Cerebral Venous Thrombosis: Epidemiological, Clinical, And Radiological Aspects; A Retrospective Study At The University Hospital Establishment Of Oran.

D.Badsi¹-Hba.Zitouni¹-O. Zekkour²

Abstract:

Cerebral venous thrombosis (CVT) is a rare condition related to an isolated dural sinus occlusion or a cortical vein occlusion. We conducted a descriptive retrospective study over a period of 8 years where we collected 250 patients. The results were in favour of a clear female predominance with an average age of 37 years. ICH syndrome was the most predominant symptom and the superior longitudinal sinus was the most affected vessel. CVT is a condition whose diagnosis and management must be early and rapid.

Key words: Cerebral venous thrombosis (CVT), cerebral venous sinus thrombosis, intracranial hypertension syndrome (IHS), contraception, anticoagulants.

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I-Introduction:

Cerebral venous thrombosis (CVT) is a rare condition characterized by isolated occlusion of the dural sinuses or cortical veins (1). It presents with a wide range of clinical and radiological features. Cerebral CT angiography or cerebral MR angiography are used for diagnosis (2). Parenteral anticoagulation is recommended for acute CVT, and decompressive surgery may be considered in cases of cerebral herniation (3). Low molecular weight heparins (LMWH) are preferred over oral anticoagulants during the acute phase (1)(3). Anticonvulsants are suggested for patients with seizures and/or supratentorial lesions (3). There is no significant difference in efficacy between vitamin K antagonists (VKA) and novel oral anticoagulants (NOACs) (4). The duration of treatment is typically 3 to 6 months, unless there are high-risk thromboembolic conditions that require lifelong anticoagulation. The aim of our study is to describe the epidemiological, clinical, and radiological characteristics of cerebral venous thrombosis at the University Hospital establishment of Oran.

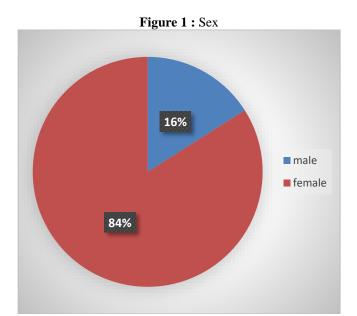
II-Materials et methods:

Our study was conducted in the neurology department of the University Hospital establishment of Oran. It was a descriptive retrospective study conducted from December 2015 to December 2022. We included all patients admitted for cerebral venous thrombosis based on clinical and radiological criteria (cerebral CT angiography and cerebral MR angiography). Patients with incomplete medical records were excluded from the study.

SPSS 22 software was used for data analysis.

III-Results:

During the study period, we collected data from 250 patients, with a mean age of 37 ± 14 years and a clear female predominance (84%) (Figure 1). Among the female patients, 64% were using combined oral contraceptives, and 24% were in the postpartum period (Figure 2). The clinical presentation was subacute in 76% of cases. The most common presentation was intracranial hypertension syndrome (82%), followed by motor deficits and seizures. Among our patients, 26% had papilledema, with 11% classified as grade 3-4 (Figure 3). The diagnosis was established based on cerebral MR angiography in 90% of cases (Figure 4). The main site of thrombus formation was the superior sagittal sinus (55%) (Figure 5), with venous hemorrhagic infarction observed in 10% of cases (Figure 6).



