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Idiopathic Intracranial Hypertension in a Woman Carrying a Post-Term Pregnancy: A Case Report

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Abstract | **Case Report**

We report the case of a 27-year-old primigravida with no particular history whose pregnancy was complicated, from the first trimester (13 weeks), by idiopathic intracranial hypertension (ICH) with visual impairment, for which she received medical care with depleting lumbar punctures without obstetric consequences. The objective of this work is to clarify the particularities of the delivery route in a woman carrying a pregnancy with post-term in a context of idiopathic ICH. This nosological entity would be linked to a defect in reabsorption of cerebrospinal fluid (CSF) at the level of arachnoid granulations. The main risk factors mentioned are: obesity, polycystic ovary syndrome, thrombophilia and hyperfibrinolysis. The diagnosis is based on the modified Dandy criteria after a negative clinical, biological and radiological investigation. The visual prognosis is compromised without directly endangering the life prognosis, which requires emergency treatment to preserve visual function. Furthermore, this disease does not affect the progress of the pregnancy.

Keywords: Intracranial Hypertension, Idiopathic, Pregnancy, Visual Prognosis, Post-Term, Delivery Route.

INTRODUCTION

intracranial hypertension, also called idiopathic HTIC or pseudotumor cerebri, is an increase in cerebrospinal fluid pressure without clinical, biological or radiological arguments in favor of an intracranial pathology, described for the first time by Quicke in 1897 [2].

This is an increase in cerebrospinal fluid (CSF) pressure, without any biological abnormality of the CSF, without evidence of any intracranial expansive process or hydrocephalus during radiological explorations [1-3]. Pregnancy is rarely complicated by benign intracranial hypertension [4]. We present the observation of a primigravida carrying a post-term pregnancy (43 weeks) who presented with idiopathic HTIC in the first trimester of her pregnancy (13 weeks).

The objective of this work is to clarify the particularities of the delivery route in a pregnancy with overdue delivery in a pregnant woman with idiopathic HTIC.

OBSERVATION

Mrs. X, aged 27, carrying a pregnancy of 43 weeks of amenorrhea (WA), with no particular history, with a body mass index of 25 kg/m² presenting with HTIC syndrome with helmet headaches and bilateral visual disturbance such as a sudden onset of visual acuity loss occurring at her 13th week of amenorrhea, without focal neurological deficit. The cerebral magnetic resonance imaging (MRI) performed showed dilation of the optic nerve sheaths with the presence of an arachnoidocele sellar measuring 11 mm. There was no hydrocephalus, cerebral edema, intracranial expansive process or deep vein thrombosis (fig 1.2.3). Ophthalmological examination showed bilateral visual field alteration (fig 4). Lumbar puncture confirmed intracranial hypertension, thus alleviating headaches and allowing biological analysis of the CSF to return to normal, thus ruling out the diagnosis of idiopathic HTIC. The pregnancy continued without abnormalities; fetal morphology and growth were correct.

The patient was admitted at 43 weeks in the active phase of labor at 10 p.m., without clinical signs of HTIC at her evaluation. Obstetric ultrasound demonstrated a normal fetus without growth retardation or inversion of the cerebroplacental ratio on Doppler

velocimetry. Faced with the context of idiopathic HTIC threatening the visual prognosis with a pregnancy beyond term of 43 weeks, a cesarean section under spinal anesthesia was indicated and performed, resulting in the birth of a newborn weighing 3000g with an Apgar score of 10/10. The postoperative course was uneventful with resolution of HTIC. An ophthalmological check-up (fundus and visual field) and a thrombophilia assessment are planned. Note that this pathological situation in no way contraindicates a possible subsequent pregnancy given the low risk of recurrence.

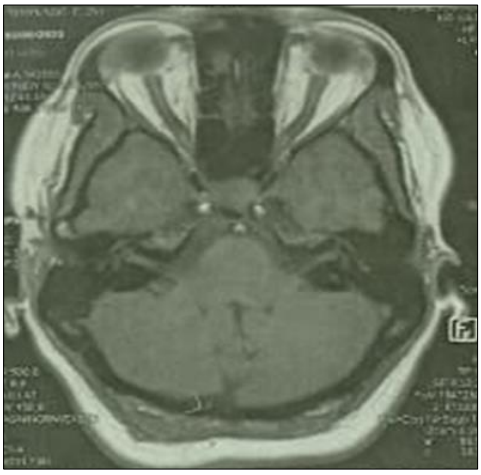

Fig. 1: T1 sequence: Dilation of the optic nerve sheaths with sellar arachnoidocele

