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Research Article

Chronic Subdural Hematomas of Thies Hospital Center: About 102 Cases

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Abstract

Introduction: The chronic subdural hematoma is a hematic collection built up over several weeks and located between the dura mater and the arachnoid. It is a common condition in geriatric patients, most often following a head injury, sometimes minimal that goes unnoticed. The objective of this study is to give the clinical, therapeutic and evolutionary aspects of chronic subdural hematomas in our department.

Patients and Methods: this is a retrospective, descriptive study of 102 cases of chronic subdural hematomas hospitalized in the Neurosurgery Department of the Regional Hospital of Thiès in Senegal over a period of 05 years from January 2016 to January 2021.

Results: A total of 102 cases of chronic subdural hematomas were identified. The mean age was 66 years with extremes of 25 and 91 years. The sex ratio was 4.6. A notion of minimal head trauma was found in 59% of cases. The use of salicylates was found in 12% of cases and 05% of patients were on anticoagulant treatment. Motor deficit was the main telltale sign (79.41% of cases), followed by headache in 35.29% of cases. Subdural hematoma was bilateral in 23 (22.54%) of patients and unilateral in 79 (77.45%) of patients with a predominance of the left side in 51 (50%) cases. Five of our patients benefited from exclusive medical treatment with a good evolution Among the 95 patients operated, 82% of the patients were operated on under general anesthesia and only 18% under local anesthesia. The drill hole technique was the most commonly used, i.e. 96% of the patients operated on except for 4 patients who had a cranial flap. The short- and medium-term evolution was favorable in 75% of patients with a complete recovery in 80.39%. The mortality rate in our study was 9%. Ten (10) patients had sequelae after surgical treatment.

Conclusion: Chronic subdural hematoma is a common pathology in the elderly. Its prognosis is good if diagnosed and treated early

Keywords: hematoma; subdural; chronic; thies; elderly subjects

Introduction

Chronic subdural hematoma (CSH) is a serosanguineous collection of aged clots located in the subdural space (space between the inner layer of the dura mater and the arachnoid) (1). It is a geriatric pathology that is common with a clear male predominance. CSH manifests itself after a free interval that varies from a few weeks to several months (2) Its pathophysiology remains controversial and its polymorphous clinical symptomatology often poses a problem of diagnostic orientation, hence Computed tomography is the key examination for diagnosis, whose sensitivity exceeds 90% (3). Three types of technique are generally used: craniotomy drill twist, the drill hole with drainage and the classic craniectomy. This surgical treatment is often combined with medical treatment consisting of hydroelectrolyte rehydration, corticosteroid therapy combined with atorvastatin(4–6).

Patients and Methods:

This is a retrospective study conducted over a period of 05 years: from January 2016 to January 2021 and having focused on 102 patient files with a chronic subdural hematoma whose diagnosis was confirmed by a brain CT-scan or brain MRI and treated at the neurosurgery department

of Thiès during this period. Cases of acute extradural, intracerebral and subdural hematomas have not been included in the present work.

Results:

A total of 102 patients were hospitalized for chronic subdural hematoma during our study period. The mean age of our study population was 66 years with extremes of 25 years and 91 years. The majority of our patients are between 66-75 years old, i.e. 29% of cases. A predominance of men was found, i.e. 82% of cases, with a sex ratio of 4.6. The notion of head trauma was found in 59% of cases, the use of salicylates was found in 12% of cases and 05% of patients were on anticoagulant treatment. Chronic alcohol admittedness was found in only 1 patient and age-related brain atrophy was found in 43.5% of cases. In our study, 90% of patients with a head injury specified the notion of free interval. The mean time to admission for our patients who reported a notion of head trauma was 41 days with extremes of 3 and 168 days. In most of our patients, i.e. 45% of cases, the free interval was between 2-4 weeks. From a clinical point of view, headache was the circumstance of discovery in 36 (35.29%) cases, isolated or associated with other signs such as vomiting forming an intracranial hypertension syndrome. This syndrome of ICHS was present in 69% of cases. Motor deficit was found in 81 (79.41%) cases, comitial seizures were found in 8% of cases and language disorders were present in 23% of cases. Neuropsychological disorders were found in 11% of cases with 6 cases of incoherent speech and irritability; 3 cases of mental confusion and 2 cases of psychomotor agitation. All our patients had benefited from a brain CT scan as a first-line diagnostic method highlighting a crescent lunar lesion with concavity inside and convexity outside, pericerebral exerting or not a mass effect on the ventricles and medial structures. Subdural hematoma was bilateral in 23 (22.54%) of patients and unilateral in 79 (77.45%) of patients with a predominance of the left side in 51 (50%) cases. The hematoma was hemispherical in 90 (88.23%), frontoparietal patients in 08 (7.84%) patients and temporoparietal in 4 (3.92%) patients. The subdural hematoma was hypodense in 40.2% of cases, isodense in 19.6% of cases and of different age in 20.58% of cases. The associated lesions were sub-falcorial engagement in 59 (57.84%) patients and internal temporal involvement was present in 2 (1.9%) patients. Only one of our patients had a brain MRI scan, which confirmed his diagnosis.

