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# Spinal Epidural Hematoma with Subarachnoid Hemorrhage Caused by Acupuncture

James R. Keane,<sup>1</sup> Jamshid Ahmadi,<sup>2,4</sup> and Peter Gruen<sup>3</sup>

**Summary:** Unintentional acupuncture needling of the thoracic spinal canal produced a spinal epidural hematoma and subarachnoid hemorrhage. This case demonstrates that patients are sometimes reluctant to disclose folk medical treatments to Western physicians, and the proper diagnosis may depend upon the prowess of the neuroradiologist.

**Index terms:** Acupuncture; Iatrogenic disease or disorder; Spinal cord, hemorrhage

Subarachnoid hemorrhage originates in the spinal canal in only 0.6% of patients (1). The typical history in such cases is of sudden severe back pain with subsequent neck pain and stiffness (1). In the following patient, mild back pain was overshadowed by symptoms of intracranial hemorrhage.

## Case Report

A 65-year-old woman was admitted to the neurosurgery service with a 10-day history of headache, nausea, vomiting, and painful stiff neck. Neurologic examination was normal; however, further history disclosed that the patient had been treated for "nervousness" for several years with periodic acupuncture needling of the posterior neck. At her last session, needles had been inserted into her back for the first time. Symptoms appeared within several hours of this visit. Examination of the back showed multiple needle marks in the right paramedian midthoracic area.

A computed tomography (CT) scan of her head showed no abnormalities. Lumbar puncture produced xanthochromic fluid containing 870 red cells and 517 white cells. Magnetic resonance (MR) imaging of the head was normal. However, MR of the spine revealed a midthoracic epidural hematoma (Fig. 1). Four-vessel cerebral angiography was also normal, excluding an intracranial cause of subarachnoid hemorrhage.

As her headache and stiff neck improved, midback pain became increasingly apparent. All symptoms resolved in the week following admission without specific treatment. The patient was offered a follow-up MR examination but refused because she was asymptomatic.

## Discussion

The instructional literature on acupuncture tends to ignore or minimize the possibility of complications (2–4). Attention is focused on the dangers of worsening the imbalance of yang and yin, but physical harm from the techniques, aside from warnings of occasional syncope during treatment, is not stressed.

Delay in diagnosis apart, a host of injuries have resulted from acupuncture treatment. Most complications involve either infection associated with poor sterile technique, or unintentional needle penetration of various structures. Reported medical complications include hepatitis (5), AIDS (6), auricular chondritis (7), endocarditis (8), spinal infection (9), pneumothorax (10), pneumoperitoneum (11), and fatal cardiac tamponade (12).

Neurologic complications have been noted in Japan (13–16), and most often result from penetration of the spinal cord at the C1–C2 level by a retained needle fragment. Delayed symptoms (four cases) were witnessed more commonly than immediate complications (two cases), and all resulted from accidentally retained needle fragments. (Some techniques require intentional deposit of small needles in the subcutaneous tissues (17).)

Pleocytosis in our patient presumably resulted

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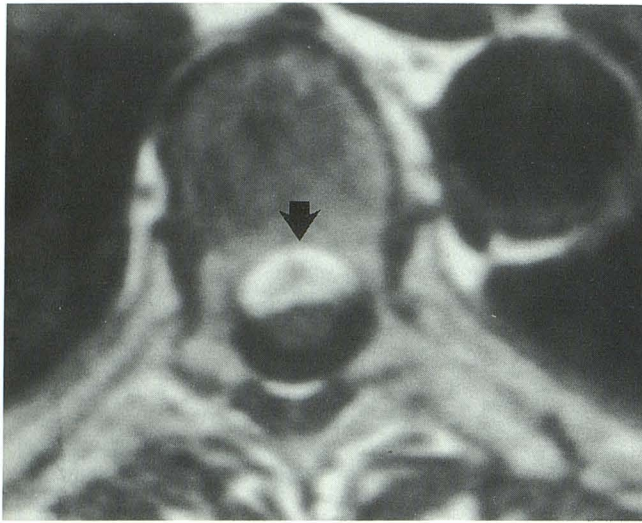
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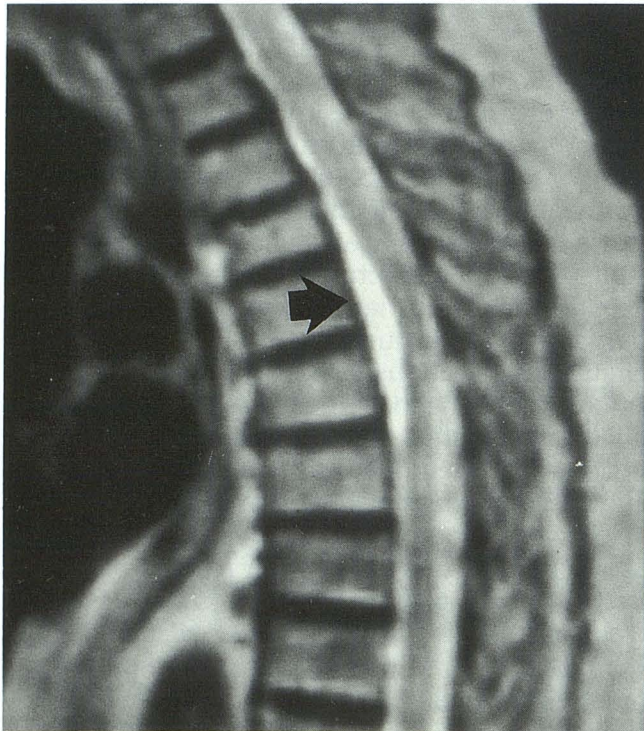
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A



B

Fig. 1. A, Axial, spin-echo 550/18, and B, sagittal, spin-echo 1800/80, MR images of thoracic spine show subacute epidural hematoma at the level of the T5-T6 vertebral bodies (arrows).

from the aseptic meningeal reaction commonly found with subacute subarachnoid hemorrhage (18). She experienced prompt symptoms, did not have a retained needle, and recovered without surgery—unlike most reported cases.

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