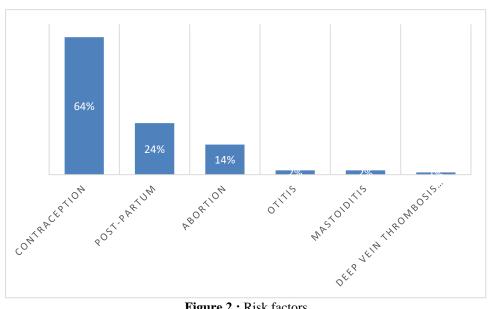


Figure 2: Risk factors

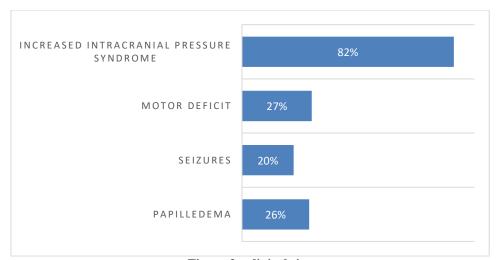


Figure 3: clinical signs

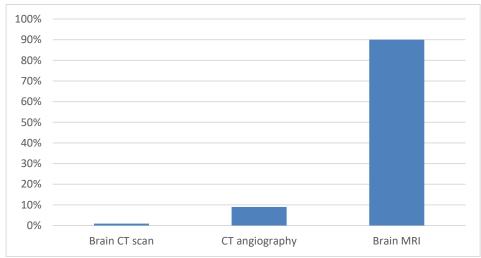


Figure 4: diagnostic imaging

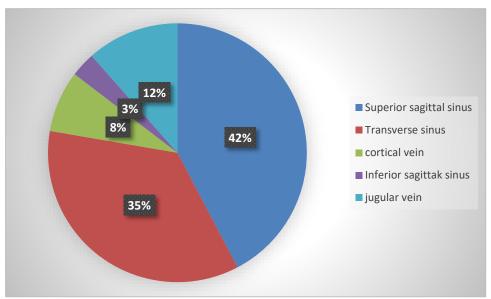


Figure 5: site

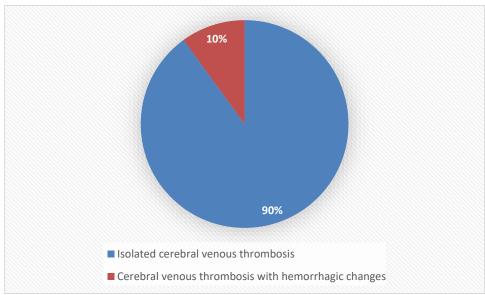


Figure 6: Imaging results

IV-Discussion:

In our study, the frequency of CVT in women was 84%, which is consistent with literature data. In fact, two studies published in 2014 and 2016 reported a female-to-male ratio of 3.7 to 5.3 (1, 5, 6). This has also been reported in a Pakistani and Algerian study, where the percentage of female CVT cases was 87% and 90% respectively (1, 2). This could be explained by oral contraception and the postpartum period (6, 9). Our study showed that 64% of women were using combined oral contraceptives, and 24% were in the immediate postpartum period. The mean age of our patients was 37 years, which corresponds to literature data: the Pakistani and Algerian studies reported a mean age of 31 years and 34 years respectively (2, 3), indicating a disease affecting young individuals. In our study, the mode of onset of CVT was subacute in 76% of cases, which is consistent with other Algerian studies (1, 4, 8). The most frequent sign was intracranial hypertension syndrome (82%), followed by focal signs and seizures, as reported in a study from Saudi Arabia (7) and an Algerian study (1). 26% of patients had papilledema, with 11% classified as grade 3 or 4, requiring not only medical treatment but also subtractive lumbar punctures (1). The most common location of CVT in our study was the superior sagittal sinus at 55%, followed by the transverse sinus at 42%, which is consistent with an Algerian study (1). However, in another Pakistani study (2), the frequency of transverse sinus involvement was higher, which could be explained by the pathological polymorphism of CVT. The percentage of hemorrhagic changes was 10%, which is in line with the literature..

V-Conclusion

Cerebral venous sinus thrombosis remains a rare cause of stroke, and early diagnosis has been made possible with MRI imaging (13). It is a treatable and reversible cause of stroke in young individuals (13). It is characterized by clinical polymorphism, and symptoms can evolve acutely, subacutely, or chronically (13)(15).

Features suggestive of CVT include a particular clinical context associated with new focal headache, headache with seizures, papilledema, or focal deficits (13)(15). Treatment with heparin (LMWH) followed by oral anticoagulation has shown optimal response and excellent clinical outcomes (13)(16). It should be noted that there is no superiority in effect between vitamin K antagonists (AVK) and direct oral anticoagulants (DOACs) (13)(16).

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