

Cerebral Vein Thrombosis during Pregnancy and At the Puerperal Period: Radio-Clinical and Therapeutic Study

Yacoubi Khebiza, S^{1*}, Melhouf, M. Y. A¹, Fdili, A. F. Z¹, Jayi, S¹, Chaara, H¹

¹Department of Obstetrics Gynecology II CHU Hassan II of Fez, Morocco

DOI: [10.36348/sijog.2023.v06i08.003](https://doi.org/10.36348/sijog.2023.v06i08.003)

Received: 08.07.2023 | Accepted: 17.08.2023 | Published: 28.08.2023

*Corresponding author: Yacoubi Khebiza, S

Department of Obstetrics Gynecology II CHU Hassan II of Fez, Morocco

Abstract

Cerebral thrombophlebitis gravidopuerperale is a rare but serious pathology that can engage the maternal-fetal prognosis. It requires early diagnosis and treatment fast. Indeed, much rarer than arterial thromboses, thrombophlebitis are a significant cause of death and stroke. They can occur during pregnancy but most often they occur within a few days to a few months following postpartum. The frequency of peripartum cerebral thrombophlebitis is on average 1/3000 to 1/10000 births, but recently the number of cases recognized seems higher partly because of the more widespread knowledge of the variability of different forms of clinical presentations of cerebral venous thrombosis allowing a diagnosis, and on the other hand the wider use of imaging means more and more effective, in particular MRI. The objective of this study is to describe the epidemiological, clinical, paraclinical, therapeutic and evolutionary gravido - puerperal cerebral thrombophlebitis.

Keywords: maternal-fetal prognosis, diagnosis, thrombophlebitis.

Copyright © 2023 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Cerebral venous thrombosis is a cerebrovascular accident affecting the venous network and in particular the venous sinuses [1], it represents a neurological emergency,

The gravido-puerperal period remains a period of predisposition to CVT given the increase in risk factors during this period [2], but also the modifications of the biological constants of coagulation and more precisely from the second trimester,

The frequency of occurrence of CVT during this period would be on average between 1/3000 and 1/10000 births [3]. The clinical diagnosis is difficult and the symptomatology is polymorphous and often misleading.

Its diagnosis is essentially based on radiological examinations, in particular: CT and MRI, which can provide many elements, including the exact site of the thrombosis, the age of the thrombus and the associated complications [4].

As for treatment, it combines symptomatic, antithrombotic and etiological treatment [5]. Cerebral venous thrombosis have a good prognosis in the presence of early and adequate treatment and in the absence of classic poor prognostic factors [6, 7].

PATIENTS AND METHODS

Our work is a retrospective descriptive analytical study including 12 patients over a period of 5 years, collected in the departments of radiology, neurology, mother child resuscitation and gynecology of the CHU Hassan II of FES.

RESULTS

12 patients were selected for our study. The age of our patients varied between 23 and 43 years with an average of 30 years. The occurrence of cerebral venous thrombosis postpartum was more predominant rather than during pregnancy.

As for the distribution of our patients according to thromboembolic risk factors: 7 patients had ATCD of CO intake, 5 patients had anemia, 4 an infection, 3 patients had ATCD of stillbirth, 4 of

miscarriage, 4 of AVB with dystocia, 2 patients had given birth with caesarean section, and 2 had pre-eclampsia during their pregnancy. The subacute mode of onset was the most frequent and involved 9 of our patients. Epileptic seizures, aphasia, visual disturbances, HTIC and impaired consciousness.

Regarding paraclinical data, imaging through CT and MRI was the key to diagnosis. The MRIs carried out in our patients highlighted the TVC of the dura-merian sinuses and the cortical veins and this at the different acquisitions (Figure 1, 2 & 3).

Imaging also made it possible to look for parenchymal abnormalities accompanying the CVT in particular, venous infarction and meningeal hemorrhage objectified in half of our patients, as well as hemorrhagic infarction found in 2/3 of our patients.

The scannographic signs were the DELTA sign found in 6 cases, the dense triangle sign found in 2, and the rope sign found in a single patient (Figure 4 & 5).

Regarding the localization, the superior longitudinal sinus was the most frequent localization found in 10 patients, followed by the lateral sinus found in 5 patients, Involvement of the internal cerebral veins remains the least frequent and was objectified in a single patient.

Regarding therapy, all our patients received symptomatic treatment, depending on the clinical signs they present, I quote: analgesic, anticonvulsant, evacuating PL, mannitol, corticosteroid therapy.

With regard to anti-thrombotic treatment: was based on LMWH in all patients with relay by anti-vitamin K depending on the occurrence of CVT during pregnancy or postpartum but also depending on the trimester of pregnancy pregnant patients, The etiological treatment based on the treatment of the concomitant infection.

The evolution of our patients was favorable in 4, 3 presented complications during their hospitalizations, 3 patients presented sequelae, 1 patient was PDV 1 month after her hospitalization, and one patient died.



