Reminder of important clinical lesson

Sagittal synostosis

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Summary

This report concerns a 20-month-old boy, born at 31 weeks of gestation, being followed in the paediatric clinic because of prematurity. He was developing appropriately for his age and his head circumference was growing steadily (between the 75th and 90th centile), with weight and height on the 25th centile. An x-ray of his skull was performed at this stage because of his head shape, which was long and narrow (scaphocephalic)—in itself suggestive of sagittal synostosis. The x-ray confirmed the diagnosis. He was referred to a regional neurosurgical unit for further management. He had a successful surgical correction without major problems. It is to be emphasised that there is a higher morbidity and mortality if reconstructive surgery is not carried out at an early age, and therefore early diagnosis is vital in this congenital condition.

BACKGROUND

Sagittal synostosis is a congenital condition, spotted at 18 months of age in the present case, and should ideally be diagnosed in the first few months of life as late diagnosis can lead to problems of higher morbidity and mortality if reconstructive surgery has not been carried out at an earlier age. The shape of the skull is quite suggestive of different types of craniosynostoses, in addition to palpation of bony ridges at the sutures affected during early neonatal check-ups. Steady growth of head circumference between the 75th and 91st centile with normal developmental milestones and absence of signs and symptoms of raised intracranial pressure (not usually a feature of sagittal synostosis) probably led to the delayed diagnosis in this case.

CASE PRESENTATION

This is a report of a 20-month-old boy who was born at 31 weeks of gestation, and who was being followed-up in the paediatric clinic because of prematurity. He had had

continuous positive airway pressure for 7 days after birth with no other major problems. He was developing appropriately for his age, his head circumference was growing steadily (between the 75th and 90th centile), and his weight and height were on the 25th centile. It was decided to request an x-ray of the skull (figure 1) at this stage by the attending doctor because of the shape of the head (figure 1), which was long and narrow (scaphocephalic), which is in itself suggestive of the condition. The x-ray confirmed a diagnosis of sagittal synostosis. He was then referred to the regional neurosurgical unit for assessment and further management. He had a successful surgical correction performed (his parents were keen for a cosmetic correction) without major problems. Figure 2 shows the head shape from the age of 1 month up to 11 months of age, and figure 1 the shape at 20 months. It is to be emphasised that there is a higher morbidity and mortality if reconstructive surgery is not carried out at an earlier age, and therefore early diagnosis is vital in this congenital condition.

X ray skull sagittal view-18 months

Xray skull coronal view-18 months

Figure 1 Skull shape at 18 months on x-ray; skull sagittal and coronal views.

Figure 2 Skull shape at 1, 4, 7 and 11 months.

OUTCOME AND FOLLOW-UP

The patient had a successful surgical correction performed, with no major problems, and is doing well.

DISCUSSION

Fortunately, this type of craniosynostosis carries a good prognosis and is also the commonest type of craniosynostosis.^{1–3}

It is to be emphasised that there is a higher morbidity and mortality if reconstructive surgery is not carried out at an earlier age. In a study of 210 patients⁴ treated surgically, 155 patients were aged <3 months of age and had good cosmetic results. Patients older than 3 months needed more complex and aggressive procedures to achieve similar results and so a greater effort must be made to diagnose and treat these patients early. Sloan *et al*⁵ reported a median age of 147 days at first operation in their study of 250 patients who underwent surgical correction for craniosynostosis.

Steady growth of the head circumference between the 75th and 91st centile with normal developmental milestones and absence of signs and symptoms of raised intracranial pressure (not usually a feature of sagittal synostosis) probably led to the delayed diagnosis in this case. The shape of the skull is usually quite indicative of various types of craniosynostosis, in addition to palpation of the bony ridge at the suture affected.

Learning points

- ▶ The shape of the skull is usually quite indicative of various types of craniosynostosis.
- ▶ Normal developmental milestones and absence of signs and symptoms of raised intracranial pressure do not rule out the possibility of craniosynostoses, especially of sagittal sutures.
- ▶ Palpation of the bony ridge at the suture affected during early neonatal checks can help in early diagnosis of the condition.

Competing interests None.

Patient consent Obtained.

REFERENCES

1. **Hudgins RJ**, Burstein FD, Boydston WR. Total calvarial reconstruction for sagittal synostosis in older infants and children. *J Neurosurg* 1993;**78**:199–204.
2. **Ferreira MP**, Collares MV, Ferreira NP, *et al*. Early surgical treatment of nonsyndromic craniosynostosis. *Surg Neurol* 2006;**65**:S22–S6.
3. **Sloan GM**, Wells KC, Raffel C, *et al*. Surgical treatment of craniosynostosis: outcome analysis of 250 consecutive patients. *Pediatrics* 1997;**100**:E2.
4. **Alvarez-Garjón JA**, Cavadas PC, Vila MM, *et al*. Sagittal synostosis: results of surgical treatment in 210 patients. *Childs Nerv Syst* 2001;**17**:64–8.

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