Spinal Cord (2006) 44, 258–259

www.nature.com/sc

Case Report

Paraplegia caused by spinal infection after acupuncture

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Study design: Case report of a 64-year-old man with psoas abscesses, epidural abscess and spondylitis after acupuncture.
Objective: To report a case of paraplegia caused by spinal infection after acupuncture.
Setting: Seoul, Korea.
Case report: A 64-year-old man came to an emergency room because of severe back pain. At 3 days prior to visit, the patient received acupuncture therapy to the low back with a needle about 10 cm in length because of back pain. Pain was aggravated gradually for 3 days. *Escherichia coli* sepsis developed with altered mentality during admission. At hospital day 9, he regained his consciousness and was found to have paraplegia. Abdominal computerized tomography (CT) and lumbar spine magnetic resonance imaging (MRI) revealed abscesses of bilateral psoas muscles and spondylitis with epidural abscess. After conservative management with intravenous administration of antibiotics, infection was controlled but the patient remained paraplegic (ASIA scale C L1 level) without neurological recovery.
Conclusion: Paraplegia might result from complications of an acupuncture therapy.
Spinal Cord (2006) **44,** 258–259. doi:10.1038/sj.sc.3101819; published online 6 September 2005

Keywords: acupuncture; spinal infection; paraplegia; psoas abscess

Introduction

Acupuncture has been known to be a safe treatment for relieving pain.[1,3] However, an accurate knowledge of anatomy and special training is required to practice it without neurovascular injury or infection.[3] Many people both medical and nonmedical therapists tend to practice it.[3] Several serious and life-threatening complications associated with acupuncture have been reported.[1–3] We experienced an unusual patient who developed paraplegia following psoas abscesses, spinal infection and sepsis after acupuncture.

Case report

A 64-year-old man visited an emergency room due to severe low back pain. He had difficulty in walking due to pain. He had suffered from low back pain for 20 years and was diagnosed as suffering from spinal stenosis by magnetic resonance image (MRI) a few months ago. He received acupuncture therapy on four sites of lumbar paraspinal muscles 3 days before admission. According to him, the needle was over 10 cm in length. Back pain worsened gradually for 3 days.

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At day 1, he had no fever and chilling sense without neurological abnormality. MRI did not reveal any significant change compared with previous MRI findings. However, laboratory tests suggested a possibility of infection (leukocytosis ($12\,530 \times 10^3\,\mu$l), segmented neutrophil count (93%), C-reactive protein (CRP), 32.52 mg/dl, aPTT (52.2 s) and platelets ($20 \times 10^3\,\mu$l)). At day 2, high fever developed with an abrupt alteration in mental state. He was treated with intravenous antibiotics (cefazolin and ciprofloxacin) empirically. Lumbar puncture was not performed due to low platelet count. At day 3, he had septic shock. Leukocytosis and high fever were not improved. His heart rate went up to 150 beat/min and blood pressure was low. He was transferred to the intensive care unit and was supported by an artificial ventilator.

Abdominal ultrasound sonography was normal except for a diffuse fatty liver. At day 5, *Escherichia coli* was cultured from his blood sample. At day 9, the ventilator was removed and consciousness improved. Paraplegia was found on neurological evaluation. Computerized tomography (CT) was arranged to search for an infectious source in the retroperitoneal cavity. Bilateral psoas abscesses were found. Additional MRI revealed infectious spondylitis with epidural abscess (Figures 1 and 2). As the patient did not want to have an emergency operation for surgical drainage, conservative