Figure 1: Sagittal slice of one of our patients showing a T1 hypersignal of the superior longitudinal sinus indicated by the yellow arrow

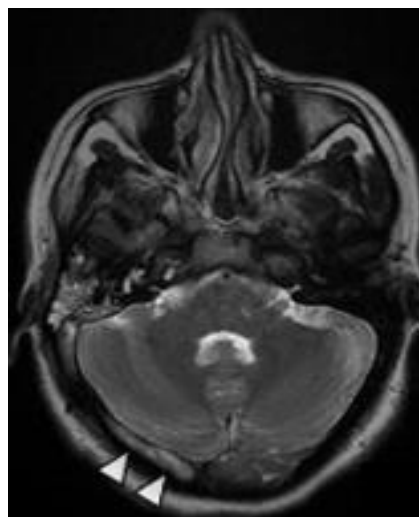


Figure 2: Axial section in T2 sequence showing a spontaneous T2 hypersignal of the right lateral sinus

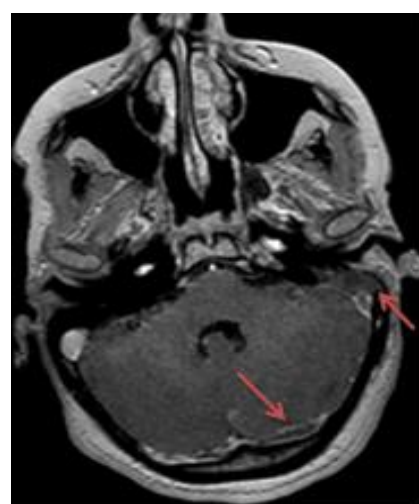


Figure 3: Cerebral MRI in Axial 3D T1 + sequence showing total thrombosis of the transverse and sigmoid sinuses

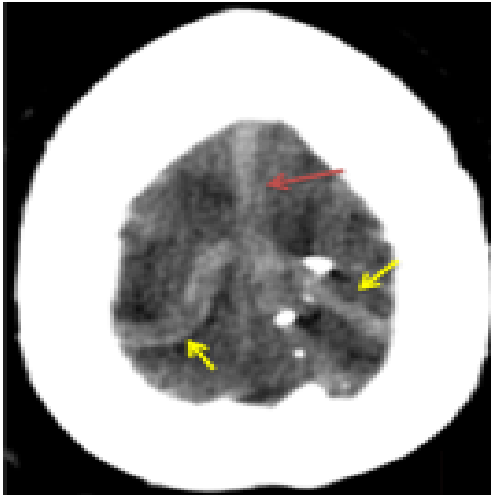


Figure 4: Cerebral CT before injection of PDC showing the superior longitudinal sinus is spontaneously dense (red arrow), as well as parietal cortical veins bilaterally (yellow arrow)



Figure 5: Cerebral CT in sequence after injection of PDC showing cerebral venous thrombosis of the posterior part of the SLS extended to the torcular (green arrow)

CONCLUSION

Thrombophlebitis during the gravido period puerperal is a point of convergence of several medical

specialties requiring early diagnosis based mainly on radiological examinations including CT and MRI for pregnant women symptomatic treatment, appropriate anti-thrombotic, and etiological if a cause is retained.

The evolution is unpredictable from one patient to another, but good management has made it possible in recent years to reduce mortality and disabling sequelae.

REFERENCES

1. Canhão, P., Abreu, L. F., Ferro, J. M., Stam, J., Bousser, M. G., Barinagarrementeria, F., ... & ISCVT Investigators. (2013). Safety of lumbar puncture in patients with cerebral venous thrombosis. *European Journal of Neurology*, 20(7), 1075-1080.
2. Lanska, D. J., & Kryscio, R. J. (2000). Risk factors for peripartum and postpartum stroke and intracranial venous thrombosis. *Stroke*, 31(6), 1274-1282.
3. Mounji, H., El Adib, A. R., & Younous, S. Cerebral thrombophlebitis and pregnancy: epidemiological aspects and treatment modalities, Maternal Resuscitation Service. Mother-Child Hospital. Mohammed VI University Hospital. Marrakesh.
4. Journal of Gynecology Obstetrics and Biology of Reproduction, 31(4), June 2002.
5. Lorincz, A. B., & Moore, R. Y. (1962). Puerperal cerebral venous thrombosis. *American Journal of Obstetrics and Gynecology*, 83(3), 311-319.
6. Carroll, J. D., Leak, D., & Lee, H. A. (1966). Cerebral thrombophlebitis in pregnancy and the puerperium. *QJM: An International Journal of Medicine*, 35(3), 347-368.
7. Bansal, B. C., Gupta, R. R., & Prakash, C. (1980). Stroke during pregnancy and puerperium in young females below the age of 40 years as a result of cerebral venous/venous sinus thrombosis. *Japanese heart journal*, 21(2), 171-183.