

Unusual Clinical and Imaging Presentation of Chronic Subdural Hematoma

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Abstract

Various clinical and radiologic presentations of chronic subdural hematoma (SDH) are reported in the literature. Therefore, sometimes the presentation of a patient with chronic SDH often creates confusion regarding decision making. Here, the authors present three cases of chronic SDH, in which the clinical presentation, radiology, and operative findings were unusual. In the first case, the patient presented with acute extradural hematoma like clinical as well as radiologic presentation but intraoperatively found to have chronic calcified SDH, whereas another case with history of bilateral ventriculoperitoneal (VP) shunting at childhood presented with large head with discharging sinus at the forehead. Radiologic and operative findings were very much unusual. Intraoperatively, the bilateral subdural collection was found to have fungus-like projections with subdural space communicating with the forehead sinus. In another case, a 10-year-old girl with history of VP shunting at age of 6 months presented with left hemiparesis of subacute onset. Computed tomographic (CT) scan revealed biconvex lesion at the right parietal region intraoperatively. The authors found the shell-like lesion with inner and outer membrane calcified, within which the subdural collection was present. In these three cases, they observed the very unusual mode of presentation of chronic SDH, and in the literature such mode of presentation and operative findings of such type are very rare.

Keywords

- ▶ chronic subdural hematoma
- ▶ chronic calcified subdural hematoma
- ▶ third nerve palsy
- ▶ chronic subdural hematoma with fungus-like mass

Introduction

The article by Kumar and Alugolu¹ described atypical neurologic presentation of the chronic subdural hematoma (SDH) in 2014, which confirms the statement that the medicine is not like mathematics. Sometimes radiologic findings do not correlate with neurologic symptom; therefore, every patient is to be considered individually for correct management.

A widely accepted classification divides SDHs into acute, subacute, and chronic according to the time elapsed between the head injury and the onset of clinical symptoms.

Here we present three patients with chronic SDH, with each case having its unique presentation.

Aim and Objective

Calcified chronic SDH is a rare but known entity. It has been estimated to represent 0.3 to 2.7% of chronic SDHs, since its first description in 1884. Since then, approximately 100 cases have been reported till date.

Chronic SDH cases also present in various modes. Here we present three unusual cases of chronic SDH that help us

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know the divergence of different clinical and imaging characteristics of chronic SDH.

Case 1

A 60-year-old nondiabetic, nonhypertensive, and nonalcoholic male patient presented to emergency with history of sudden-onset loss of consciousness and fall with left-sided hemiparesis, with Glasgow coma scale (GCS) of E1V1M2 with left hemiparesis and right-sided complete third nerve palsy. Urgent computed tomographic (CT) scan of the brain plain revealed hyperdense biconvex extra-axial lesion in the right temporoparietal region (►Fig. 1), which is very much suggestive of acute extradural hematoma (EDH), but history of trivial trauma following unconsciousness leads us to some amount of confusion regarding the pathology. We went for emergency right-sided fronto-temporo-parietal craniotomy that revealed no evidence of EDH, but the dura was found to be tense. Durotomy was done, which revealed semisolid hematoma with muddy consistency and having gritty sensation. Whole of the hematoma evacuated inner membrane also excised here as it was calcified. The patient's GCS and left hemiplegia improved to the power of 4/5 within 48 hours of operation. Right third nerve palsy persisted. In 6-week follow-up, the patient became completely ambulatory with complete recovery of left hemiplegia and partial recovery of right third nerve palsy.

Case 2

A 30-year-old male patient with history of ventriculoperitoneal (VP) shunt at age of 5 years presented with imbalance, lower limb weakness, and discharging pus from the right forehead at OPD. CT scan revealed bilateral biconvex hypodense extra-axial lesion with hyperdense wall. Bilateral craniotomy was planned, which revealed subdural collection with fungus-like material embedded in the inner membrane and communicating with sinus tract of the scalp. Subdural collection with mass was evacuated, and inner membrane was removed (►Fig. 2). Postoperatively, the patient developed sepsis on sixth postoperative day and succumbed due to septicemia.

Case 3

A 10-year-old girl presented with recent-onset headache and left-sided hemiparesis for 1 week. She had a history of shunt surgery for congenital hydrocephalus at age of 6 months. CT scan showed right-sided extra-axial biconvex lesion with calcified wall. Craniotomy showed thickly calcified chronic calcified SDH and whole of the calcified mass was excised (►Fig. 3). Excised specimen showed shell-like mass with the outer and inner membrane being calcified within which there was collection of fluid. Postoperatively, the patient recovered well, left hemiparesis improved, and the patient was discharged on 10th postoperative day.

