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(CASE REPORT)

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The surgical management of scaphocephaly in a seven-month-old infant

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Abstract

Introduction: Scaphocephaly is a cranial malformation resulting from premature closure of the sagittal suture. In some cases, the diagnosis is made late, leading to delayed corrective surgery. Due to the necessity of early surgical intervention, we present this condition to facilitate understanding by any physician and improve the quality of life for patients.

Observation: A seven-month-old female infant presented with worsening cranial vault deformity present since birth. Morphologically, the patient exhibited a narrow and elongated head, accompanied by a median frontal bulge, with a cranial circumference of 49 cm.

Standard frontal and lateral radiographs revealed an elongated skull with closure of the sagittal suture. CT scan revealed complete fusion of the sagittal suture with the classic appearance of "boat-shaped" skull.

We employed the standard H-type craniectomy method.

The surgical outcome, assessed 8 months post-intervention, was satisfactory both neurologically and in terms of psychomotor and aesthetic development.

Conclusion: Without intervention, scaphocephaly can lead to aesthetic discomfort and contribute to low self-esteem, as well as difficulties in social, academic, and professional integration.

Keywords: Scaphocephaly; Craniosynostosis; Cranial; Surgical; Infant.

1. Introduction

Scaphocephaly is a cranial malformation resulting from the premature closure of the sagittal suture. It is the most common form of craniosynostosis and the simplest anatomically, as it involves a single suture and affects only the cranial vault. Intracranial volume is preserved, and generally, there is no cerebral compression, at least in early childhood. It is recognizable at birth or in the early months of life. In some cases, diagnosis is delayed, leading to late corrective surgery. Due to the necessity of early surgical intervention, we present this pathology to facilitate understanding for all physicians and improve patients' quality of life[1].

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2. Observation

This concerns a seven-month-old female infant who presents with worsening cranial vault deformity since birth.

Medical History: The infant was delivered via high-risk childbirth with good adaptation to extra-uterine life. No similar cases are known in the family.

Clinical Examination: The infant was conscious, stable hemodynamically and respiratorily, and demonstrated good psychomotor development. No obvious signs of acute intracranial hypertension were observed.

Morphologically, our patient presents with a narrow and elongated head, associated with a median frontal bulge, with a cranial circumference of 49 cm.

Standard face and profile radiography show an elongated skull with closure of the sagittal suture.(figure 1).

