

Spina bifida at the 10 Week Scan:

Preliminary data on the earliest prenatal screening

Fred Ushakov^{1,2}

1. Fetal Medicine Unit, UCLH, London, UK

2. London Pregnancy Clinic, London, UK

Objectives

To determine whether open spina bifida can be detected at 10 weeks, using systematic assessment of the fetal brain and spine at CRL 30.0–44.9 mm.

Methods

Retrospective analysis of 2,867 consecutive 10 Week Scans performed over five years at 10+0–11+1 weeks (CRL 30.0–44.9 mm).

All scans used combined transabdominal and transvaginal ultrasound with systematic assessment of fetal anatomy, including the brain and spine.

All scans were performed within the 10 Week Scan and NIPT protocol.

Results

Four cases of open spina bifida were detected at 10+1–11+1 weeks.

Cranial signs were consistent with early Chiari II malformation, including marked compression of the fourth ventricle on the axial plane at the level of the choroid plexuses and posterior-caudal displacement of the mesencephalon (crash sign). Spinal abnormalities were also detectable, with kyphosis present in two cases.

All diagnoses were subsequently confirmed. One fetus had trisomy 18. No cases of spina bifida were missed in this cohort.

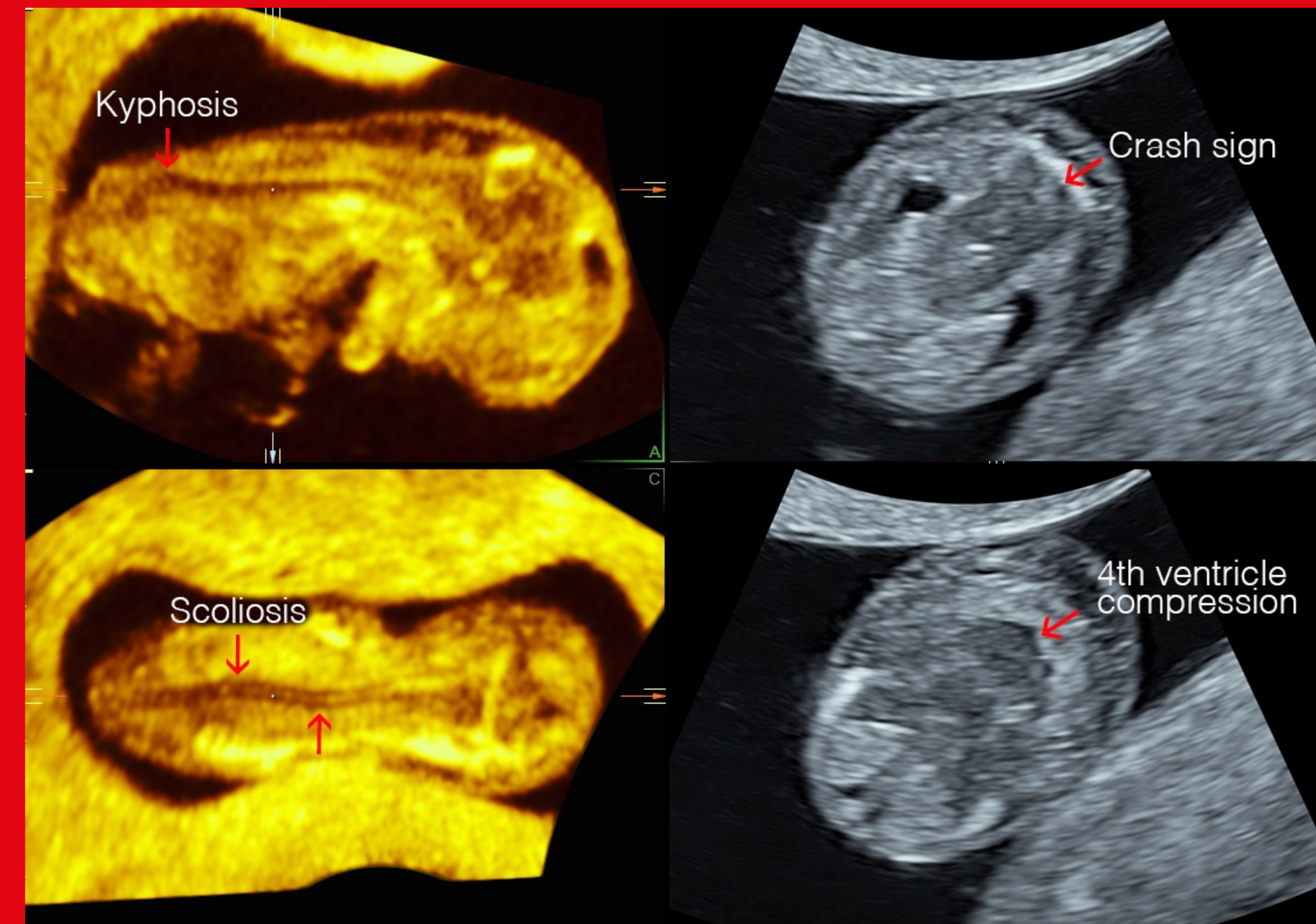


Figure 1. Early spinal and cranial signs of open spina bifida at the 10 Week Scan, including kyphosis, scoliosis, crash sign and 4th ventricle compression

Conclusions:

- Open spina bifida can be detected from 10 weeks
- Systematic assessment of the brain and spine at the 10 Week Scan may enable substantially earlier detection of open spina bifida