fetus increases. With advancements made in cell-based therapy, it is hoped that rare conditions like Amniotic Band Syndrome could be completely treated.

REFERENCES

1. Amniotic band syndrome facts retrieved from https://www.orthobullets.com/hand/6082/constrictive-ring-syndrome-streeters-dysplasia.
2. Singh AP, Gorla SR.(2022) Amniotic Band Syndrome. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.
3. R. Preetha, Usha Vishwanath, Preet Agarwal, Parmala,(2011), An uncommon case of Amniotic Band Syndrome, SRJM, 4(1), 35-37.
4. Salah Haji Hassan Muhumad, Abdirahman Omer Ali, Hassan Elmi Moumin, Ahmed Abdi Aw Egge, Roukia Mahamad Nour, Mohamed Abubakar Muhumed, 2025.Amniotic band syndrome: Insights from first documented case report in Somalia's low-resource setting. *International Journal of Surgery Case Reports*, 129, ISSN 2210-2612,https://doi.org/10.1016/j.ijscr.2025.111135.
5. Cristina Rossi A., Samer Assaf and Ramen H. Chmait, (2009), Fetal outcomes of Amniotic Band Syndrome: A systematic literature review, AJOG, 201(6), S161-S162.

6. Chris Minella MD, Benedicte Costantino MD, Rodrigo Ruano MD., PhD. Et al., (2020), Fetoscopic release of amniotic band syndrome, Journal of Ultrasound in Medicine, 40(5), 1039-1048.