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Subdural hematoma in alcoholicpatients

Hematoma subdural en pacientes alcohólicos

Hematoma subdural em pacientes alcoolizados

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ABSTRACT

A subdural hematoma is a collection of blood between the duramater, which is the membrane that covers the brain, and the arachnoid, one of the layers of the meninges; it

is due to the traumatic rupture of venous vessels that cross the subdural space, therefore a separation takes place between the layers of the arachnoid and the duramater. The objective was to determine the type of subdural hematoma in alcoholic patients. An observational cross-sectional descriptive study was carried out in the General University Provincial Hospital Carlos Manuel de Céspedes, in the period from December 2017 to September 2018. The population studied 13 alcoholic patients who met the criteria of inclusion. The group of 40 to 50 years with seven patients predominated; 53, 84% of those studied had acute subdural hematoma, and the most affected side of the brain was the left which represents the 46, 15%. It is concluded that the acute subdural hematoma, with involvement of the left side of the brain, is more frequent in alcoholic patients.

Keywords: Subdural hematoma; Alcoholics; Alcoholism.

RESUMEN

Un hematoma subdural es una acumulación de sangre entre la duramadre, que es la membrana que cubre el cerebro, y la aracnoides, una de las capas de las meninges; se debe a la rotura traumática de vasos venosos que atraviesan el espacio subdural, por lo tanto se produce una separación entra las capas de la aracnoides y la duramadre. El objetivo fue determinar el tipo de hematoma subdural en pacientes alcohólicos. Se realizó un estudio observacional descriptivo transversal, en el Hospital Provincial General Universitario Carlos Manuel de Céspedes, en el período de diciembre de 2017 a septiembre de 2018. La población de estudio fue de 13 pacientes alcohólicos que cumplieron con los criterios de inclusión. Predominó el grupo de 40 a 50 años con siete pacientes; el 53,84 % de los estudiados presentaron hematoma subdural agudo, y el lado del cerebro más afectado fue el izquierdo con el 46,15 %. Se concluye que el hematoma subdural agudo, con afectación del lado izquierdo del cerebro, es más frecuente en los pacientes alcohólicos.

Palabras claves: Hematoma subdural; Alcohólicos; Alcoholismo.

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RESUMO

Um hematoma subdural é um acúmulo de sangue entre a dura-máter, que é a membrana que cobre o cérebro e o aracnóide, uma das camadas das meninges; É devido à ruptura traumática dos vasos venosos que atravessam o espaço subdural, portanto ocorre uma separação entre as camadas do aracnóide e da dura-máter. O objetivo foi determinar o tipo de hematoma subdural em pacientes alcoolizados. Foi realizado um estudo observacional descritivo transversal no Hospital Provincial Geral da Universidade Carlos Manuel de Céspedes, no período de dezembro de 2017 a setembro de 2018. A população do estudo foi de 13 pacientes alcoolistas que preencheram os critérios de inclusão. O grupo de 40 a 50 anos predominou com sete pacientes; 53,84% dos estudados apresentaram hematoma subdural agudo, e o lado do cérebro mais afetado foi o esquerdo com 46,15%. Conclui-se que o hematoma subdural agudo, com envolvimento do lado esquerdo do cérebro, é mais frequente em pacientes alcoolizados.

Palavras-chave: Hematoma subdural; Alcoólicos; Alcoolismo.

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Introduction

Historically, several factors justify the importance of studying adolescence as a stage in the evolutionary cycle. The abandonment of schooling, gangs, aggressions, homicidal behaviors and addictions are among the major problems of this stage, which require inter

and multidisciplinary attention.[1] The severity of alcoholism acquires a greater connotation as it constitutes an increasingly frequent addiction. [2]

In Cuba, despite the achievements, there is a strong rootedness in the consumption of alcohol, due to the characteristics of the culture itself, it is not conceivable to hold a cultural or recreational activity or celebration without the presence of this drug. [3]

The chronic subdural hematoma (CSH) was first reported in 1657 by Johan Wepfer, during the performance of a necropsy to a patient with stroke, was then mentioned by Bayles in 1826 and attributed its pathophysiology to "chronic rebleeding", it was subsequently described by Rudolph Virchow in 1857 as hemorrhagic pachymeningitis. [4]

