
POST-MYELOGRAPHY HEADACHE AND ITS MANAGEMENT

Wiroj PENGPOL*
Bussaba PAKDIRAT**

ABSTRACT

A case of postdural puncture headache due to lumbar myelography is reported. Conservative treatment by hydration, analgesics and bed rest are not successful. Epidural blood patch is performed as the curative treatment which brings an immediate relief.

INTRODUCTION

Headache as a result of dural puncture (PDPH), is not a frequent complication of myelography. It is more often found in spinal anesthesia. Potential development of this condition remains the main objection to its use. Myelography can also be the cause of this symptom. Whenever a headache occurs in a patient undergoing myelographic study, it is important to recognize as a serious symptoms. A prompt diagnosis and treatment must be made.

CASE REPORT

A 43-yr-old female presented with a sciatica pain all over her left leg for 3 weeks. The lumbar myelography was done to find out the cause and degree of its severity. The lumbar puncture was performed through an L2-3 interspace with the patient in lateral decubitus position by 20 G spinal needle, Quinke type. Having established free flow of cerebrospinal fluid (CSF) through the needle, 10 ml. of Iopamiro, a water soluble non-ionic contrast medium, was injected. After the myelography, the patient stayed in bed with the head 45

degree up for 6 hours. The pulse rate and the blood pressure were closely monitored. She was recommended to drink plenty of water and 2 tablets of paracetamol were taken for pain relief.

Next morning, a headache with dizziness occurred after she helped herself to a sitting position. It was relieved by lying flat. The headache was so severe that she could not get out of bed to attend the physical therapy clinic. She was suggested to stay in bed for further 24 hours and 10 mg. intramuscular Diazepam was given but she did not get better. The anaesthetologist was then consulted. Epidural blood patch was selected as the treatment for this patient.

A 17 G epidural needle was introduced with "loss of resistance technique" into the epidural space at the same intervertebral level as that used for the previous dural puncture (L2-3). Using full aseptic and antiseptic precaution, 10 ml. of blood was withdrawn from the patient's antecubital vein and injected into the epidural space. The headache disappeared immediately in a dramatic response and she could sit with a smile. The patient could attend the physical therapy clinic on the following day.

* Department of Anaesthesia, Ratchaburi Hospital, Ratchaburi 70000, THAILAND

** Department of Radiology, Ratchaburi Hospital, Ratchaburi 70000, THAILAND

DISCUSSION

Post-myelography headache occurs as a result of dural puncture which is similar to the mechanism of postdural puncture headache (PDPH), the complication of spinal anesthesia. It is thought to be caused by leakage of spinal fluid through the needle hole in the dura, as suggested by Bier in 1899 (1). Due to the pressure gradient between the intradural and extradural space, about 40-50 cm water in the sitting position, spinal fluid is lost into the epidural space as long as the dural hole exists. The amount of fluid lost is dependent on the size of the hole and the rate of the CSF production. In experiments with patients in the erect position, withdrawal of 20 ml. spinal fluid resulted in headache, which was promptly relieved by reinjection(2). The consequences of CSF loss are, a drop in spinal subarachnoid fluid pressure, and a decreased subarachnoid fluid volume. In the vertical position, the brain tends to descend as it is deprived of its fluid cushion, this leads to traction on the pain-sensitive supporting structures of the brain and traction on venous sinuses and cerebral vessels. Moreover, a compensatory mechanism to restore the intracranial volume results in dilatation of intracranial blood vessels(3).

According to Brownridge(4), pain is referred above the tentorium via the trigeminal nerve (V) to the frontal region, and below the tentorium via the glossopharyngeal and vagal nerves (IX,X) to the occiput and via the upper cervical nerves (C1,2,3) to the neck and shoulders. A headache is considered a typical PDPH if it fulfills the criteria laid down by Driessen et al(5), i.e. : (a) the headache occurs typically after the patient becomes ambulatory, is aggravated in the erect or sitting position, and is relieved by the patient's lying flat; (b) the localization is mostly occipital or frontal; and (c) the headache is accompanied by dizziness, vomiting, rigidity of the neck, and visual or auditory disturbance.

The incidence of PDPH has been reported to vary from less than 1 % to more

than 30 % after accidental dural punctures or diagnostic dural puncture using large needles (3-11). The following factors are thought to influence the incidence of PDPH(8) : (a) age - higher incidence in younger patients; (b) gender - higher incidence in females; (c) needle size - the larger the diameter of the needle, the higher the incidence and the more prolonged and severe the PDPH; (d) multiple dural punctures - higher incidence associated with increased number of the perforations of the dura mater; (e) needle level, direction, and relationship to dural fibers - higher incidence if the needle is inserted perpendicularly to the longitudinal dural fiber, thus cutting instead of separating them ; (f) duration of postoperative recumbency - conflicting results indicate questionable relevance of this factor on the incidence of PDPH; and (g) previous history of PDPH - higher incidence in this group.

However, the incidence of PDPH as a complication of post - myelography is relatively low in our hospital. This may be due to the lack of post myelography visit. If headache occurs, the anaesthesiologist should be consulted for proper management. Since PDPH is mild or moderate in 85 % of patients, it is self-limiting and in most cases disappears within 1 week, the initial management is usually conservative(3). Bed rest is advised as the headache is postural, but it is not a recommended use as a preventive measure against PDPH. Normal fluid intake is necessary to guarantee a good state of hydration. Analgesics and sedatives have no beneficial effect but help to alleviate the symptoms. The curative treatment of PDPH is closure of the hole in the dura by injection of homologous blood into the epidural space : the epidural blood patch. This treatment is so effective and free of serious complications that there is little reason for delay in the following conditions: when headache is severe which does not diminish or disappear within a few days of conservative treatment, or affects the time of patient to be discharged from hospital. The headache disappears rapidly, often immediately, and in 90 % of the patients the relief is permanent. Reported minor complications are backache and paresthesias during injection.

In conclusion, headache as a complication of myelographic study should not be neglected, proper and immediate treatment should be sought for.

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