

Introduction

Epidural hematomas (EDHs) involving the venous sinuses are uncommon and challenging to treat as risk of infarction, hemorrhage, or venous air embolism. Current literature consists of small case reports and series with variable results. We compare surgical and nonsurgical management and outcomes of superior sagittal sinus (SSS) and transverse sinus (TS) related EDHs at our institution to the relevant literature.

Methods

A retrospective review of EDHs involving the venous sinuses at our center was performed from 2013-2018. Patient stratification included mechanism of injury, presenting Glasgow Coma Scale (GCS) score, other injuries, and location and size of hemorrhage. Outcome data calculated by Chi-Square statistics yielded a significance of $p < 0.05$.

Learning Objectives

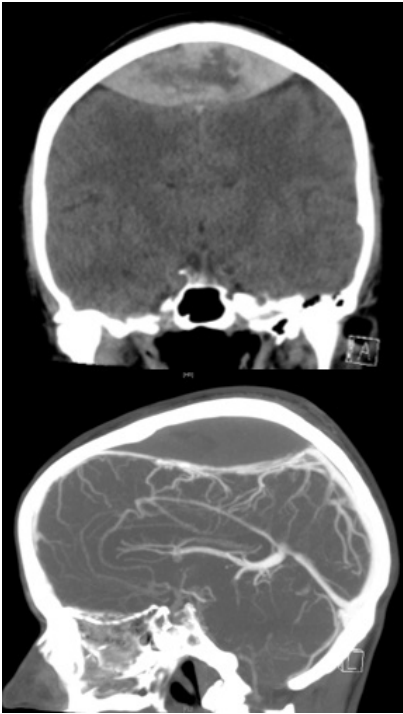
By the conclusion of this session, participants should be able to:

- 1) Understand the outcomes in patients with venous sinus EDHs
- 2) Discuss conservative versus surgical management of venous sinus EDHs
- 3) Identify which patients should be managed surgically

Results

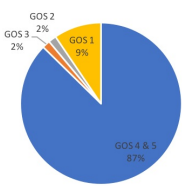
Of 268 patients identified, 32 had SSS (10) or TS (22) EDHs. Of the surgical patients (10), five had SSS EDHs and five had TS EDHs. No surgical complications occurred in this series. All but one were awake and alert at discharge with a Modified Rankin Score (mRS) of 0 or 1 at follow up. All of the nonsurgical patients (22) were discharged without neurological deficit, and had followup mRS of 0 or 1 except for one patient with prior disability. Compared to literature our patients had statistically better outcomes of GOS 4 or 5: TS (95% vs 76%), SSS (100% vs 87%).

Image 1

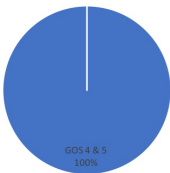


Coronal and sagittal CT/CTA of large vertex EDH with displacement of SSS

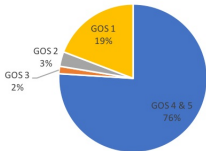
Vertex EDH: Literature Review



Vertex EDH: Our Series



TS EDH: Literature Review



TS EDH: Our Series

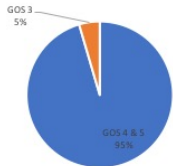


Image 2



Intraoperative view of vertex EDH exposure via bilateral craniotomies with a strip of bone left over the sinus, with progressive resection of the EDH from each end while applying "tack up" sutures to the residual bone.

Conclusions

Surgical and nonsurgical management of EDHs involving the venous sinuses are both viable options with good outcomes. Surgical intervention is based on location, size, neurological exam, expansion on serial imaging, and vascular imaging findings. Surgery has the potential for catastrophic complications, but all patients in our series had good outcomes at 6 weeks. Similarly, nonsurgical management had good outcomes, and our overall series demonstrates better outcomes with fewer complications than other similar series in the literature.

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