Cavernous malformations and labour analgesia: A case report

Sir,

Cavernous malformations raise the fear of severe cerebral or spinal bleeding during delivery.[1] Here, we report a case of labour analgesia with epidural catheter in a patient presenting with cerebral cavernous malformations.

A 31-year-old pregnant primipara with a normal course of pregnancy presented with a history of familial cavernous malformations, with a Krex interaction trapped protein 1 mutation identified. The woman reported a moderate headache since she had been diagnosed. In a recent cerebro-spinal magnetic resonance imaging (MRI), several cerebral cavernous malformations were noted in the frontal and parietal lobes of the right hemisphere [Figure 1]. No lesions were detected in the spinal cord. Spontaneous delivery occurred after 40 weeks of amenorrhoea. The introduction of a lumbar epidural catheter during labour allowed an appropriate control of pain using programmed intermittent epidural bolus (10 ml per hour and 5 ml bolus upon request with a refractory period of 12 min) with 1% ropivacaine and 0.2 µg/ml sufentanil.[2] Blood pressure was monitored during the entire procedure, with the objective of keeping it in a normal range. Because of foetal rhythm disturbances, obstetricians used a vacuum-assisted delivery. The baby presented normal breathing efforts, heart rate, reflexes and skin colour at 5 min of life. No complications appeared during hospitalisation.

Cavernous malformation appears mostly in a sporadic form but can be inherited. Single lesions characterise the sporadic form, whereas multiple cavernous malformations may indicate an inherited form. Lesions are composed of dilated capillaries organised in multilobulated caverns with a large range in size.[1] Their natural evolution can be thrombosis and regression as well as growth and more symptomatic forms. The symptoms are linked to their localisation.

The risk of bleeding from a lesion is 0.7% annually. If the lesion already bled, the risk jumps to 4.5%.[3] A lesion localised close to the brain-stem presents a higher risk of bleeding. Pregnancy can make the lesion grow, because of the increase of “vascular growth factor”.[3]

Some specific points might need to be considered in the case management. First, looking for a suggestive familiar background would help detect paucisymptomatic cases. A patient with a cavernous malformation could benefit from regular cerebro-spinal MRI evaluation. Neuroimaging helps to evaluate the size and the possible recent growth of lesions and may uncover a medullary lesion contraindicating the use of an epidural catheter. Severely symptomatic cavernous malformation patients suffering from recent intracranial haemorrhage or uncontrolled epilepsy should consider a surgical resection of the lesion. The main risk factors of bleeding are: a history of previous bleeding lesion, inherited cavernous vascular disease, the closeness of venous malformations, brain-stem lesions or coagulopathy.

During delivery, an epidural catheter would help achieve a good control of high blood pressure in
response to painful uterine contractions and allow a rapid shift to a caesarean delivery in case of maternal complications. There is no clear causal relationship between intracranial bleeding from cavernous malformations and high blood pressure in previous studies. However, there are multiple reports of high blood pressure and bleeding from arteriovenous malformations or cerebral aneurysm. If caesarean delivery is recommended from the outset, spinal anaesthesia appears to suit the objectives of appropriate care, as it avoids risky intubation in pregnancy and allows for good neurological monitoring.

In conclusion, neuraxial anaesthesia allows analgesia, blood pressure control and a crucial neurological monitoring for women at risk of intracranial bleeding.

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Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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