Pseudoamniotic band syndrome after bipolar cord coagulation in monochorionic twins complicated by twin-to-twin transfusion syndrome

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DESCRIPTION

A 28-year-old primigravida presented at 24 weeks 3 days of gestation with spontaneous monochorionic diamniotic twin pregnancy and complaints of reduced fetal movements. Ultrasound (USG) examination revealed Quintero stage IV twin-to-twin transfusion syndrome (TTTS). After counselling, the patient successfully underwent selective fetal reduction of the recipient hydropic twin by bipolar cord coagulation (BCC) at 24 weeks 6 days of gestation. There were no intraoperative or immediate postoperative complications. Follow-up USG examinations did not show any evidence of chorioamniotic separation (CAS). However, at 29 weeks gestation (postselective fetal reduction day 32), she presented with preterm premature rupture of membranes. Antibiotics and steroid cover were started, after which she underwent lower-segment caesarean section at 29 weeks and 2 days of gestation in view of fetal bradycardia. A male baby weighing 980 g with Apgar scores of 4 and 6 at 1 and 5 min, respectively, was delivered.

Incidentally, a constriction band was noticed above the right ankle with gross oedema and cyanosis of the right foot; however, no necrosis was noted (figure 1A,B). After plastic surgery and paediatric surgery consultations, the constricting band was divided, followed by local mupirocin application at the constriction site and magnesium sulfate application over the edematous foot (figure 1C,D). At discharge, the oedema had subsided and the constriction site had re-epithelialised completely with intact sensory as well

Figure 2 (A, B) show a concentric contracture (black arrow in B) at the site of initial constriction with a normal appearing right foot.

as motor functions of the right foot. At 1-year follow-up, the right foot was normal both functionally and morphologically; however, a concentric contracture had developed at the site of initial constriction (figure 2).

Pseudoamniotic band syndrome (PABS) is an unusual iatrogenic problem, secondary to in utero fetal interventions with clinical, sonographic and histologic features similar to amniotic band syndrome. It is characterised by entanglement of fetal parts or umbilical cord in a sheet of detached amniotic membrane potentially resulting in serious consequences such as limb constriction/amputation, cord accidents or even intrauterine fetal death.¹ It is commonly seen following fetoscopic laser photocoagulation for TTTS with an incidence of 1.8%–3.3%, but can also occur following BCC, septostomy and amnioreduction.¹ Possible explanations include CAS at the entry site during invasive interventions with subsequent formation of fibrous bands from the surface of chorion, and unintended septostomy during the procedure.² A possible preventive measure could be avoiding perforation of the inter-amniotic membrane while inserting the fetoscope.

On follow-up, USG post in utero fetal interventions, a floating membrane possibly indicating septostomy or CAS should raise a reasonable degree of suspicion. Targeted, serial three-dimensional USG of the fetal limbs and umbilical cord should be done weekly as complications can develop over 4–6 weeks. An intensive fetal surveillance can lead to prompt diagnosis, counselling and treatment.³ After diagnosis of PABS is confirmed, weekly follow-up with colour Doppler should be performed to detect impaired blood flow in the distal part of the affected extremity.

Figure 1 (A, B) depict the constriction band above the right ankle with gross oedema and cyanosis of the right foot. No necrosis is noted. (C) shows the immediate postsurgical release appearance of the right foot while (D) shows the divided constricting bands.

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Once compromise in vascularisation is detected, possible antenatal management options include fetoscopic release of the pseudoamniotic band to save the fetal limb from amputation.¹

Learning points

- ▶ Pseudoamniotic band syndrome is similar to amniotic band syndrome and can lead to devastating consequences such as limb amputations or intrauterine death; however, this term is used when it occurs secondary to invasive in utero interventions.
- ▶ A high degree of suspicion is necessary for prenatal diagnosis in the postoperative period and follow-up with serial ultrasound is imperative for early detection.
- ▶ Fetal limb can be saved from serious complications such as amputation by in utero fetoscopic release of the pseudoamniotic band, if impaired blood flow is detected on follow-up ultrasound.

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