Among the prominent risk factors are: advanced age, epilepsy, hemodialysis, low intracranial pressure, excessive consumption of alcohol and therapies with anticoagulants and platelet antiaggregants. It is one of the most common neurosurgical pathologies in the elderly, with an average between 63-77 years and 3: 1 ratio of male predominance. [4]

Currently the subdural hematoma (SH) is defined as an encapsulated collection of blood, fluids and products of blood degradation, located between the dura mater and the arachnoid, which usually appears three weeks after a mild head injury.[4]

It is bilateral in 20-25% of cases, a situation that increases morbidity and mortality. It has an incidence of 3, 4-5 per 100 000 people and 58 per 100 000 in older than 70 years, whose rate increases progressively as a consequence of the increase in population´s life expectancy. Various surgical and non-surgical procedures have been proposed that respond to the needs of the critical patient; however, a standardized care protocol has not been established. [4]

The incidence of SH is between 8, 2% and 14% per 100 000 inhabitants per year, with an average age of 76 years. According to data from the World Health Organization (WHO), its incidence can double in the population over 65 years between 2010 and 2050. It affects predominantly men, with a ratio of 3: 1 in all groups of age. [5]

Acute traumatic intracranial hematomas are primary lesions, which are often seen in patients with severe head trauma. Within them, the acute subdural hematoma is the most frequent in the adult, and generally requires urgent surgical treatment. Acute subdural hematomas that cause displacement of the midline structures of five millimeters or more require surgical evacuation. (6)

CSH remains one of the most frequent complications of cranioencephalic traumas in contemporary neurosurgical practice. Despite it is an entity described for more than 100 years ago, enigmas persist in its genesis. Current research points to the disjunction of the dural border cell layer with respect to the meningeal and periosteal layers of the dura, as the trigger for local overexpression of proinflammatory cytokines responsible for the origin of neomembranes with immature blood vessels, especially in the portion adjacent to the meningeal layer of the dura mater. (7)

Subdural hematomas are intracranial hemorrhages where early diagnosis allows a favorable evolution of the patient, otherwise the unfavorable evolution interferes with an adequate recovery of the patient and the prognosis is more unfavorable, taking into account that the surgical treatment is the indicated one as a choice therapy. (8)

The present study was conducted with the objective of determining the type of subdural hematoma in alcoholic patients.

Method

An observational cross-sectional descriptive study was carried out in the Neurosurgery Consultation of the General University Provincial Hospital "Carlos Manuel de Céspedes, from December 2017 to September 2018. The population under study included 13 patients who complied as inclusion criteria: alcoholic patient; over 18 years of age; patient who underwent computerized axial tomography as diagnostic tests. Alcoholic patients who underwent another emergency procedure in the neurosurgery service were

excluded.

We used variables such as: age, organized into four groups: 18-28, 29-39, 40-50, 51 and more; subdural hematoma classified as: acute, subacute or chronic; side of the subdural hematoma: left, right or bilateral.

The diagnosis of subdural hematoma was done in all the patients through the physical examination and the computerized axial tomography of the skull, observing a hypodense or isodense collection in relation to the cerebral parenchyma located in the subdural space, unilateral or bilateral. The patients were evaluated by specialists in Neurosurgery and Psychiatry.

The integrity of the data obtained in the present study was carried out in accordance with the ethical principles for medical research in humans established in the Helsinki Declaration amended by the 52nd General Assembly in Edinburgh, Scotland, October 2000.

For the processing of the information a database was made in Microsoft Excel 2007. The percentage was used as a summary measure for qualitative data and the contingency table as an association measure.

Results

Table 1 shows the distribution of the population under study, composed by 13 alcoholic patients, of which 53, 84% belonged to the group of 40 to 50 years of age.

Table 1. Distribution of the population under study according to age groups.

Age groups	Patients	
	Nº	%
18-28	1	7,69

29-39	1	7,69
40-50	7	53,84
51 and more	4	30,76
Total	13	100,0

When characterizing the type of subdural hematoma, it was revealed that it was acute in 53, 84% of the cases, followed by the chronic one with 30, 76%, as shown in Table 2.

Table 2. Type of subdural hematoma in alcoholic patients.

Subdural hematoma	**Patients**	
	Nº	**%**
Acute	7	53,84
Subacute	2	15,38
Chronic	4	30,76
Total	13	100,0

The most affected side of the brain was the left one, represented by 46, 15%, followed by the bilateral side with 4 reports. (Table 3)

Table 3. Skull side with subdural hematoma.

