Congenital Vault Depression - An interesting case report

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Congenital vault depression

- Faulty fetal packing, also known as a congenital vault depression, occurs in 1 in 10 000 births[1].
- It is often not recognised and misdiagnosed as a depressed skull fracture.
- As fetal bones are easily deformable, external pressure can result in a depression of the soft bones of the skull without causing a break in the cortex.
- Recognised causes of a congenital vault depression include the compressing force of a bony prominence of the pelvis, a uterine fibroid and the fetus's own hand, foot or the body part of a twin[2].
- Whilst various treatments have been reported to be successful, including surgical intervention[2], there is increasing evidence that a full and spontaneous resolution often occurs over the first few months of life, without leaving any sequelae.

Clinical presentation

- Our patient was a female Caucasian infant, born to non consanguineous parents at 41 weeks gestation by Caesarean section.
- During the routine postnatal check up, she was identified to have a skull depression measuring 5 cm in the right parietal region.
- Antenatal anomaly scans were normal.
- It was initially thought to be a depressed skull fracture.
- However, there was no history of instrumental delivery . There were no external signs of injury such as swelling, tenderness or bruises over the scalp.
- Cranial imaging in the form of low dose CT Scan was performed after discussing the clinical findings with a Radiologist

Cranial imaging

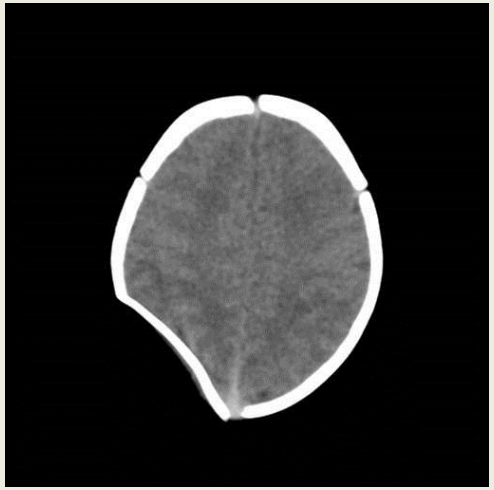


Fig 1. Non contrast CT head in soft tissue algorithm showing the bony abnormality in the parietal bone. No associated parenchymal abnormality was seen.

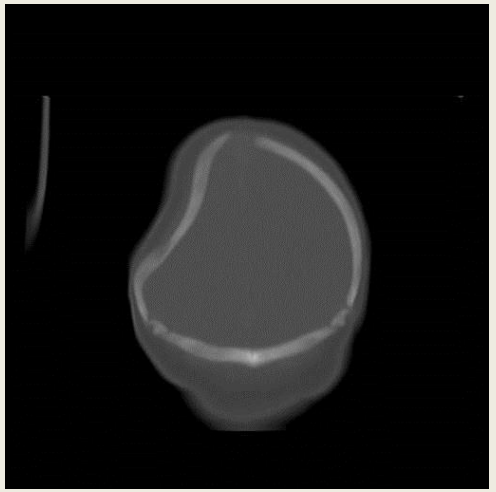
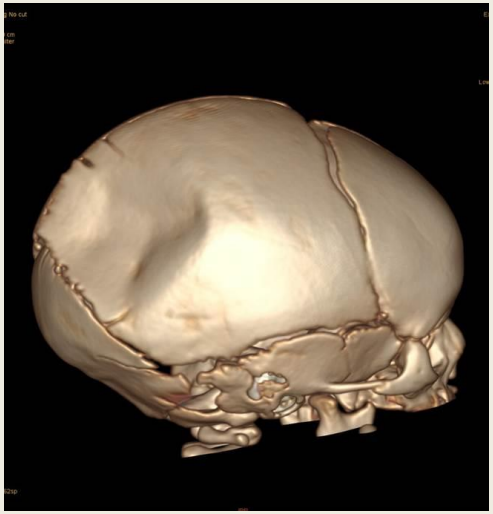
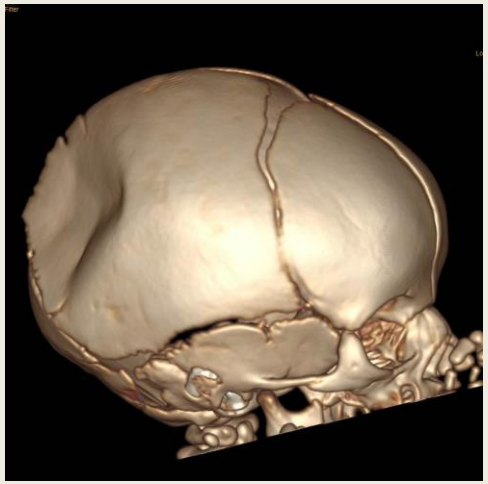


Fig 2 . Coronal CT image in bone algorithm shows depression in the right parietal bone. The image also shows open anterior fontanelle and patent lambdoid sutures





Figs 3 and 4. 3 D Volume rendered CT images showing the depression in right parietal bone. Image also show patent major sutures

Progress

- Our patient was assessed on 2 occasions after birth (1 month and 4 months of age) and was found to show normal development
- The deformity has resolved spontaneously without any intervention
- There was also a coincidentally low vitamin D levels with normal serum calcium, phosphate and alkaline phosphatase levels.

Picture showing complete resolution

Conclusion

Congenital skull vault depression is a recognised rare abnormality which forms part of a wide spectrum of skull vault anomalies[3].

Recognition of this anomaly prevents undue anxiety and may also prevent further investigations.

We would like to add to the body of evidence that is already available and improve the awareness among neonatologists about the dramatic presentation of this benign congenital abnormality.

References

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3**. Ronald B. J. Glass, MD et al.** The Infant Skull: A Vault of Information RadioGraphics 2004; 24:507–522