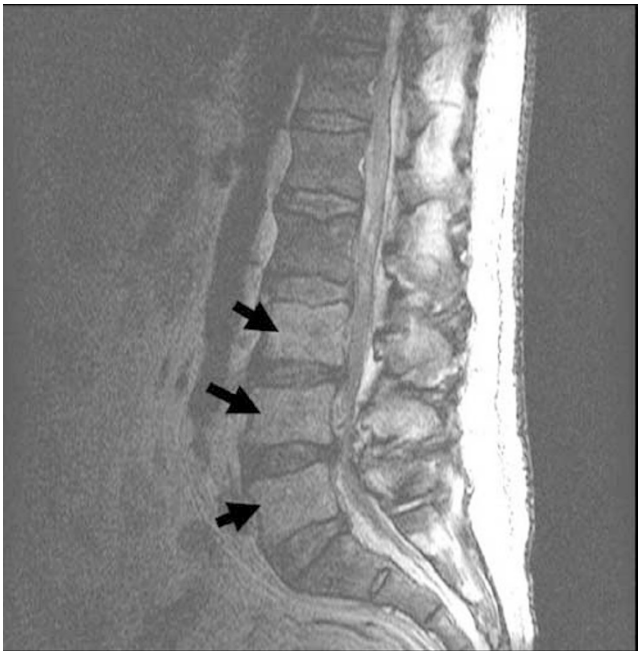

Figure 1 Marrow signal intensity at L3, 4, 5 levels with epidural abscess from T11 to L3 (black arrow), T2-weighted image

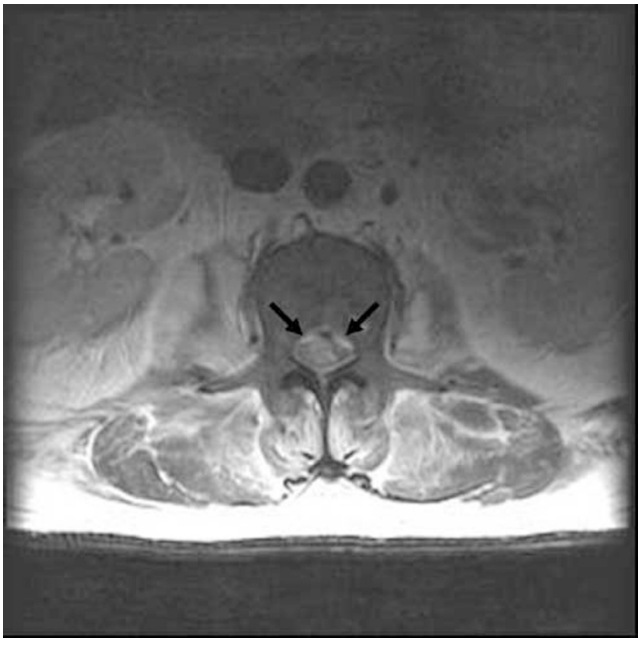

Figure 2 Enhancement of epidural abscess at L2 level (black arrow), T2-weighted image

treatment was maintained. Fever subsided a few days later. After spinal infection and psoas abscesses were controlled, he was transferred to the rehabilitation department for 3 months. He was discharged as a paraplegic, ASIA(C) L1/L1. No neurological recovery was observed.

Discussion

Acupuncture has become one of the common therapeutic tools for treating low back pain. However, the qualifications for practitioner and for equipment are not standardized internationally. In some parts of the world, many people with poor qualifications tend to practice it with diverse shapes and lengths of acupuncture needles.

Major complications of acupuncture on the back consist of pneumothorax, infection, neurovascular injury and so on. Although pneumothorax is the most frequently reported complication, infectious complications are also common.[3] Psoas abscess is a serious complication because of the difficulty in early diagnosis. Predominant organisms of psoas abscess are *Staphylococcus aureus* and enteric bacteria in both primary and secondary.[4] The clinical triad consists of fever, pain in back, flank or abdomen and hip flexion contracture. Satoshi *et al*[5] reported that psoas abscess with septic shock has a shorter duration of symptoms before hospitalization and fewer presentations of the clinical triad than psoas abscess without septic shock. Psoas abscess with septic shock seems to be the outcome of a more delayed diagnosis and has a worse result as in the present case.

The patient did not show any kind of neurological recovery. He also suffered from spinal instability during the follow-up period as an outpatient because spinal infection eroded the vertebral body and disc.

His altered consciousness and the use of an artificial ventilator was thought to be responsible for the delayed diagnosis of neurological deterioration. Careful history taking and thorough physical examination cannot be overemphasized to prevent delayed diagnosis.

According to the patient, the needle seemed to be over 10 cm in length. Usually, such a long needle is not used due to risk of injury. *E. coli* was cultured from the blood of the patient. The colon was presumed as a probable source because the acupuncture needle might have been long enough to produce microperforation of the colon.

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