Objective

The aim of this study was to evaluate the sonographic appearance of the posterior brain anatomy in fetuses with cephalocele at 11 to 14 weeks of pregnancy.

Methods

This was a prospective study of a pregnant population undergoing first trimester scan in three referral centers for prenatal diagnosis, including both patients at low risk and patients referred because of an increased risk for chromosomal and anatomic defects.

In all cases of cephalocele, the three posterior brain spaces were examined.

Such anatomical spaces were assessed in the same mid-sagittal plane employed for measurement of NT.

Fetal karyotyping was offered in all cases.

Results

In 2/13 fetuses the cephalocele was frontal and parietal respectively. In 11 cases the bone defect was occipital. Among these, in 2 cases the three posterior brain spaces couldn’t be recognized due to the large size of the herniation. In the remaining 9 occipital cephaloceles one of the three posterior brain spaces were absent.

Conclusion

Cephalocele, especially when occipital, is associated with the sonographic finding characterized by the absence of at one of the three posterior brain spaces. Thus this sign is an important risk factor not only for open spina bifida and Dandy–Walker malformation but also for cephalocele.