

INPLASY

Fetoscopic Release of Amniotic Bands Based on the Evidence – A Systematic Review

INPLASY202430002

doi: 10.37766/inplasy2024.3.0002

Received: 01 March 2024

Published: 01 March 2024

Ferrer-Marquez, F¹; Peiro, JL²; Ruano, R³.

Corresponding author:

Fernando Ferrer-Marquez

fernandoferrerm@gmail.com

Author Affiliation:

Division of Maternal-Fetal Medicine,
Department of Obstetrics,
Gynecology & Reproductive
Sciences, University of Miami Miller
School of Medicine, Miami, FL, USA.

ADMINISTRATIVE INFORMATION

Support - No support.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202430002

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 01 March 2024 and was last updated on 01 March 2024.

INTRODUCTION

Review question / Objective P: Patient with amniotic band syndrome in a prenatal period I: Fetoscopic release of amniotic bands in a prenatal period C: no comparisons O: Preservation of the affected limb and its function.

Rationale The Amniotic Bands syndrome (ABS) generated by the band around the fetus causes ischemia, which interferes with the vascular perfusion of the affected fetal region and could lead to a loss of functionality of the limb until its amputation. In some cases, the fetoscopic release of the band may allow the prevention of limb amputation, craniofacial malformations, and fetal death if the band is attached to the umbilical cord. However, due to a rare condition, it is difficult to evaluate the effectiveness of fetoscopy in treating ABS; mainly, no randomized clinical studies are available.

Condition being studied Amniotic band syndrome (ABS) is a spectrum of congenital anomalies that have amniotic bands in common. ABS is a rare disorder that occurs in 1/3000 to 1/15,000 live births(2). The pathophysiology of the disorder is still being debated. The Amniotic Bands syndrome (ABS) generated by the band around the fetus causes ischemia, which interferes with the vascular perfusion of the affected fetal region and could lead to a loss of functionality of the limb until its amputation. In some cases, the fetoscopic release of the band may allow the prevention of limb amputation, craniofacial malformations, and fetal death if the band is attached to the umbilical cord.

METHODS

Search strategy Three authors independently performed bibliographic searches of the Medline, Embase, Scopus, and Cochrane Library databases in English, Spanish, Portuguese, and Italian languages and publication type restrictions related to ABS. Keyword and free-text searches were

performed with combinations of the following keywords: amniotic band syndrome, ABS, amniotic band, congenital constriction band syndrome, congenital ring constrictions, amniotic band disruption, fetal intervention, fetoscopy, and fetoscopic repair.

Participant or population Fetuses with amniotic bands in a prenatal period.

Intervention Fetoscopy surgery.

Comparator No comparisons.

Study designs to be included Case reports and case series.

Eligibility criteria Keyword and free-text searches were performed with combinations of the following keywords: amniotic band syndrome, ABS, amniotic band, congenital constriction band syndrome, congenital ring constrictions, amniotic band disruption, fetal intervention, fetoscopy, and fetoscopic repair.

Information sources Medline, Embase, Scopus, and Cochrane Library databases.

Main outcome(s) Gestational age at diagnosis, fetal ultrasound and/or MRI findings, gestational age at time of fetal intervention, surgical technique of fetoscopic intervention, obstetric complications such as premature rupture of membranes and spontaneous preterm delivery (<37 weeks gestation), gestational age at delivery and perinatal outcome (umbilical Doppler changes or improvements and/or vascularization of any limb/s involved, postnatal anatomical description and neonatal survival).

Additional outcome(s) No more additional outcomes.

Data management We used open-source reference management software to manage bibliographic data (Zotero).

Quality assessment / Risk of bias analysis Three authors independently performed bibliographic searches per the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Strategy of data synthesis This systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Subgroup analysis There was no subgroup analysis.

Sensitivity analysis This systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Language restriction English, Spanish, Portuguese, and Italian languages were used.

Country(ies) involved United States.

Other relevant information No other relevant information.

Keywords Amniotic Band Syndrome (ABS); congenital ring constrictions; fetal intervention; fetoscopy; umbilical cord constriction.

Dissemination plans Publish this work to the scientific community.

Contributions of each author

Author 1 - Fernando Ferrer-Marquez - Conceptualization; methodology; software; validation; formal analysis; investigation; resources; data curation; writing original draft preparation and visualization.

Email: fernandoferrerm@gmail.com

Author 2 - Jose Luis Peiro - Conceptualization; validation; writing—review and editing.

Email: jose.peiro@cchmc.org

Author 3 - Rodrigo Ruano - Conceptualization; methodology; validation; writing—review and editing; supervision; project administration.

Email: rodrigorruano@hotmail.com