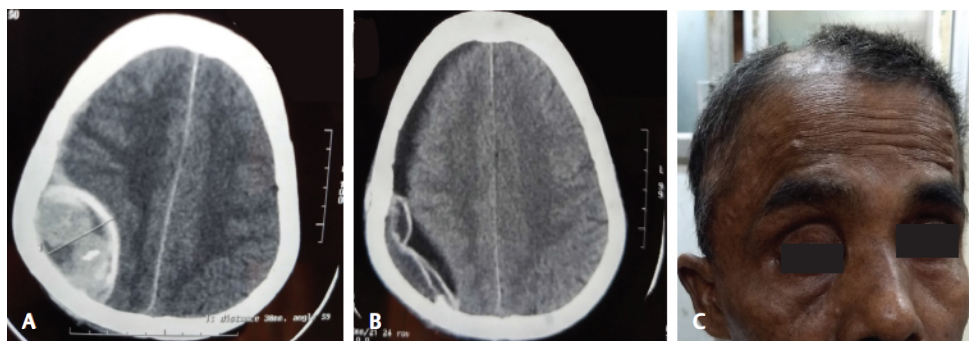


Fig. 1 (A) Preoperative CT scan showing hyperdense biconvex extra-axial lesion in right parietal region. (B) Postoperative image showing complete evacuation of SDH with remnant of membrane. (C) A 6-week F.U. image of patient with partial recovery of right third nerve palsy. CT, computed tomography.

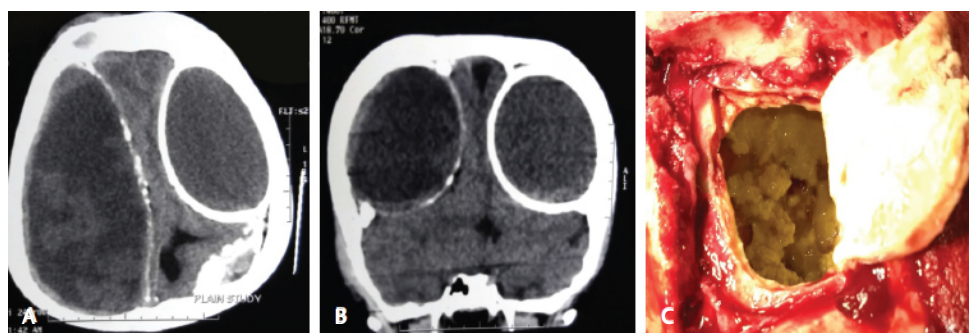


Fig. 2 (A, B) Preoperative CT showing bilateral biconvex extra-axial lesions with calcified wall. (C) Intraoperative image showing subdural collection with fungus-like mass. CT, computed tomography.

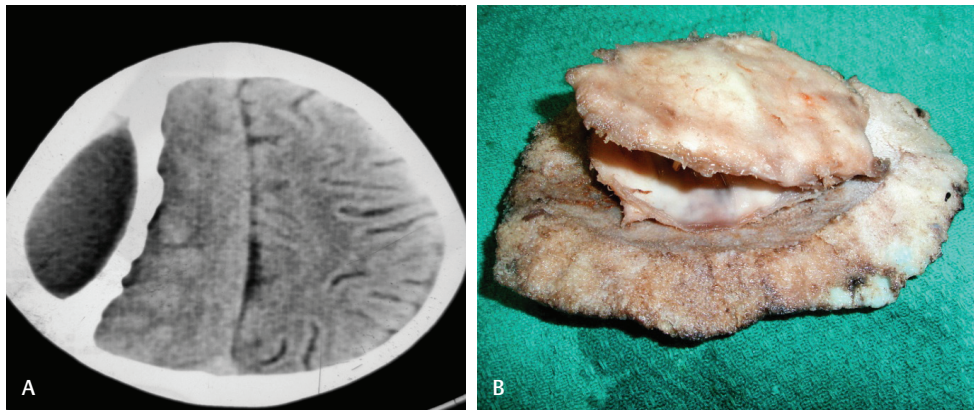


Fig. 3 (A) Preoperative CT showing extra-axial lesion with calcified wall. (B) Intraoperative image of excised mass with both side calcified in between that the fluid was present. CT, computed tomography.

Discussion

Although surgical treatment is unanimous for chronic SDHs, therein lies some doubt on it being applied to calcified chronic SDHs. The optimal surgical procedure for this type of lesion, classically referred to as “armored brain,”² has not been established due to the limited reexpansion of the brain after surgery. This is probably related with the presence of a thick calcified inner membrane, which is frequently adherent to the cortical surface of the parenchyma.³ Surgical removal of the calcification is difficult, and it could damage the underlying cortex. Hence it should not be performed routinely.³ Treatment of a symptomatic expanding hematoma in these cases presents the treating physician with a difficult problem, and it may require a somewhat different approach from usual.

Removal of the calcified chronic SDH reduces the mass effect and cerebral irritation and increases the cerebral blood flow; thus, patients can improve neurologically after surgery.⁴

In all these cases, the typical imaging characteristics of chronic SDH were not found; rather, imaging characteristics of all three cases were more like extradural mass.

In all these cases, craniotomy was needed rather than burr hole and evacuation, which is the most common treatment for chronic SDH.⁵

In these three cases, there was one mortality and other two patients recovered from their symptoms.

Conclusion

Chronic calcified SDH are rare entities, which are well tolerated due to their indolent nature even though the radiologic

findings might be quite impressive and without direct clinical correlation.

In all three cases, we found different clinical, radiologic, and intraoperative picture. These cases often create confusions and dilemma in treatment modality, but in our experience two out of three cases improved with surgical evacuation of the long-standing chronic SDH.

Conflict of Interest

There is no area of conflict in this article, and we have not submitted this article anywhere else.

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