Case Report

Spontaneous Extradural Hematoma Caused by Dural Hemangioma: Case Report

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Summary

Acute intracranial extradural hematoma in absence of trauma is a rare entity with only few cases reported in literature. The various causes reported include: vascular malformation of dura, coagulopathies, sinus infection, middle ear or orbital infection, and tumor. We report a case of spontaneous extradural hematoma due to vascular malformation of dura. A 35 year old male patient presented with sudden onset of loss of consciousness. On examination, the patient was comatose with a Glasgow Coma Score of 3. Urgent CT scan revealed a large extradural hematoma, for which he was operated. Intraoperatively he had a torrentially bleeding vascular lesion (hemangioma). We ligated external carotid artery and than only we could remove the tumor. He was gradually weaned off from ventilator and was later on discharged from hospital. He continues to be in vegetative state till last follow up.

Key words: Extradural hematoma, vascular malformation

INTRODUCTION

Acute intracranial extradural hematoma in absence of trauma is a rare entity with only few cases reported in literature. The various causes reported include: vascular malformation of dura, coagulopathies, sinus infection, middle ear or orbital infection and tumor. We report a case of spontaneous extradural hematoma due to vascular malformation of dura.

CASE PRESENTATION

A 35 year old male patient presented with sudden onset of loss of consciousness. On examination, the patient was comatose...
with a Glasgow Coma Score of 3 and was hyperventilating. Patient was resuscitated and shifted for CT scan. There was presence of large extradural hematoma in temporo-parietal region. (Fig 1) He was shifted for immediate hematoma evacuation. As the hematoma was seen evacuated source of bleeding was identified to be a brownish red, spongy angioma, it was bleeding from multiple sites and could not be completely coagulated. Patient lost about 2 liters of blood in 15 minutes.

The area was packed with gauze and external carotid artery was ligated. This resulted in decreased bleeding. The hemangioma was removed in piecemeal. The angioma was in close proximity to transverse sinus and patient was hemodynamically unstable as he was having a BP of 80/60mmHg on inotropic support, no attempt was made to excise the lesion completely in order to prevent further bleeding. In postoperative period contrast enhanced CT scan was done which did not reveal any abnormal dural enhancement or any residual hematoma. (Fig 2) Carotid angiogram was not done as we had already ligated external carotid artery which was supplying the angioma.

MR angiography done in follow up failed to detect any abnormal vascular lesion. Histopathological examination revealed presence of angioma without any intervening brain tissue as it was extradural in location. The patient was gradually weaned off from ventilator, and discharged after 3 weeks, but still he is bed ridden and needs constant care.

**Figure 1:** CT scan showing presence of extradural hematoma in temporo-parietal region on right side.

**Figure 2:** Contrast enhanced CT scan showing postoperative changes without any abnormal area of enhancement.
DISCUSSION

Extradural hematoma is one of the common injuries following trauma. Spontaneous EDH is an uncommon entity with various mechanisms been proposed. Infections of sinus or middle ear were the cause of bleeding in some cases. In these cases, there was arteritis which lead to weakening of wall of middle meningeal artery leading to bleeding. Other proposed mechanisms of EDH formation in infection is progressive detachment of dura mater from the inner table of bone leading to accumulation of exudates.

Another etiology of spontaneous EDH is bleeding diathesis which includes hemophilia, Vitamin K deficiency, hypofibrinogenemia, and anticoagulation therapy.

Third etiology for formation of spontaneous EDH is vascular malformation of dura mater which can be arteriovenous malformation or aneurysm of meningeal artery. Rare case of EDH following external ventricular drainage has also been reported.

In our case, the cause of bleeding was a vascular malformation of dura. Although a few cases like that have been reported before we present this case to emphasize the difficulty encountered in managing these patients in absence of radiological intervention facility.

The vascular malformation we were dealing with is a dural angioma which is known to cause EDH. Angiographically it usually reveals dense vascularity, with flush and neovascularization. Extra cranially, these are usually located in middle cranial fossa base around the cavernous sinus, other reported rare sites include suprasellar region, tentorium cerebelli and convexity dura.

Surgery for these lesions should aim at complete excision otherwise severe bleeding after difficult to control can occur. The surgery is quite safe if adjuvant endovascular therapy is used for preoperative embolization. In our case as well we faced this problem as it was bleeding; we could not achieve its

Figure 3: Histological section of the cavernous angioma revealing fibrous blue stained walls of the vessels with no intervening brain parenchyma (10X)
excision. In absence of facility for embolization, ligation of external carotid artery appears to be a safe step in the centers where the facility is not available.

CONCLUSION
Angioma is one of the rare causes of extradural hematoma. It must never be removed piece meal but if faced with a problem of already ruptured angioma, interruption of feeding vessels can be of great help in achieving hemostasis.

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