

ANAESTHETIC MANAGEMENT OF A NEONATE WITH AMNIOTIC BAND SYNDROME FOR SURGICAL REPAIR

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ABSTRACT

Amniotic band syndrome (ABS) is defined as a continuous spectrum of manifestations due to intrauterine rupture of amnion, ranging from simple soft tissue constrictive bands to amputation of digits or more severely the whole limb due to dysplastic vasculature. This case is reported because of its extreme rarity and gratifying results if diagnosed and managed early. Despite the numerous descriptions of this syndrome in the literature, little is mentioned regarding its anaesthetic management.

KEYWORDS

Amniotic Band Syndrome, Z-plasty, Autoamputation.

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INTRODUCTION: Amniotic band syndrome (ABS) is a rare condition caused by strands of the amniotic sac that separate and entangle digits, limbs, or other parts of the foetus.¹ The amniotic band syndrome (ABS) has a reported incidence of 1 in 1200 to 1 in 15000 live births.² It occurs when amnion ruptures and chorion remains intact and developing foetus is still floating in the fluid but is exposed to the floating tissue (bands) from the ruptured amnion. This floating tissue can become entangled around the foetus.¹ The lesion can involve skin only or goes to deeper structure up to bone, which can lead to gangrene or autoamputation.³

This case is reported because of its extreme rarity and gratifying results if diagnosed and managed early. Despite the numerous descriptions of this syndrome in the literature, little is mentioned regarding its anaesthetic management.

CASE REPORT: A five-day-old female baby of weight 2.34 kg, full term normal vaginal delivery of a primigravida mother at 38.5 weeks' gestation and with normal APGAR 8/9.

Baby was found to have a gross swelling of foot ankle and lower third of leg (Image 1). There was deep constriction ring at lower third of leg with fracture of tibia and fibula (Image 2). Other associated defects were amputation of left index finger, defect in right ring finger, flat foot on right side. Preoperative investigations were: Hb-14.9, TLC-15000, Platelet count-89000. Blood Urea-49 mg%, Blood Creatinine-0.7 mg%, Na-137, K-3.8, Total Bilirubin-10.5 mg%, Direct bilirubin-0.9 mg%. Heart sounds were normal without any murmurs. Air entry was bilaterally

equal with no abnormal sounds. 2D Echo did not show any abnormalities.



Image 1



Image 2

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General anaesthesia was planned. Premedicated with inj. Glycopyrrolate 0.009 mg IV, inj. Ondansetron. 23 mg IV and inj. Fentanyl 4.6 µg IV. Induced with Propofol 5 mg IV + Sevoflurane (1-2%). Inj. Suxamethonium 5 mg IV given, Intubated with 3 mm uncuffed endotracheal tube orally and maintained with Oxygen, Sevoflurane and Atracurium. We managed our case by excising the constriction band around left leg and Z-plasty. Extubation was uneventful.

DISCUSSION: Type of deformities in ABS depends upon the time of amniotic rupture and part of foetal body entangled in amniotic bands. During first 45 days most severe cranio-facial malformations occur.⁴ Usually the constriction bands are confined to the skin and the soft tissues, but sometimes they are deep enough to cut off the normal vascular and lymph return resulting in chronic oedema of the limb.⁵ Constriction rings of soft tissue accompanied by distal oedema has occurred in our case. ABS can be diagnosed prenatally by ultrasound. Constriction bands are usually present since birth and may become more severe as the age of the child advances, so it is necessary to manage them at the earliest to prevent complication. Although several theories have been proposed to explain the genesis of ABS (Amniotic Band Syndrome), the most widely accepted view is that early rupture of the amnion results in mesodermic bands that emanate from the chorionic side of the amnion and insert on the foetal body, leading to constrictions, amputation and postnatal deformities secondary to immobilisation.⁶ Amniotic constriction band presents at birth and should be treated as early as possible, because the constriction bands are present at birth and become more pronounced as time passes.¹ Congenital heart defects, Renal anomalies, Haemangiomas, Polydactyly, cleft lip and palate can be associated with ABS.⁷ Aside from surgical correction of deformities, above-mentioned problems can perturb the anaesthesiologist.

CONCLUSION: Amniotic constriction band presents at birth and should be treated as early as possible, because it becomes more pronounced as time passes and leads to various deformity of the limbs and ends up with autoamputation. Excision of constriction band and Z-plasty is the treatment of choice. In our case, judicious anaesthetic management and good teamwork of Anaesthesiologist, Plastic surgeon & Paediatrician resulted in a successful outcome, and the child discharged successfully on 5th post-operative day.

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