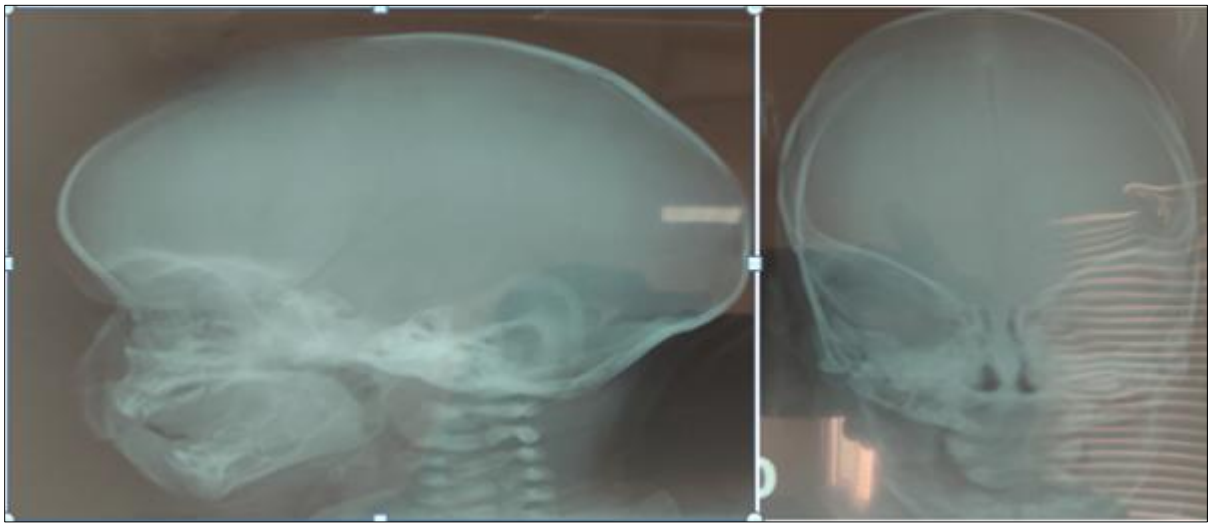
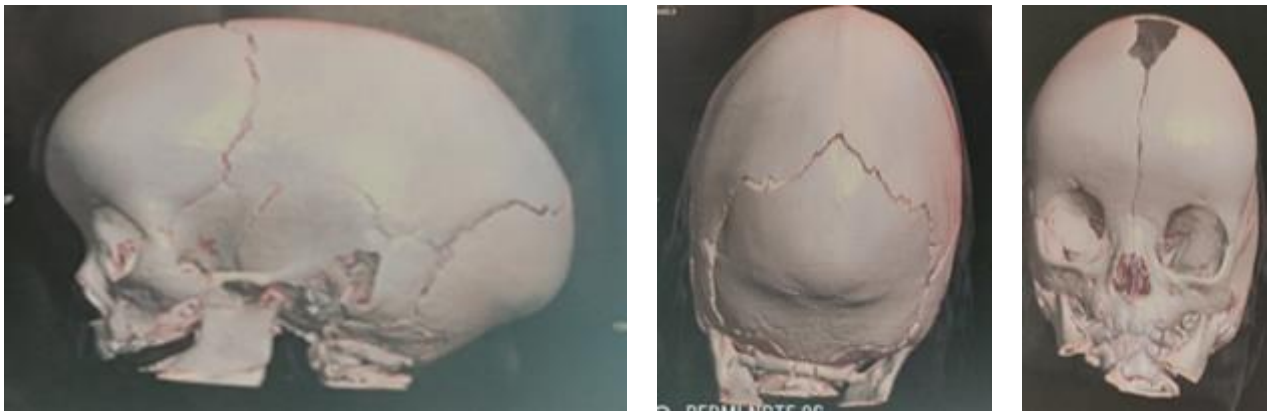


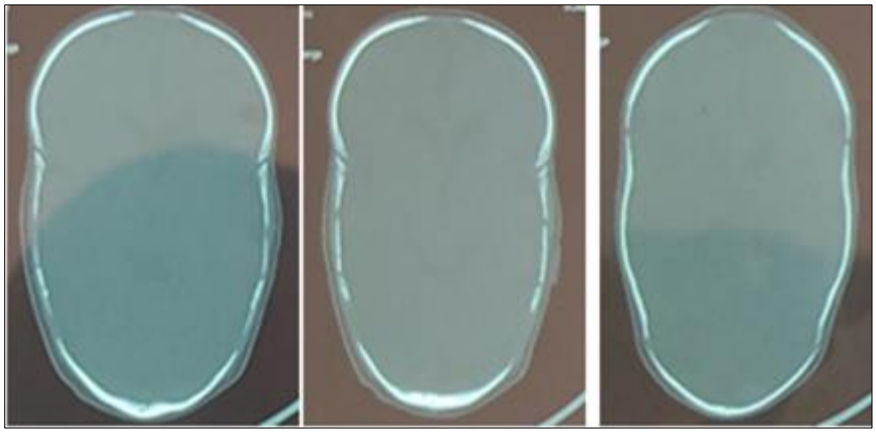
Figure 1 Standard face and profile radiography of scaphocephaly

A CT scan reveals complete fusion of the sagittal suture with the classic appearance of "boat-shaped skull" (Figure 2 :a,b,c,d).



