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Calcified Chronic Subdural Hematoma: A Case Report

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Abstract

Calcified Chronic Subdural Hematomas (CCSDH) are uncommon subdural hematoma (CSDH). It is believed that they account for between 0.3% and 2.7% of all CSDH. Increased intracranial pressure, seizures, and nerve damage are all possible clinical manifestations. We present the case of a 65-year-old man who, three months before he began experiencing motor function issues in his left limbs, had a history of a fall injury. In the right cerebral hemisphere, CT scans revealed a sizable subdural collection surrounded by a calcified inner membrane. The patient's clinical and radiological symptoms improved after this collection was successfully and totally eliminated. Subdural hematomas rarely calcify. This odd lesion was surgically removed, and the patient's symptoms progressively and totally subsided, restoring his neurological state. Based on published examples and our personal experience, we feel that surgical therapy in symptomatic patients is important and viable, often resulting in patient improvement.

Keywords: Chronic Subdural Hematoma, Hematoma, SDH

Only 0.3–2.7% of all CSDHs [1] are caused by calcified chronic subdural hematoma (CCSDH), making it a very uncommon condition. Headache, fatigue, weakness, numbness, gait disruption, dysphasia, seizures, memory impairment, disorientation, and unconsciousness are all symptoms of calcified CSDH. [2] Only surgery can alleviate the symptoms of CCSDH. It's true that many people feel better following surgery. [3, 4]

Traditional "armoured brain" lesions are difficult to operate on because the brain can only re-grow so much after being cut open and because of a lack of room for the brain to grow. [4, 5] The development of calcified subdural deposits that limit brain growth despite drainage characterizes the condition known as "armoured brain syndrome." The conventional way of treating such cases has been cranial surgery (craniotomy) or the drilling of calcified membranes [6], both of which might cause damage to the brain's underlying tissue.

A 65-year-old man reported with symptoms of neurological decline, including altered sensorium over the course of 7 days and a 1-month loss of motor function in his left limbs. During surgery, a sizable subdural collection was removed from the right cerebral hemisphere. The membrane within of the collection had calcified over time.

Case Report:

For a month before to his hospitalization, a 65-year-old man had experienced progressively

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worse motor function in his left limbs, and for the previous seven days, he had displayed serious neurological degeneration manifesting as an altered sensorium. His condition required the expertise of the neurosurgeons at Bharatpur's College of Medical Science. The patient had a GCS of E4V3M5 and hemiparesis of the left side of his body. Subdural collection with inner calcification was seen on CT scan, located in the right frontoparietal region (Figure 1).

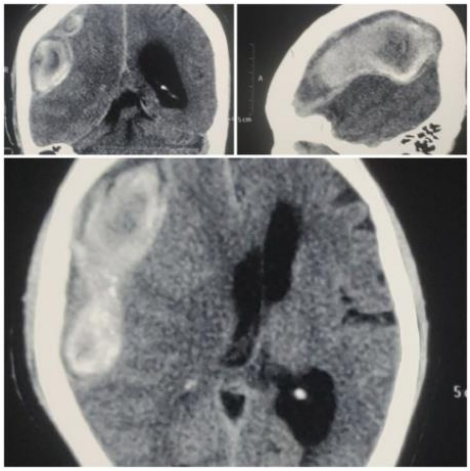

Figure 1: CT of Brain showing mixed density lesion with a calcified rim in the right fronto-parietal region

The hematoma's imprint was seen on the "armored dura" following a right fronto-parieto-temporal craniotomy. The calcified capsule of the CSDH was revealed by making curvilinear incisions in the dura, revealing an "armored dura" with the hematoma's mould firmly adhered to the inner surface. Subacute hematomas at various stages were visible once the capsule was opened. However, the hematoma was removed without harm to the brain because the arachnoid membrane was still present and not linked to the hematoma. In retrospect, the opaque, dark brown fluid in the lesion was an old hematoma (Figure 2).

Figure 2: Intra-operative procedure of evacuation of calcified chronic subdural hematoma

The entire calcified hematoma was removed. And post-operative CT scan shows complete removal of hematoma and the patient showed progressive clinical and radiological improvement afterward (Figure 3).

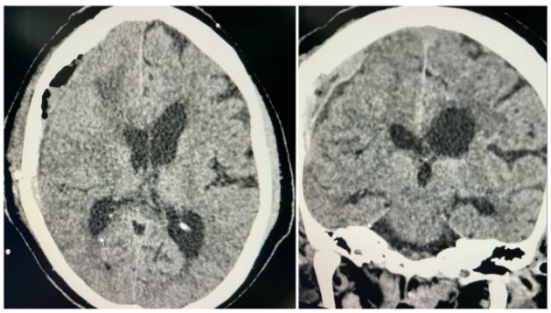

Figure 3: Post operative CT scan of the Patient

Discussion:

Most of the time, a calcified chronic subdural hematoma shows up as a seizure, dementia, mental retardation, headache, or hemiparesis. However, it can sometimes be found by accident without any symptoms.[7, 8] Calcified chronic subdural hematomas have a mysterious timetable for calcification development. However, if the tissue around the hematoma becomes inflamed, the hematoma may change over time from hyalinization to calcification and then to ossification. After a haemorrhage, calcification might take anywhere from several months to a number of years to set in. [8,5]

Hyalinization or calcification of the hematoma's surrounding connective tissue membrane has been observed in previous studies of CSDH. [10] As a result, this case is extremely distinctive for elucidating the pathophysiology, therapy intervention, and anticipated outcome of CCSDH due to the unique relationship between the two conditions. Although the precise cause of CCSDHs is still unknown, many studies point to the role of intravascular thrombosis in the calcification and ossification that occurs in the subdural region as a contributing factor. [11]

According to research, calcium particles form and hyalinise connective tissue under the subdural hematoma content due to inadequate circulation. About 6 months after the first bleed, depending on a number of conditions unique to each patient, the patient will begin to experience significant calcification as a result of the accumulation of microscopic calcium deposits. Rarely is the final stage of calcification, ossification, mentioned in scientific literature. [12]

Even though there are different ideas about how to treat a calcified chronic subdural hematoma, older people with no symptoms and no new or worsening

neurological problems should be watched. People with acute or progressing neurological disorders and people with intracerebral hematoma should think about surgery to stop further brain damage. [7, 8, 13]

When a calcified chronic subdural hematoma is surgically removed, it reduces the mass impact and irritation of the brain and improves blood flow to the brain. This helps the patient's neurological health. [8]

Recurrent bleeding is one of the most common postoperative consequences for chronic subdural hematoma surgeries. It is hypothesized that the primary cause of recurrent haemorrhage is inadequate brain expansion after hematoma drainage, which results from prolonged compression. However, due to the rarity of ossified subdural haemorrhages, there is a lack of data on the recurrence rate in the published literature. Repeated bleeding and subdural fluid collection should be distinguished from one another in patients with persistent subdural haemorrhage. Sometimes it can take weeks or months for the leftover fluid to completely disappear. This means that the control CT's residues should be left alone unless there is evidence of clinical deterioration. [9]

In our patient, collection of CCSDH was successfully and entirely removed surgically, and the patient thereafter demonstrated increasing clinical and radiological improvement.

Conclusion:

Chronic calcified subdural hematomas are rare, indolent, and well tolerated despite their radiologic characteristics and lack of clinical correlation. This type of lesion was removed, curing the patient's complaints and restoring his neurological condition, making him independent. We think surgical treatment in symptomatic individuals is vital and practicable, often leading to patient improvement. Though its genesis and treatment are unknown, this lesion may require surgery to stop severe bleeding episodes and delay or stop its growth.

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