Article

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Luis Rafael Moscote-Salazar, Hernando Raphael Alvis-Miranda, Amit Agrawal, Willem Calderon-Miranda, Alfonso Pacheco-Hernandez

COLOMBIA, INDIA, MEXICO

DE GRUYTER OPEN

DOI: 10.1515/romneu-2017-0052

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Giant Subgaleal cerebrospinal fluid leakage: An unusual complication of chronic subdural hematoma surgery

Luis Rafael Moscote-Salazar[1], Hernando Raphael Alvis-Miranda[2], Amit Agrawal[3], Willem Calderon-Miranda[4], Alfonso Pacheco-Hernandez[5]

[1]Neurosurgery, Critical Care Unit, RED LATINO Organización latinoamericana de Trauma y Cuidado neurointensivo, Bogotá, COLOMBIA
[2]Resident of Neurosurgery, Universidad de Cartagena, Cartagena de Indias, COLOMBIA
[3]Neurosurgery, MM Institute of Medical Sciences & Research Maharishi Markandeshwar University Mullana Ambala, Haryana, INDIA
[4]Resident of Radiology, Universidad Nacional Autonoma de Mexico, Mexico D.F, MEXICO
[5]Universidad de Cartagena, Cartagena de Indias, COLOMBIA

Abstract: We report a rare case of chronic subdural hematoma complicated with a Giant subgaleal cerebrospinal fluid leakage. Physical examination was performed with no alteration in mental status and no focal neurological disorder. The subdural hematoma was drained and two weeks later, patient was admitted to our hospital with a giant scalp swelling. Physical examination revealed a left parietal subcutaneous collection. The patient was reoperated with a correction in the fistula, he presented a satisfactory postoperative evolution. To our knowledge, this is the first report in literature of a chronic subdural hematoma with a complicated giant subgaleal cerebrospinal fluid leakage.

Key words: Chronic subdural hematoma, subgaleal cerebrospinal fluid leakage, surgery, neurotrauma

Introduction

Chronic subdural hematoma is an encapsulated collection of blood, located below the dura, essentially characterized by the presence of a membrane. Usually, it occurs in the elderly (> 65 years), and is considered to be a sentinel event. A CT brain scan is the current method of choice for the diagnosis of this entity. It should especially be suspected in patients presenting dementia, and although it's less frequent, investigation should be performed in patients with transient neurologic deficit. There is still no consensus regarding the ideal surgical modality, however, the recommended procedure is considered to

be closed suction drain through drill holes. It has been debated whether intraoperative collection improves results. We report the case of a man of 75-years-old who presents scalp swelling, a week after the operation of chronic subdural hematoma. To our knowledge, this is the first case reported of giant scalp swelling in literature.

Case Report

A 75-year-old male patient without any relevant clinical record, presented holocraneal headache for 1 month, and was transferred from a local hospital that does not have access to neurosurgical care. The patient was admitted to our emergency department with a Glasgow Coma Scale (GCS) score of 14. Cranial CT revealed a 12 mm left frontoparietal CSDH with 10 mm mid-line shift. We decided to perform surgical evacuation of subdural hematoma with placement of a closed drainage system. The postoperative period was unremarkable, and at 1 month follow-up, the patient was in GCS 15. Postoperative TC documented brain re-expansion and resolution of the subdural collection. Five weeks later, he was taken to our neurosurgery department for a giant scalp swelling. (Figures 1 and 2). We performed the drainage of a subgaleal collection with hemorrhagic content. The drain was placed in the subgaleal region, in the hole trepanation zone; a bandage was held for 7 days. The subgaleal drainage was removed in the second postoperative day. A week later, the patient was discharged, and during the month of monitoring, the presence of the subgaleal collection had disappeared.