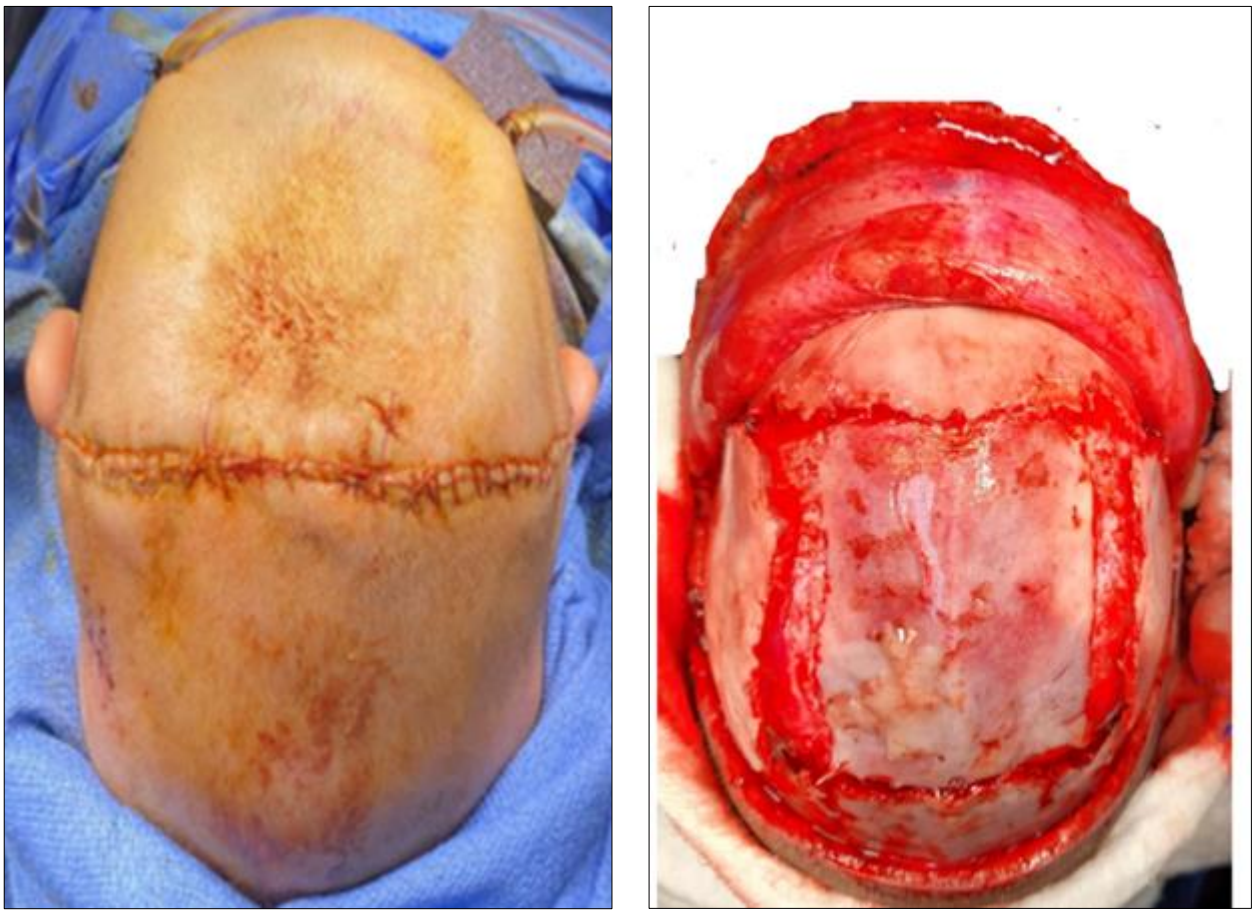
a b c

Figure 2 a,b,c (3D) : complete fusion of the sagittal suture



d

Figure 2d Typical image of a boat-shaped skull



a b

Figure 3 a,b: intraoperative image of an H-shaped craniotomy

The patient was positioned in ventral decubitus with a head positioning system that allowed us wide access to the anterior and posterior parts of the sagittal suture.

We utilized the standard H-shaped craniectomy method, involving a bi-coronal incision, creation of trephine holes for localization, and the H-shaped craniotomy was performed using a gouge clamp due to the unavailability of a craniotome. Subsequently, we proceeded with coagulation of the galea. Hemostasis was confirmed, and two external suction drains were placed ((Figure 3 a,b).).

Postoperatively, our patient received a blood transfusion and was then transferred to the pediatric intensive care unit for 24 hours of monitoring. The postoperative course was uneventful, with removal of the drains on the 2nd day after surgery.

The surgical outcome, evaluated 8 months after the intervention, was satisfactory both in terms of neurological function and psychomotor development, as well as aesthetically.

3. Conclusion

Without intervention, scaphocephaly can lead to aesthetic discomfort and contribute to low self-esteem, as well as difficulties in social, academic, and professional integration. Decompression is necessary within the first 3 to 6 months of life; beyond this period, interventions become more challenging.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

No other author has carried out a study on this subject.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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