

Fetal Scoliosis: Natural History and Outcomes

Darren Lui, Samuel Walters¹, Benjamin Barkham, Tim Bishop, Jason Bernard, Christina Coroyannakis², Basky Thilaganathan²

¹T&O, St George's Hospital, London, ²Obstetrics & Gynaecology

INTRODUCTION:

Scoliosis can be detected on prenatal ultrasound, and may be associated with other spinal abnormalities such as hemivertebrae. It is poorly understood, with little known regarding its incidence and implications.

METHODS:

A retrospective cohort study was undertaken at a tertiary referral center in London. The computerized fetal medicine ultrasound database was retrospectively analyzed using the search terms "spine" and "scoliosis," between 1997 and 2021. The reports were manually reviewed and demographics of the mother, pregnancy, and outcome data were collated.

RESULTS:

During the 24-year study period, the total referral population served by our service was 600,000 pregnancies. Initial results yielded 189 scans, and after removal of duplicates and manual checking of reports, there were 123 cases of confirmed spinal deformities, with an incidence of approximately 0.2 per 1,000 fetuses (1 in 5000).

Of the 123, there were 58 (47%) that reached term and 65 (53%) which did not. Of those that survived to term, 35/58 (60%) had normal development and no other concerns. The remaining patients had other non-fatal abnormalities, including VACTERL association in 7 cases (12%). Of those that did not survive, only two patients did not have other significant abnormalities detected on prenatal scans. In most cases, there were multiple significant abnormalities, developmental problems, or chromosomal abnormalities, and the decision was taken for termination of pregnancy (51 cases, 78%).

DISCUSSION AND CONCLUSION:

This study represents the largest database review to date of prenatal scans for spinal abnormalities. The incidence of fetal spinal deformity is approximately 1 in 5000, and is associated with a 47% rate of survival to term. Prognosis is generally determined by the presence of other significant abnormalities.