Parietal Sinus Pericranii: Case Report

Thomas B. Megerssa, MD\textsuperscript{12}, Abdulaziz A. Hussein, MD\textsuperscript{1}, Son Eunik, MD,PHD\textsuperscript{12}

1. Department of surgery, Neurosurgical unit, Tikur Anbessa specialized hospital, Addis Ababa University, Addis Ababa, Ethiopia
2. Department of neurosurgery, MyungSung Christian Medical College, Addis Ababa, Ethiopia

Poster ID -1464
Disclosures

Nothing to disclose
Introduction

Sinus Pericranii (SP)

- A rare benign vascular anomaly
- Abnormal communication between intracranial dural sinuses and epicranial veins
- Usually midline involving superior sagittal sinus
- Commonly affects children
- Asymptomatic presentation, patients come to physicians because of presence of a scalp lump and mainly cosmetic concerns
- The main treatment option is Surgical correction
  - Cosmetic reasons
  - Prevention of complications- thrombosis, traumatic massive hemorrhage or air embolism

Clinical, radiologic and operative findings are discussed
Clinical Presentation

• A 5 year-old male child
• Presented with spontaneous painless scalp swelling on parietal area since birth
  • No history of head trauma.

• On examination- a soft, round, fluctuant, non-pulsatile and non-tender scalp mass measuring 7cm x 4cm, in the right parietal area crossing midline to the left.
  ➢ The mass was apparent in supine position but disappeared when he sat up.

A. Crying and straining increases the size of swelling

B. Attaining relaxed upright position reduces the size
Radiology – CT scan

- Right paramedian parietal scalp lesion measuring 4.5cm x 8.9 cm

- The mass has isodense attenuation relative to adjacent dural venous sinus (A,B,C)

- The underlying skull vaults were eroded
- More extensive erosion was seen on the outer table and focal on the inner table (D,E)
Radiology - MRI

A. Axial T1W
- Intermediate signal intensity with sign of fluid-fluid level

B. Sagittal T2W
- Hyperintense lesion with internal linear T2 hypointensity

C. FLAIR sequence
- The signal intensity of the lesion on T2W image is not suppressed

D. MRV
- The superior sagittal sinus were patent
Operative Findings

• The mass was found eroding the periosteum of the cranial vault.

• It was reddish and connected with multiple veins of the scalp, veins disconnected by bipolar coagulation and mass dissected from overlaying scalp.

• Subperiosteal dissection was made towards the base of the mass.

• The venous pool (star)
  • Isolated circumferentially with underling abnormal appearing bone partially exposed (black arrow)

• Multiple boney holes containing emissary veins (yellow arrow) sealed with bone wax

➢ Profuse bleeding encountered while the mass was dissected
Cosmetic Reconstruction

A. The Venous pool circumferentially tacked to the periosteum and surgicel (star)
B. Reinforced with a dural substitute
C. Bone cement/ Methyl methacrylate
   • Molded and fixed with plate and screw

Post-operative :- no evidence of recurrence on clinical examination in the last 1 year.
• Sinus pericranii (SP) is a rare benign vascular anomaly,
• Congenital or spontaneous SP is a disorder of the younger age group,
• Patients are usually asymptomatic and most present with cosmetic concerns,
• SP must be differentiated from:-
  Cavernous Hemangiomas, Angiomas, Meningoceles and Meningoencephaloceles...
• The diagnoses can be made based on clinical findings and confirmatory imaging
  ➢ Study of choice is MRI or angiography

• Surgery is the usual method of treatment
  Recommended for
  • Cosmetic reasons and
  • Prevention of complications
    • Thrombosis, traumatic massive hemorrhage or air embolism
• Surgical treatment involves
  • Excision of the lesion,
  • Obliteration of the bony defects through which it communicates with intracranial venous system,
  • Cosmetic reconstruction
Summery points

• Sinus Pericranii is a rare vascular malformation,
• Management of this lesion is surgical correction
  • Usually indicated for cosmetic reasons or prevention of complications
• Prior identification of this malformation based on clinical and preoperative radiologic findings is
  • Beneficial for proper planning
  • Avoids intra or postoperative complications,
  ➢ Massive hemorrhage which might lead the patient to death