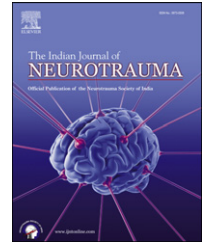


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Case Report

Delayed opposite frontal epidural hematoma due to bleeding from superior sagittal sinus with no cranial fracture – A case report

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ARTICLE INFO

Article history:

Received 6 June 2012

Accepted 15 October 2012

Available online 24 October 2012

Keywords:

Extradural hematoma

Delayed

Bilateral

Sinus injury

ABSTRACT

Extradural hematomas have a mortality of about 10%. If present in significant volume, they require urgent evacuation. Delayed extradural hematomas have similar significance. They are increasingly being diagnosed with routine use of CT scan. They may be formed after evacuation of contralateral hematoma and majority have associated cranial fractures. We report a case of delayed frontal epidural hematoma with superior sagittal sinus bleed, not associated with any skull fracture, formed after evacuation of a frontal convexity EDH.

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1. Introduction

Delayed extradural hematomas are well-described entity. By definition, a delayed hematoma is either not present or is in insignificant amount on initial CT scan, but is found in significant quantity on subsequent CT. Majority of the cases are associated with overlying cranial vault fractures. We report a rare situation, where bleed from anterior part of superior sagittal sinus caused frontal convexity extradural hematoma (EDH) on one side followed by a delayed EDH on the contralateral side following evacuation of the former,

without any radiological or intra-operative impression of associated cranial vault fracture.

2. Case report

A 24-year-old male patient presented in casualty half an hour after a road traffic accident in a drowsy state. A plain CT scan head showed an EDH of approximately 36 cc in the right frontal convexity with a minimal EDH across the superior sagittal sinus lying over the left frontal lobe

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<http://dx.doi.org/10.1016/j.ijnt.2012.10.001>

(Fig. 1A). The bone windows of CT scan showed no fracture of the vault (Fig. 1B). The patient underwent emergency right frontal craniotomy and evacuation of EDH. Intra-operatively, minor bleed from anterior part of superior sagittal sinus was controlled with surgical, gelfoam and dural-hitch sutures. In the post-operative period, patient was observed in ICU, but his drowsiness did not improve. Bedside mobile CT scan as a part of routine protocol at our center was performed about 3 h after surgery and it showed a delayed EDH, about 50 cc over the left frontal convexity (Fig. 1C) which was evacuated by left frontal craniotomy. Bleeding similar to the one on the right side from the superior sagittal sinus was observed, which was controlled successfully in a similar manner. Patient gradually improved after the surgery and was discharged 3 days following the second surgery when his GCS was 15.

3. Discussion

Delayed EDH is one which either is not present or is in insignificant amount on initial CT scan, but is found in significant quantity on subsequent CT scan. It comprises 9–10% of all EDH.¹ Almost half of them occur after a craniotomy to relieve another hematoma, possibly caused by loss of tamponade effect on the bleeding vessel² and are often related to a skull fracture of the overlying bone.³ Low ICP, high BP, rapid correction of hypotension favor development of delayed EDH. Low ICP can bring about intracranial bleeding by itself without trauma as in cases of extracerebral hemorrhage complicating shunt surgery, ventricular and subarachnoid drainage, spinal anesthesia, posterior fossa and spinal intradural operations.⁴

