A Rare Entity: Ossified Chronic Subdural Hematoma in an Adult

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Summary

Ossified chronic subdural hematoma is a rare complication of chronic subdural hematoma rather than calcified form with an estimated rate 0.8-10% for both. We reported a 42-year-old female admitted to our clinic for severe headache, progressed in 2 years. The only trauma the patient had was that a big stone was felt to her head when she was 5-years-old. Neurological examination was normal. Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) scan revealed an ossified lesion. The previous diagnosis was calcified meningioma. The ossified lesion completely removed with a right frontoparietal craniotomy. The pathological diagnosis was bone. Postoperatively the patient was neurologically intact with no headache. Calsified or ossified chronic subdural hematomas can be seen as a space-occupying lesion over the cerebral convexity mimicking calvarial mass, so these lesions should be considered in the cases with an amnesia of trauma. We reported this case as it is extremely rare.

Key words: Ossification, chronic subdural hematoma, calcified meningioma

Nadir Bir Durum: Eriskin Olguda Ossifiye Kronik Subdural Hematom

Özet


Anahtar Kelimeler: Ossifikasyon, kronik subdural hematom, kalsifiye menengiom
INTRODUCTION

Chronic subdural hematoma (CSDH) is one of the most common types of intracranial hemorrhage with an annual incidence of 0.005 % in the general population and 0.058 % for those aged 70 years and older (7). Although the frequency of chronic subdural hematoma calcification is reported with an incidence of 0.3-2.7%, ossified one is extremely rare (12), and more frequent in children and young adults. First case was described in 1884 as an autopsy finding, and in 1930 Goldhan reported the first operation for a calcified subdural hematoma in an 11 year old child (5,15). In the literature there are about a hundred chronic calcified subdural hematoma cases reported, but there are only sporadic reports of ossified CSDH (12).

CASE PRESENTATION

We reported a 42-year-old female admitted to our clinic for severe headache, progressed in 2 years. She had sustained a head trauma, a big stone was felt to her head, when she was 5-years-old and no radiological intervention was done until then. She did not have any symptoms until the last 2 years. Her neurological examination was normal. Plain skull radiograph of the skull revealed a plate of calcification extending through the right frontoparietal region. CT scans showed a hyperdense lesion (Figure 1) and in MRI the lesion was hypointense on T1 and T2 weighted images (Figure 2).

A craniotomy was made in the right frontoparietal region. As the bone flap was removed, the dura mater was normal and intact, but after opening of dura mater a stony crust-like hard mass covering the convexity was seen (Figure 3). The brain was compressed by this lesion. The lesion separated from the surrounding tissue with a careful dissection and was exposed in its entirety, measuring 6 x 10 x 1.6 cm (Figure 4). Pathological evaluation revealed as a typical bone structure with formation of Haversian canals surrounded by osteoblasts. Postoperative course was uneventful.

Figure 1: Preoperative cranial CT scan showing a hyperdense mass in the right frontoparietal region.
Figure 2: Preoperative T2-weighted axial MRI image demonstrating a mass lesion in the right frontoparietal region.

Figure 3: Intraoperative image showing an ossified subdural mass lesion.
DISCUSSION

CSDH can be seen especially in the older individuals with a history of head trauma about 50-75 %\(^{(10)}\). Calsified or ossified form is a rare entity. In the etiology of these forms, although trauma is the frequent cause, Yilmaz et al. had reported two cases of calsified CSDH after ventriculoperitoneal shunt used for hydrocephalus\(^{(18)}\).

In the literature, many different theories for the pathogenesis were suggested like pachymenenchitis or metaplastic ossification\(^{(1,4,8)}\). Although the pathogenesis of calsification or ossification is not clear, vascular, metabolic and local factors are considered responsible for this process\(^{(1,9)}\). Hematoma may progress from hyalinization to calsification and then to ossification with the irritation of tissue probably. After the hemorrhage, calsification may occur in 3 to 12 months, and few years are needed for ossification after calcification\(^{(1,6,13)}\). Microcirculatory disorders like poor circulation, absorption and vascular thromboses may be the cause of the calsification with calcium depositing\(^{(1,12,17)}\).

Although most of the patients with ossified CSDH remain asymptomatic, headache, epileptic seizure, dysphasia, hemiparesis, gait disturbance and mental retardation are also notified symptoms\(^{(6,14)}\) depending on the mass effect and cerebral irritation. Celik et al. had reported a patient with ossified CSDH, admitted for epileptic seizures occurred three years after a minor head trauma\(^{(2)}\).

In the differential diagnosis of calsified extra-axial space occupying lesions, calsified epidural empyema, meningioma, calsified arachnoid cyst, dermoid, Langerhans cell histiocytosis, malignant tumors, some kind of metastases, posttraumatic masses, anjiomas, atretic cephaloceleces and sinus pericranii should be considered\(^{(13)}\).

Surgical treatment is advisable in symptomatic cases with careful dissection of dense adhesions to the brain surface\(^{(11)}\), although some authors support that removal of calsified CSDH is not beneficial\(^{(3,6,16)}\) except acute or progressive neurological symptoms. The main difference between calsified and ossified CSDH is that ossified hematoma is independent from its surroundings and can be removed without causing bleeding.

Severe trauma of the skull and permanent headaches should lead to a detailed examination, and symptomatic ossified CSDH should be treated surgically.
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REFERENCES