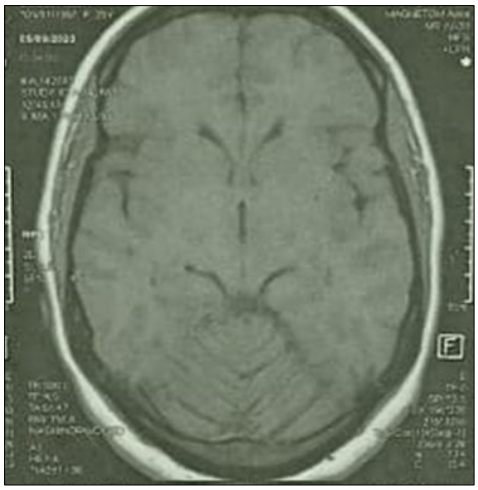

Fig. 2: T1 sequence: lateral ventricles of small sizes

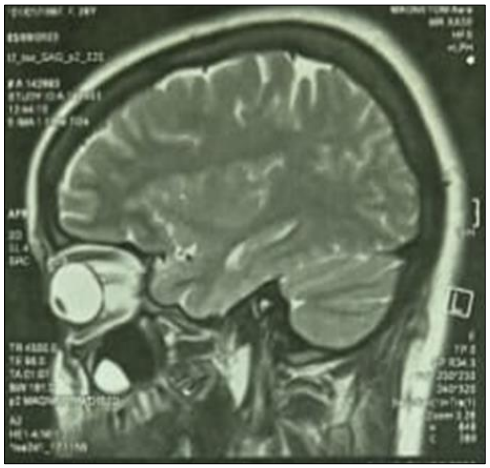

Fig. 3: T2 sequence: Dilation of the optic nerve sheath

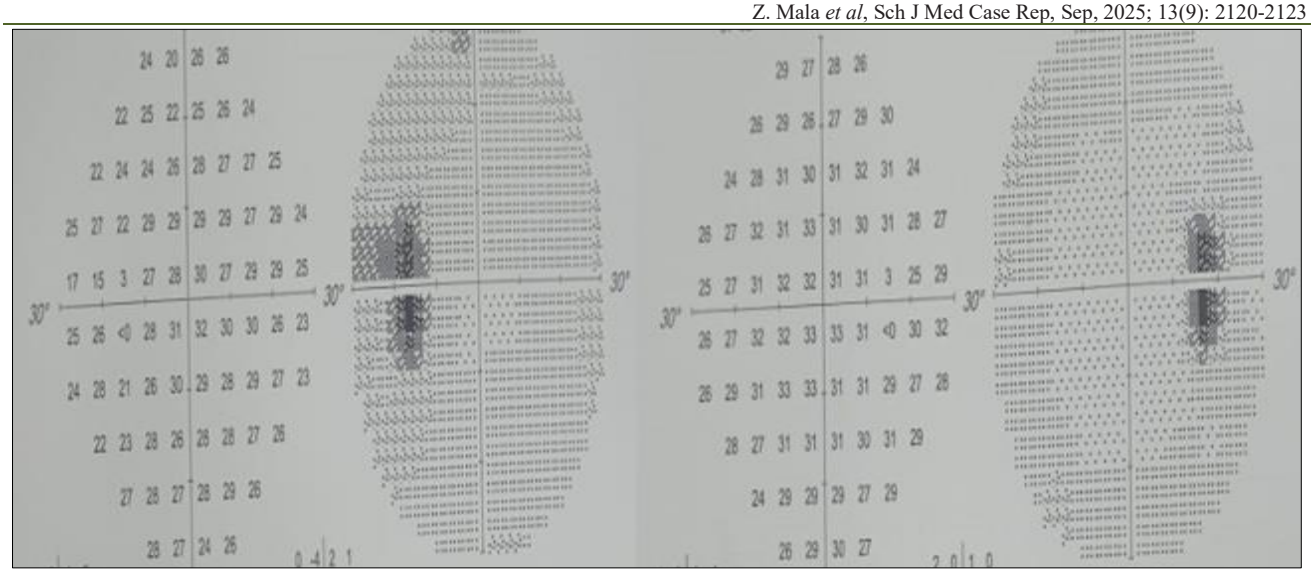

Fig. 4: Visual field examination of both eyes showing enlargement of the blind spot