Therapeutically, exclusive medical treatment was initiated in 5 (4.9%) patients based on clinical and radiological evaluation. It was based on oral corticosteroid therapy and atorvastatin. In our series, 97 (95.09%) patients had undergone surgical treatment. This treatment consisted of making one or two trepanation holes depending on the indication, an evacuation of the hematoma followed by abundant washing with warm saline serum until lightening and then placing a subcutaneous drain in siphoning for drainage not exceeding 72 hours. We made one drill hole for unilateral CSH in 63 patients and two holes in 7 patients. For bilateral CSHs, we made 2 holes in 10 patients and in 13 patients, a hole made on the predominant side of the bilateral hematoma. Craniectomy-membranectomy consists of performing a cranial flap then an opening of the dura mater followed by a resection of the outer membrane and partitions, then evacuation and abundant washing until lightening and drainage. It was performed in 4 of our patients who all had unilateral septate CSH. Our patients were operated on under two anesthesia techniques, either by local anesthesia 18%, or by general anesthesia 82% of the operated patients. The 5 patients who received exclusive medical treatment all had a good outcome. Regarding the patients who had surgery, the short- and medium-term evolution was favorable in 75%. We have identified 18 (17.64%) cases of complications. The evolution was marked by a recurrence in 11 (10.78%) of the cases: 8 patients had progressed well after a resumption of surgery, Among the 3 remaining patients we noted: 1 case of ipsilateral subdural empyema and an infection of the wall, 1 case of compressive pneumencephaly. The mean time from surgery to hematoma recurrence was 18 days with extremes of 3 and 48 days. We deplored a mortality rate of 9%. Sequelae were observed in 10 (9.8%) patients. There were 5 cases of isolated motor deficit, 1 case of isolated epilepsy, 1 case of isolated neuropsychological disorders, 2 cases of association of motor deficits and epilepsy and 1 case of association of neuropsychological disorders and epilepsy.

Discussion

The annual incidence of chronic subdural hematoma varies greatly between authors and study populations, from 3.1 to 14.1 per 100,000 population (5.7). This figure clearly increases with age, especially after the age of 65 (4). Several authors (4,8) report certain factors associated with the appearance of chronic subdural hematoma such as:

- Head trauma due to falls.

- Age-related brain atrophy.

- Anticoagulant and antiplatelet treatments.

- Hemostasis abnormalities.

- Chronic alcoholism

The same observation was made in our study. In our series, the mean age was 66 years, with extremes of 25 and 91 years, and patients aged at least 65 years made up 53.5% of our study population. Our results are comparable to those reported in the literature (4,5,9). This shows that DCS is mainly a geriatric pathology. This age-related distribution of DCSH is very probably explained by the process of cerebral atrophy that sets in from the age of fifty onwards and the fragility of the vessels, which favours the formation of haematomas. We noted a male predominance of 82% with a sex ratio of 4.6, which is classic in the literature. This large male predominance has been found in other African studies (4,5,10,11). This male predominance is probably linked to the greater exposure of men to occupational and social risks that lead to cranial trauma, to pathologies requiring anticoagulant treatment and to chronic alcoholism. According to Alliez(12) et al, oestrogens play a protective role in the formation of haematoma neo-membranes in women. Head injury, even though it is most often forgotten by the patient, was the most common risk factor in our series (59% of patients), followed by the use of salicylates and anticoagulants. This finding is shared by other authors such as (4,5,11). The average admission time for our patients reporting head trauma was 41 days, with extremes of 3 and 168 days, which is in line with the classic time required for neo-membrane formation. The free interval correlates with the patient's age. The latency period is shorter in younger patients and longer in older patients (4). This could be explained by the fact that the cerebral atrophy characteristic of elderly subjects allows the haematoma to develop over a longer period, before it becomes symptomatic. In our series, headache was the reason for discovery in 36 (35.29%) patients and 69% of patients presented with a complete ICHS syndrome. Agaly (4), Sakho (11) and Riyad (1) found a higher frequency of patients presenting with headache, respectively 41.5%, 39.1% and 63.40%. The lower frequency of headache in our series could be explained by the advanced age of our study population. In fact, headaches

