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CALCIFIED CHRONIC SUBDURAL HEMATOMA WITH SUBACUTE PRESENTATION: A CASE REPORT

Neurosurgery

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ABSTRACT

Chronic Subdural Hematomas (CSDH) Are Very Common Following Many Etiologies but Calcified Chronic Subdural Hematomas (CCSDH) are very rare Ranging From 0.3-2.7% incidence and Less Than 150 Cases Have Been Reported So Far In Literature. Although Diagnosis and Management of Chronic Calcified Subdural Hematomas Are Not Difficult, many times it poses challenges. We Report A 63-Year-Old Male Patient with Progressive Right Sided Weakness for 18 months with Computerized Topography (CT) Scan Showed Large Subdural Collection with Calcifications Which Subsequently Underwent Digital Subtraction Angiography (DSA), Magnetic Resonance Imaging (MRI) Scan and Complete Surgical Removal.

KEYWORDS

Calcified Chronic Subdural Hematoma, Calcification.

INTRODUCTION

Chronic Subdural Hematomas Are Very Common Disease Occurring Spontaneously, Following Trauma and Ventriculoperitoneal Shunt and Post Cranial Surgeries with incidence of 1.72-20.6 Per 100,000 Persons Per Year. But Sometimes Calcification May Occur Over the Outer Layer of Membrane or Within Collection Which May Occur From 6 months To Many Years [1]. The Exact Etiology and Pathogenesis of Calcification Remains unknown, it was first reported by a Bohemian Pathologist Carl von Rokitansky in 1884[2]. Due To Its Appearance Sometimes It's Called Armoured Brain [3] or Matryoshka Head After Russian Nesting Dolls [4]. Though Limited Cases Have Been Reported Majority of Cases Are Asymptomatic and Surgical Management Is Advocated to Those having Mass Effect or Neurological Deficit. In Article Published in 2020 by Turgut et al Total 114 cases Have Been Reported [5]. The Total Incidence of Calcification in Chronic Subdural Hematoma Is About 02.-2.7% [6]. We report a case who presented with neurological deficit and was treated surgically with craniectomy and complete excision.

Case Report

A 63-year male patient presented with progressive weakness of right side of upper limb followed by lower limb for the last 18- months along with altered sensorium and headache for past 7 days. Upon examination Patient was Having GCS- 13 with Both Pupils Reacting to light equally, Vitals Were Normal and Motor Examination Revealed Power Of 4/5 on Right Upper and Lower Limb with Reduced Touch Sensation and Two Point Discrimination. Patient was not having any history of trauma, fever, hypertension, diabetes mellitus, medications or any cranial surgery.

Patient Underwent CT-scan which showed large well defined extra-axial hypo dense collection with calcification on left front-temporo-parietal region with thickness of 4.5 cm and mass effect of 1.5 cm. [Fig.1-A]

Upon MRI Examination it Revealed Large Subdural Sub Acute Hematoma Over Left Cerebral Convexity and Brain Parenchymal Compression. [Fig. 1-B] Patient Also underwent Digital Subtraction Angiography (DSA) 4 vessel which was unremarkable.

Patient Was Planned For Surgical Intervention and left aided Fronto Tempura Parietal Craniectomy Was Performed and well defined Subdural Collection Was Found Upon Bone Removal,[Fig.2-A] Which Was Not Adherent To Underlying Arachnoid and It was easily dissected and stripped off without any damage to underlying arachnoid or pia.[Fig2-B] The overlying Dural defect was covered with pericranium, the excised mass was showing altered blood products with soft to firm consistency and foul smell. Patient had not complications post surgery and post operative CT Image showed complete removal of mass without any residual or recent changes. Patient was Discharged on 5th postoperative day and with GCS- of 15 with Right Sided Motor Weakness Improved on 3 months follow up visit.

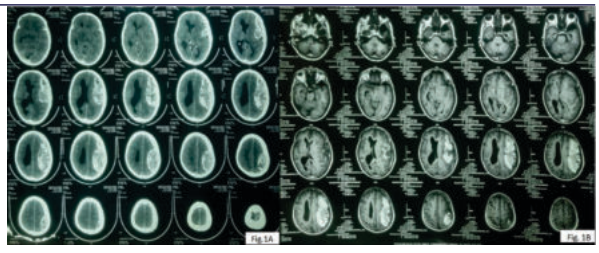

Fig1- A: CT Scan Showing Large Extra Axial Collection With Calcification On Left Fronto-Temporo-Parietal Region
Fig1- B: T1 MRI Image Showing Large Hyperdense Area Over Left Fronto-Temporo-Parietal Region Subdural Space

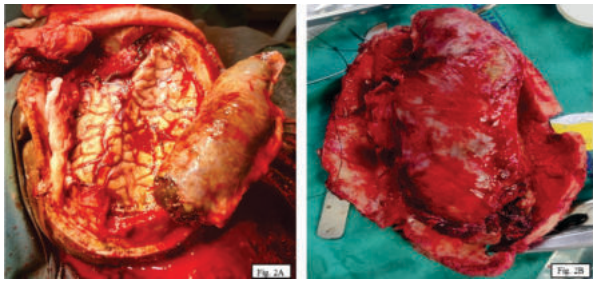

Fig 2-A: Shows Craniectomy And Large Organized Subdural Collection That Was Easily Seperated From Underlying Arachnoid With Compressed Brain Parenchyma, Foul Smelling Collection Was There
Fig 2-B: Complete Excision Of Collection En-mass With Both Layers And Bone Specimen, Collection Is Mixed Old And Altered Blood.

DISCUSSION

Subdural Hematoma Usually Progress to Chronic Form Over Period Of 7 to 21 days with cause being trauma, infection, ventricular shunt over drainage, post-surgical. Anticoagulant & Antiplatelet Use and Coagulation Disorders. The pathogenesis of subdural hematoma from acute to chronic stage have been well studied and local and systemic factors have roles with neomembrane formation with collagen deposition and liquefaction of the collection. But why some chronic subdural hematomas progress with calcifications stays unknown and some vascular thrombosis and calcification of the membrane have been thought to be responsible which usually presents as calcification of inner, outer or both the membranes of chronic subdural hematomas [7]. The process of calcification has been found to be occurring over the period from 6 months to many years and is more common in children's than young adults or old age persons [1]. Many times, repeated bleeding into the cavity have also been found as a causative factor for calcification. Upon radiological investigations it appears like helmet inside skull and given name Armored Brain [3] or Matryoshka Head [4] Appearance After Similarities with Russian Nesting Dolls.

When The Calcification Progresses to Final Stage of Ossification it Can Be Called Ossified Chronic Subdural Hematomas.[8]

The Treatment of These Entities is Unanimous and Ranges from Conservative in Old Age Patients to Twist Drill & Burr hole craniostomy to Complete Craniotomy/Craniectomy and Complete removal depending upon location, thickness and neurological status of patient [9]. Satisfactory results have been found with and without membrane removal without damaging the underlying brain parenchyma without any re-accumulation of blood [10]. Our patient was having very thick collection with calcification, so he underwent craniectomy and complete excision of hematoma and inner membrane.

CONCLUSION

Calcified Chronic Subdural Hematomas Are Rare Entity with Unknown pathogenesis and not guidelines about the management. Most Cases Present with Headache, Altered Consciousness or Neurological Deficit and All Cases Can Be Easily Diagnosed with CT scan and MRI. The Management Should Be Tailored According to The Individual hematoma characteristics and patient neurological and overall status from Conservative Follow-up, burr hole drainage to craniotomy and removal.

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