# Recurrent postdural puncture headache

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## INTRODUCTION

Dural puncture is a medical procedure commonly used in the investigation of headache syndromes of uncertain aetiology. One of the possible complications of dural puncture is headache.

This report describes a case of treatment-resistant postdural puncture headache, and reviews the clinical features and treatment of postdural puncture headache.

Conventional medical and anaesthetic treatments for postdural headache are effective in 85% of cases. The incidence of postdural headache can be reduced by correct orientation of the needle. This patient may have had several holes in the dura, possibly as a result of difficulty performing the procedure, making her headache particularly difficult to treat.

## DISCUSSION

The mean incidence of postdural puncture headache is approximately 30% (Isselbacher et al, 1994), although an incidence as low as 7.35% has been reported (Lybecker et al, 1995). Postdural puncture headaches occur on day one postdural puncture in 53% of cases, and by day two in 89% (Vilming and Kloster, 1997), but onset may be delayed for up to 12 days (Isselbacher et al, 1994). The headache is usually a dull ache, but may be throbbing. It may be accompanied by nausea, neck stiffness, blurred vision, photophobia, tinnitus and vertigo. Headache is dramatically positional, being relieved by reclining or abdominal compression, and aggravated by sitting upright, head shaking and jugular vein compression (Isselbacher et al, 1994).

In one regression analysis of age, sex and chronic tension-type headache, only bilateral headache significantly contributed to the prediction of postdural puncture headache (Hannerz, 1997). There is conflicting evidence to suggest that female sex and an age between 20 and 40 years are independent risk factors (Morewood, 1993). Needle size and tip characteristics are significant. One study showed that the incidence of postdural headache was 5.2% with 26-gauge Quincke needles, compared to 2.7% with 27-gauge Quincke needles and 1.2% with 25-gauge Whitacre needles (Lambert et al, 1997).

The cerebrospinal fluid leaks through the punctured dura, causing traction of the meninges which causes pain. According to past reports, the symptoms last for a few days, but may linger for weeks to months. In one study, 60% of headaches recovered spontaneously; these had a mean duration of 5 days, with a range of 1–12 days (Lybecker et al, 1995). A lumbar dural leak may be detected by magnetic resonance imaging of the lumbar spine (Iqbal et al, 1995). If symptoms persist, computed tomography of brain will help rule out subdural haematoma, which may occur as a result of traction on the meninges (Whiteley et al, 1993).

Caffeine sodium benzoate (500 mg intravenously, given over a few minutes) will relieve headache in up to 75% of cases (Isselbacher et al, 1994). A second dose will relieve a further 10%. An epidural blood patch (injecting 15 ml of homologous blood) is an effective permanent treatment in the majority of cases (Morewood, 1993). In some cases, a second blood patch may be required (Reynolds, 1993). If postdural headache recurs, it usually does so within the first week, but may recur later (Sidebotham et al, 1997).

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## CASE REPORT

A 14-year-old female presented with a 3-day history of generalized headache, photophobia, neck stiffness and nausea. She had no history of neurological illness or trauma. Clinical examination was normal. Complete blood count, serum urea and creatinine, urine culture and throat swab culture were normal. Dural puncture was carried out under aseptic technique. A 22-gauge Sprotte spinal needle was inserted between the third and fourth lumbar vertebrae, and thirty drops of clear cerebrospinal fluid were removed. Laboratory examination of the fluid was normal, and the patient was treated with analgesics. The headache improved, but did not resolve completely.

She was discharged the following day, but presented 4 weeks later, with a severe, intermittent frontotemporal headache. It was associated with nausea, aggravated by changing posture, and transiently relieved by abdominal pressure. Postdural puncture headache was diagnosed, and a blood patch relieved her symptoms completely.

Four weeks later, she presented with a recurrence of headache. A second blood patch relieved her symptoms again. Four weeks later, she presented again with a recurrence of headache. Computed tomography of brain and magnetic resonance imaging of lumbar spine were normal. She was treated with amitriptyline and carbamazepine. Symptoms improved, and her pain-free intervals became longer. Three months after the dural puncture she still had headache.

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edge is parallel to the longitudinal dural fibres (Mihic, 1986), although only about a third of neurology and neurosurgical departments use the correct orientation of the needle (Serpell et al, 1998).

In this case, the diagnosis of postdural puncture headache is suggested by the temporal relationship to dural puncture, the positional nature of the headache, relief with abdominal compression and (transient) response to blood patches. It is unusual to see a postdural puncture headache that is present 3 months after dural puncture. This patient may have had several holes in the dura. This case is particularly unusual because the symptoms were relieved (transiently) by each of two blood patches, but then recurred. **HM**


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