are more frequently found in series from younger populations because their existence is due to the increase in intracranial pressure which, in turn, results from the conflict between the haematoma and the cerebral parenchyma. In elderly subjects, the rarity of ICHS may be explained by cerebral atrophy, which leaves more space for the haematoma. The motor deficit as a whole is the sign most frequently found on examination, and its onset is insidious, gradually worsening until it becomes a reason for consultation (4). Motor deficit was found in 79.41% of cases. This corroborates the findings of Sakho (11) and Dongmo (13). This high frequency of hemiplegia could be linked to the delay in diagnosis. In our series, neuropsychological disorders were present in 11% of cases. Ekouéle(9) found psychotic forms in 12% of cases, Benmoussa(2) in 17.6%. The series by Maiga(14) included 26 cases of CSH, all of which were revealed by psychiatric disorders. In 2004, Gelabert G (15) reported that behavioural disorders were statistically more common in elderly subjects, with figures of 33.8% in subjects aged over 70 compared with 21.7% in those under 70. Today, as life expectancy increases, we are seeing more and more psychotic manifestations of CSH in elderly subjects. Vigilance disorders and epilepsy are less indicative of DCS, with 11.3% and 3.8% respectively, as in our series(4). Cerebral CT scans performed in all our patients revealed unilateral DCS in 77.45% of cases, with a predominant location in the left hemisphere (50%). Our results are in line with those of Benmoussa (2) and Dongmo (13). Five (5) of our patients had received exclusive medical treatment. Of these five patients, four had received corticosteroid therapy. ecaux (16) reported two cases of chronic subdural haematomas with a favourable outcome on corticosteroids. Diallo (17) in a series of CSH in elderly subjects treated with corticosteroids: 66.67% of patients had a favourable outcome compared with 10.53% who failed treatment; he specified that advanced age, a large volume of haematoma and significant deviation of the midline are contraindications to exclusive corticosteroid treatment. Only one patient was treated exclusively with atorvastatin. Jiang (18) showed in a study in China that for 98 patients suffering from chronic subdural haematoma with conservative treatment based on atorvastatin, 45 (45.9%) had a good evolution of their neurological signs. Mohameth Faye (6), in his series, also appears to recommend statins as an alternative medical treatment for CSHD in patients with co-morbidities that relatively contraindicate surgery. These recent studies suggest that atorvastatin reduces haematoma and improves patients' clinical condition. Ninety-seven of our patients had undergone surgery, i.e. 95.09% of all patients in the series. CSH is primarily treated surgically. Classically, the principle is to evacuate the subdural haematic collection and abundantly rinse the cavity to expel the anticoagulant and fibrinolytic contents, in order to ensure cerebral decompression and allow a return to normal local haemostasis (10). Our patients underwent two types of anaesthesia: local anaesthesia (LA) in 18% and general anaesthesia (GA) in 82% of patients. Bankole (19) had 96% of patients operated on under GA, while Djientcheu (20) preferred local anaesthesia to general anaesthesia because of its tolerance by elderly and frail subjects. The choice of anaesthetic depends on the surgeon's habits, but also on the type of surgery performed. The trepan hole was the most commonly used surgical technique in our series, accounting for 93.81% of patients operated on. In our study, 85% of patients with unilateral CSH underwent surgery using a single hole, compared with 10% who underwent surgery using two trepan holes. For bilateral haematomas, 13 patients (55%) underwent surgery with one trepan hole on the predominant side of the bilateral haematoma, compared with 10 patients (45%) with two trepan holes. In the series by Agaly (4), one trepan hole was performed in 17 patients (34.4%) with unilateral CSH and two trepan holes in 49% of patients with unilateral CSH. According to mwanyombet(10) surgery consisted mainly of two trepan holes-88 (86%) or sometimes a standard craniotomy for the removal of thick false membranes and/or compartmentalization of the CSH seen on CT-scan. The short- and medium-term outcome of our operated patients was favourable in 75%. Other studies (14,19) have also reported good results. Recurrence was found in 11% of patients in our series. Agaly(4) in a study of 53 patients had a recurrence rate of 5.9% in patients operated on with one hole and 4.5% in those operated on with two holes. K. Nayil (21) in a study of 254 patients, comparing the efficacy of surgical treatment by trepanation, noted that the recurrence rate was 6.15% in patients operated on with a single hole compared with 4.83% after 2 trepan holes. The choice of surgical technique depends on the surgeon's attitudes and experience. Recurrences may be related to: advanced age, the patient's history, the bilateral form but above all chronic alcoholism and the use of antiplatelet agents, sometimes not admitted by the patients. In our series there was 1 case of homolateral subdural empyema, while Mwanyombet(10) had 2 cases of empyema. Complications also vary according to the age of the patient and the experience of the teams. In our series, craniectomy combined with membranectomy was performed in 4 patients. In Agaly's series (4) of 53 cases, craniectomy was performed in a single patient who had relapsed after two trepanning operations with a favourable outcome. Abundant hydroelectrolytic rehydration is part of the medical treatment(5). Rehydration can be either parenteral or oral if the patient is conscious. We recorded a mortality rate of 9%, our results corroborate those of Kessely (22) who had an overall mortality rate of 8.6%. Other studies have a much lower mortality rate: Ba (5) had a rate of 3.97% in 2012, Agaly had a rate of 1.9%, Djientcheu (20) had a mortality rate of 2.5%.