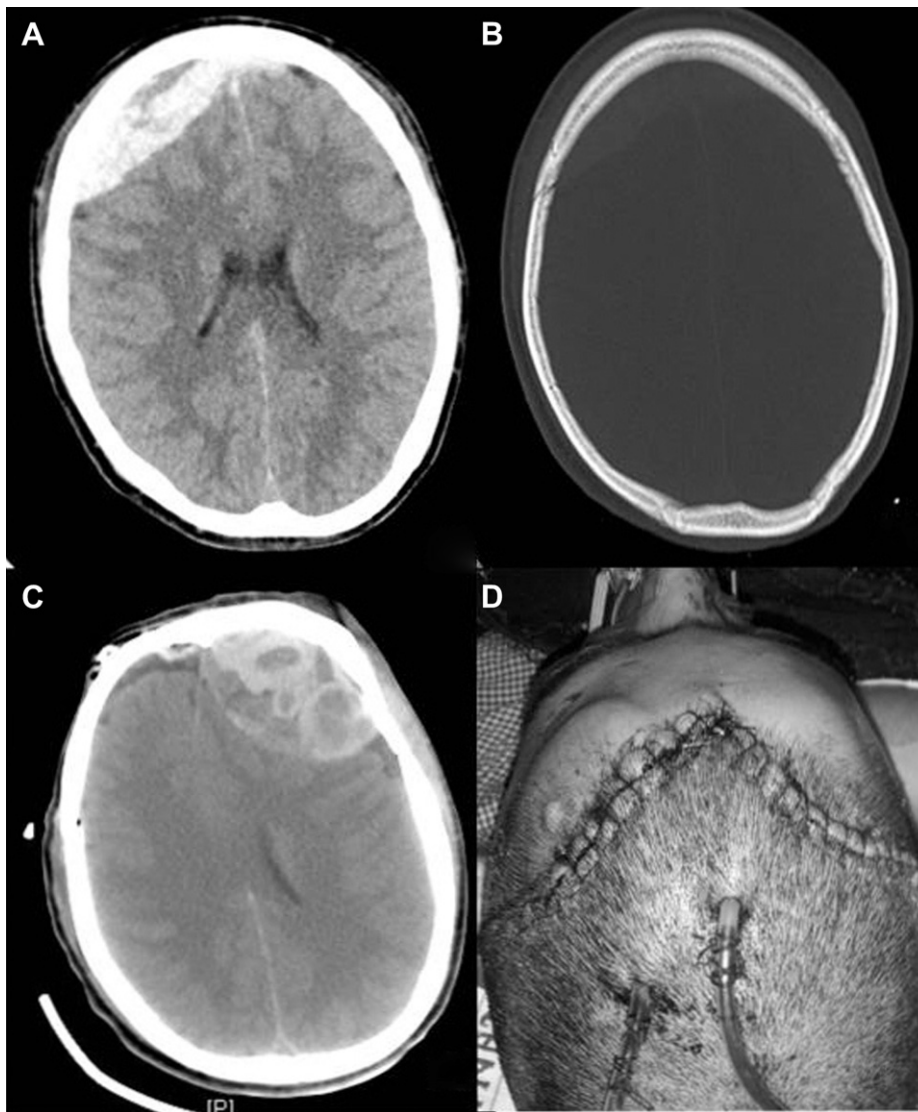


Fig. 1 – A. Plain CT head showing EDH of about 36 cc in right frontal convexity with minimal EDH across the superior sagittal sinus lying over the left frontal lobe. **B.** Bone windows showed no fracture of the vault. **C.** Delayed EDH as a mirror image, about 50 cc in the left frontal convexity, with evidence of right frontal craniotomy and evacuation of EDH. **D.** Bilateral frontal craniotomy wounds after the second surgery.

The cause of this contralateral delayed frontal EDH in our case was bleed from the superior sagittal sinus without any skull fracture. Such a contralateral delayed EDH in a non-countercoup fashion to the best of our knowledge has so far not been described in the literature.

High index of suspicion especially in a patient not improving neurologically or deteriorating is the key for seeking an early diagnosis of delayed EDH. Delayed EDH is being increasingly diagnosed with the routine use of post-op CT scan.^{5,6} Although intracranial pressure monitoring is a useful tool to detect such delayed EDH,⁴ an early CT preferably within 3–4 h as practiced at our center is advisable to diagnose and plan management for this potentially lethal entity.

Conflicts of interest

All authors have none to declare.

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