Skull side	**Nº**	**%**
Right	3	23,07
Left	6	46,15
Bilateral	4	30,76
Total	13	100,0

Discussion

Over the course of decades, the content of the hematoma and the histology of its membranes have been investigated on the mechanisms by which they develop and expand. It is believed that the gradual expansion of the hematoma by one of the mechanisms discussed is responsible for the progression of symptoms. Mental and consciousness disorders are more prominent than focal signs. (9)

The authors say that within the natural evolution, with advanced age, there is a process of cerebral atrophy, not necessarily linked to loss of intellectual capacity, which can lead to the same situation of separation of the cerebral cortex from the bone, with an increase in subdural space. Keep in mind that, crossing this space, there are numerous veins that go from the cerebral cortex to the large drainage veins that are inside the dura mater.

The study conducted by Román Iglesias, et al, (10) reveals that alcoholism was framed as one of the risk factors that led to the appearance of SH in the studied patients. He also points out that in the medical literature you can find more and more references about the diagnosis and treatment, alteration that has among its predisposing factors brain atrophy and the intake of substances such as alcohol.

The authors believe that the hematoma may appear with neurological deterioration and antiepileptics are recommended because of the risk of early epileptic seizures. The treatment requires urgent surgical evacuation by craniotomy. These results agree with Román Iglesias and collaborators. (11)

It differs from the results of SH Mora Torres, (12) study who points out a greater frequency of CSH, SH he states that the onset of the clinic is usually insidious, manifesting itself in a non-specific manner with symptoms such as headache, falls, gait disturbances, drowsiness, cognitive alteration, apathy and occasionally seizures. The symptoms can fluctuate and be temporary or remain stable over time. Global deficits, such as altered consciousness, occur more frequently than focal deficits, which in turn can be both ipsilateral and contralateral alongside the chronic subdural hematoma. He agrees that

alcoholism is an important risk factor when he found that it was present in 77, 8% of his patients.

Each year there are 3,3 million deaths worldwide due to alcohol consumption, representing 5,9% of all deaths. The consumption of alcohol causes death and disability at a relatively early age. Alcohol has generalizable effects at all ages, altering the physiology and neuropsychological functions and framed as a risk factor for subdural hematomas. [13]

The authors point out that acute subdural hematomas have been defined as those that require surgery to preserve life, which occur during the first three days, after trauma and constitute an entity with a high mortality and morbidity rate, although within these should be differentiated those that produce severe neurological alterations during the first hours after the trauma since patients with these lesions have a worse prognosis due to the injuries associated with the hematomas, especially bruises and endocranial hypertension secondary to cerebral edema, which are the main cause of morbidity and mortality, which is why several interventions have been described to alleviate the increase in intracranial pressure caused by post-traumatic edema.

The authors believe that computed tomography is the most frequently used diagnostic method due to its speed, efficiency, relative simplicity and wide availability. Pereira Jiménez, [13] in her research found that 58,3% of the bruises diagnosed were located on the left side, a result that matches with those of this study, the researcher reports that the history of alcoholism was collected in 50 % of cases.

It coincides with the results of this investigation Vanegas Cerna, [14] regarding the location of the subdural hematoma on the left side with 27, 3%, although it differs from the results of this study because the type of hematoma that predominated in its registry was chronic, agreeing that the alcohol factor was one of the triggers.

Figueroa Verdecia et al, [15] found that 76, 4% of their patients presented a unilateral subdural hematoma. Regarding the location of the hematoma, Chávez Gómez et al, [16] reported that the subdural hematoma is most frequently located in the left hemisphere of

the brain in 52%. Heringer Lindolfo and colleagues, [17] also report in their research that the unilateral subdural hematoma was 73, 9%. It does not agree with Ramírez and collaborators, [18] who argue that the bilateral was more frequent in their registers.

The authors state that the physiopathology of SH is becoming clearer due to recent findings in studies of human images and models. The better understanding of its pathogenesis, the identification of risk factors, the advance in the diagnosis by image and in the treatment, have greatly improved the prognosis.

Conclusions

The acute subdural hematoma, with involvement of the left side of the brain, is more frequent in alcoholic patients.

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Conflict of interests

The authors declare no conflict of interest.