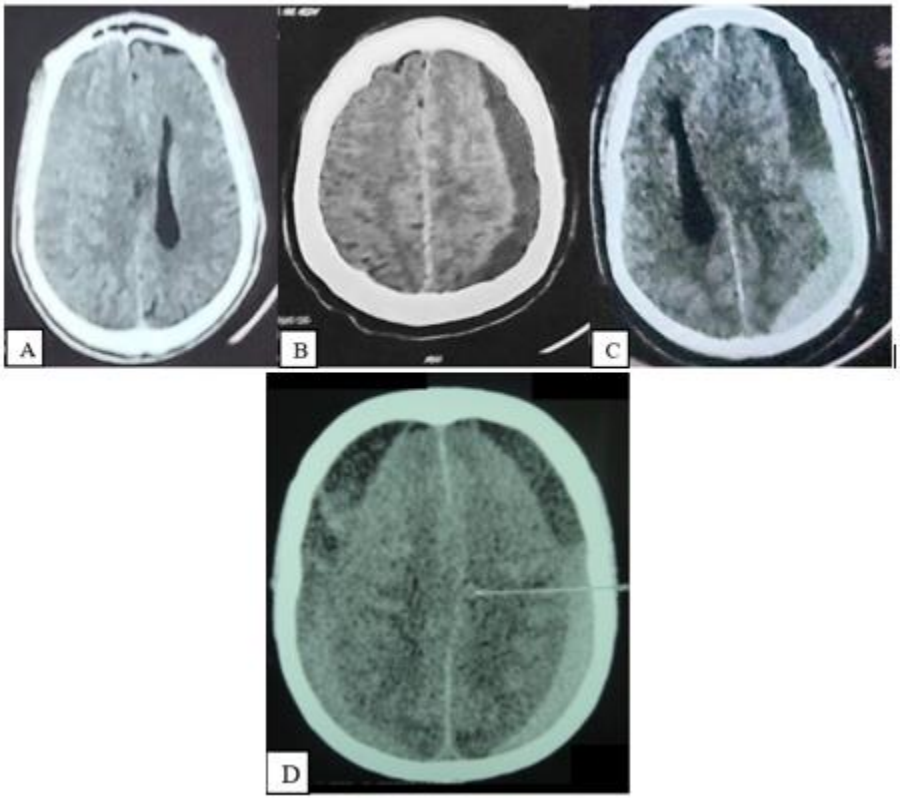

Figure 1: Cerebral CT scan without injection: axial section showing

A: right hemispheric subacute dural haematoma with mass effect.

B: a left hemispheric HSDC.

C: a left hemispheric DCS of different age with recent rebleeding and mass effect on the homolateral ventricle.

D: bilateral DCS with mixed density.

Conclusion

Chronic subdural haematoma is a common condition in the elderly. It is difficult to diagnose in the absence of a CT scan, due to its clinical polymorphism, especially in elderly patients, those suffering from alcoholism or those on anticoagulants. Treatment is primarily surgical. Early diagnosis and management improves prognosis, reducing mortality and morbidity. Long-term patient follow-up and social reintegration must be considered to limit the risk of recurrence.

List of abbreviations

CSH: chronic subdural hematoma

ICHS: intracranial hypertension syndrome

GA: general anaesthesia

LA: local anaesthesia

Declarations

Ethics approval and consent to participate: Not applicable

Availability of data and material: All data generated or analysed during this study are included in this published article [and its supplementary information files].

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