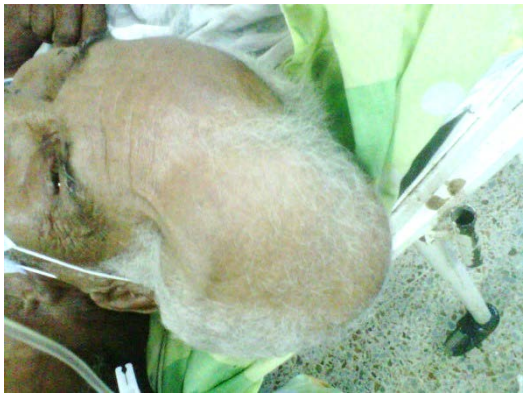

Figure 1 - Giant scalp swelling

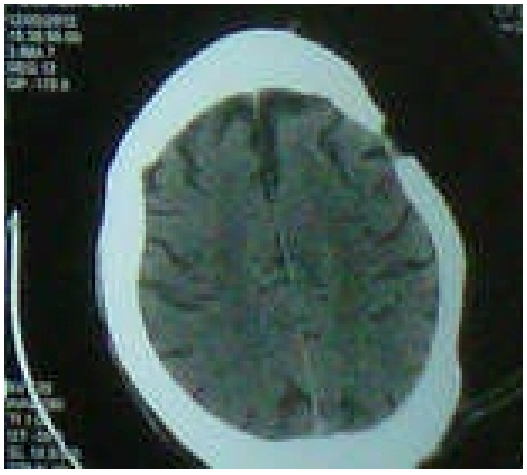

Figure 2 - Preoperative cranial CT showing a Left Giant Subgaleal cerebrospinal and adjunct the bur hole

Discussion

The progressive growth of the HSC is related to a late clinical appearance due to old age as well as brain adaptation. As a result of an approximate 200g weight reduction, there's been an increase of 6 and 11% in the extracerebral space, thus, causing the growth of the subdural collection to create space problems. The clinical presentation in the elderly is varied. In 20-50% of times, a dementia syndrome is described, which can be

mistaken for senile dementia. It is thus recommended that research through computed tomography (CT) be done in all patients with cerebral qualitative consciousness disorder regardless of their age. Headaches, speech disturbances, hemiparesis, seizures, etc. may also occur as a transient neurological deficit.

Typically, the HSC occurs in male patients over 60 years of age, who have alcoholic tendencies or suffer from blood dyscrasias and frequent falls. These individuals complain of a progressive clinical syndrome characterized by a motor, which adds to the evolution signs and symptoms of intracranial hypertension.

Predisposing factors such as, altering coagulation (blood dyscrasias, anticoagulation, alcoholism), risk factors for arterial degenerative disease (diabetes mellitus, hypertension), and development of pressure gradients (hydrocephalus, epilepsy, spinal tap, drain CSF, brain atrophy) should be considered. We must remember that the bilateral HSC is frequently smaller, which can confuse diagnosis and delay management.

Complications occur between 3-28%. Rohde et al. reported a complication rate of 20.5% in a series of 376 patients operated by craniotomy burr hole. (5). Complications include convulsions, subdural empyema, subdural hematoma, intracerebral hematoma and a case of subdural hematoma complicated with fistula subgaleal reported in a child with an arachnoid cyst. Our case is an adult consisting of the first described in the literature.

Correspondence
Dr. Luis Rafael Moscote-Salazar
E-mail: mineurocirujano@aol.com

References

1. Menovsky T, Vries J, Bloss HG. Treatment of postoperative subgaleal cerebrospinal fluid fistulas by using fibrin sealent. J Neurosurg 1999;90:1143-1145
2. Karavelioğlu E, Eser O, Boyac MG. A rare complication of chronic subdural hematoma surgery; Subgalea cerebrospinal fluid leakage. Case Report. Pam Tıp Derg 2013;6(3):158-161
3. Maxwell JA, Goldware SI. Use of tissue adhesive in the surgical treatment of cerebrospinal fluid leaks: experience wit isobutyl-2-cyanoacrylate in 12 cases. J Neurosurg 1973;39:332-6.
4. Tse DT, Panje WR, Anderson RL. Cyanoacrylate adhesive used to stop CSF leaks during orbital surgery. Arch Ophthalmol 1984;102(9):1337-9.
5. Rohde V, Graf G, Hassler W. Complication of burr-hole craniostomy and closed-system drainage for chronic subdural hematomas: a retrospective analysis of 376 patients. Neurosurg Rev 2002;25:89-94.