DISCUSSION

The incidence of idiopathic HTIC is estimated at 1/100,000/year in the general population showing that it is a fairly rare entity with preferential involvement of women aged 20-44 years (19/100,000), and in pregnant women does not exceed 1/870, hence an exceptional complication of pregnancy [2-5]. There are different factors that interfere with the mechanisms of regulation of CSF pressure and venous and arterial circulation leading to benign HTIC in the three trimesters of gestation: mainly obesity, polycystic ovary syndrome, thrombophilia and hyperfibrinolysis [2-6]. The pathophysiological mechanism explaining this pathology is not well known, only several theories have been put forward. At present, it is accepted that this pathology is the consequence of a defect in the reabsorption of CSF at the level of the arachnoid granulations with a probable involvement of the venous system which would be the final common pathway of the pathophysiological theories. Certainly, only 9.4% of cases of benign HTIC were noted to be associated with thrombosis of a dural sinus or stenosis of a venous sinus [3-7]. The diagnosis of this pathology is based on the modified Dandy criteria which are: Signs of HTIC (headache, nausea, vomiting, papilledema, visual eclipse), Normal neurological examination except for IV paralysis, elevation of CSF pressure to more than 20 cmH2O (more than 25 cm Hg in obese subjects), Normal CSF composition and neuroimaging showing small symmetrical ventricles while excluding a mass syndrome or any other cause of elevation of intracranial pressure (ICP) [8].

Based on these criteria, the diagnosis was retained for the patient. Lumbar puncture allowed to objectify the hyperpressure of the CSF and to carry out a cytobacteriological and biochemical analysis returned normal. Cerebral MRI found no signs in favor of hydrocephalus, cerebral edema, or an intracranial expansive process. Note that venous sinus imaging allows to evaluate benign HTIC because the latter prevents venous return by thrombosis or sinus venous stenosis which can be detected by cerebral angiography-MRI [9].

The experience of Huna -Baron and Kupersmith who noted two MFIU in 16 cases despite the progress of the pregnancy does not seem to be influenced by the disease. The administration of acetazolamide should not be prescribed before 20 weeks of gestation because of the risk of sacrococcygeal teratoma. The risk of life is not associated with the pathology but the visual prognosis may be altered with the risk of permanent blindness showing the severity of the disease [3].

Our patient had a past-term pregnancy without any other obstetric abnormalities. However, the repetitive attacks of HTIC were complicated by a marked amputation of the visual field.

Idiopathic HTIC remains a therapeutic emergency with different management from other types of HTIC, it is based on:

1) Hygiene and dietary measures. Indeed, an average reduction in ICP of around 19 cmH2O is associated with a weight reduction of 35 kg.
2) Iterative PLs.
3) Medical treatment:
   - The introduction of corticosteroid therapy based on prednisolone which does not cross the placental barrier, at a dose of 40-60mg/day.
   - Actezolamide reduces the production of CSF acting on the choroid plexus

This medication is not contraindicated during breastfeeding according to the American Academy of Pediatrics. In case of intolerance, it will be replaced by a loop diuretic (furosemide) at a maximum dose of 40 mg

three times a day for a limited duration given the risk of dehydration [3-11].

In our case, our patient had progressed well after repeated lumbar punctures. However, surgical management is indicated in case of failure of the aforementioned treatment or in malignant forms that compromise the visual prognosis. The latter consists of fenestration of the optic nerve sheath or CSF diversion by a lumboperitoneal or ventriculo -peritoneal shunt. Thus reducing ICP and decompressing the optic nerve to improve vision in 75% of cases within 3 to 4 weeks. Recently, the placement of a dural sinus endoprosthesis by endovascular route has been proposed in certain cases of sinus venous stenosis [12, 13].

Vaginal delivery is contraindicated in cases of HTIC flare-up. Expulsive efforts can be reduced by epidural anesthesia and obstetric instrumental extractions. Cesarean section under locoregional anesthesia is reserved for obstetric indications. The case of recurrence is low in the next pregnancy except for a few cases described in the literature in the context of obesity or sickle cell disease [3].

CONCLUSION

Benign HTIC is a rare pathology during pregnancy that should be considered in the presence of any HTIC syndrome based on the modified Dandy criteria. It is a medical and surgical emergency with no impact on the course of the pregnancy but affecting the visual prognosis. Cesarean section is performed in obstetric situations indicated associated with HTIC flare-ups with a need to perform thrombophilia assessment postpartum. The risk of recurrence if a new pregnancy were to be considered is low.

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