

Intraspinal Epidural Hematoma Caused By Acupuncture Mimicking An Intraspinal Synovial Cyst: A Case Report

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Case report

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Abstract

Background Intraspinal hematoma is a rare complication of acupuncture. A few cases of subdural hematoma or epidural hematoma have been reported, with most of them in a fusiform shape, making the hematomas easy to identify on magnetic resonance imaging (MRI) scans.

Case presentation A 49-year-old man presented with back pain that radiated into his lower limb that had appeared during acupuncture of his back. After admission, MRI was performed and indicated an L5/S1 intraspinal mass that had an oval shape, resembling an intraspinal cyst. The patient underwent surgery to remove the mass, which was confirmed to be a hematoma.

Conclusion Intraspinal hematomas appear with various intensity signals and shapes on MRI, making its differential diagnosis difficult. A carefully medical history review (to determine if the pain derives from a puncture-type treatment or an injury) and surgical exploration may be helpful for identifying this condition.

Background

Two studies [1, 2] have reviewed the literature on spinal hematomas caused by acupuncture. There were in all 7 cases of epidural hematoma and 1 case of subdural hematoma. All the patients developed nerve dysfunction a few hours to a few days after the acupuncture procedures, the longest time from the acupuncture to the time point of symptoms was one week, the patient formed Bacterial Meningitis and diagnosed by MRI scan[3]. Due to the short time of symptom after acupuncture treatment and the typical fusiform shape of hematomas on MRI scan, the diagnosis of intraspinal hematoma was easy to made.

Case Presentation

A 49-year-old man presented with a history of having undergone acupuncture treatment at another institution. During the acupuncture, he had experienced sudden, acute back pain that radiated into his left leg. The severe back pain continued for about a month following the acupuncture treatment, whereupon he concluded that the acupuncture had probably harmed his back. He then consulted our hospital.

After admission, he continued to complain of back and left leg pain. Physical examination revealed a positive Lasegue sign ($45^{\circ}+$) in the left lower limb. Neurological examination of both legs was normal, and urinary function was normal. There were no needle marks or signs of a skin infection in the lower back area. His medical history showed no other pathological conditions, and he had been taking no anticoagulant medicine recently. Laboratory findings (routine blood tests, blood biochemistry evaluations, blood clotting function tests) were within the normal range. Because he had been treated at another hospital, the needle size and the depth of needle insertion were unknown.

His MRI results after admission showed an intraspinal mass at L5/S1. The mass, which was oval, showed T2 isointensity and T1 hyperintensity. On MRI, it resembled an intraspinal synovial cyst. We

thought the mass was probably a ligamentum flavum cyst or a facet joint cyst because it was attached to the facet joint on the left side of the spinal canal (Fig. 1).

Thus, with the possible diagnosis of an intraspinal cyst compressing the right S1 nerve root, we performed a laminectomy to relieve the patient's low back pain, for which analgesic treatment was ineffective. Removal of the L5 left inferior margin plate clearly exposed the mass, which proved to be a blood clot surrounded by epidural fat with no capsule. It did not contain any jelly-like material, there was no calcification around the rim, and the nerve root and dura mater were intact. Thus, an epidural hematoma was diagnosed. The surgery went smoothly and was completed in less than 1 h. His symptoms were immediately relieved by the surgery, and he showed good function at the final follow-up visit in April 2020.

Discussion And Conclusions

In the previously reported cases of intraspinal hematoma after acupuncture, the hematoma extended more than one level and had a fusiform shape. T1-weighted imaging in those cases revealed a low-signal mass. In the present case, the different type and T1-weighted signal hyperintensity may have been due to a relatively longer history—that is, our patient underwent MRI 1 month after his acupuncture, whereas patients in previous studies were evaluated only a few hours to a few days after their acupuncture. Thus, the hematoma in our patient might have formed an inflammatory capsule over time.

Unlike the mass in our patient, most intraspinal cysts have T1 hypointensity on MRI scans [4]. Nevertheless, both intraspinal hematomas and cysts display various MRI signals [4–6], making it difficult to distinguish these two diseases when the shape of the mass is cyst-like on MRI scans, as in our case. A careful medical history review to determine the basis of the pain (e.g., facet joint block, acupuncture, epidural injection) is helpful for pinpointing the correct diagnosis. Finally, the pathology of the intraspinal mass can be confirmed only by evaluating the intraoperative findings.

Declarations

Ethics approval and consent to participate

This patient provided informed consent that all his medical information and imaging data could be used for medical research.

Consent for publication

The study was approved by the ethics committee of the third affiliated hospital of Guangzhou medical university.

Availability of data and materials

Not applicable.

Competing interests

None of the authors has a conflict of interest with regard to the contents of the study. The study was approved by the ethics committee of the third affiliated hospital of Guangzhou medical university.

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Authors' contributions

ZhangPing made substantial contributions to conception and design of this report. QiuRuixin made the telephone follow-up. ZhangPing, ZhongZhihong, ChengGuoquan were the patient's surgical team. ZhouWei and QiuRuixin wrote the manuscript. All authors reviewed and approved the manuscript.

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References

1. Maurizio Domenicucci, Daniele Marruzzo, Alessandro Pesce, et al. Acute Spinal Epidural Hematoma After Acupuncture: Personal Case and Literature Review. *World Neurosurg*, 2017,102:695.e11-695.e14.
2. JunBum Park, Ryeok Ahn, DaiSik Son, et al. Acute spinal subdural hematoma with hemiplegia after acupuncture: a case report and review of the literature. *The Spine Journal*,2013,13(10):e59–e63.
3. 3.Chen CY, Liu GC, Sheu RS, et al. Bacterial meningitis and lumbar epidural hematoma due to lumbar acupunctures: a case report. *Kaohsiung J Med Sci*,1997,13(5):328-331.
4. Zuo Zhenbo, Li Huanting, Wang Jin, et al. Hemilaminoplasty for the treatment of lumbar intraspinal synovial cysts (LISCs) and literature review. *Eur Spine J*, 2016,25(11):3393-3402.
5. Sung Min Cho, Woo Tack Rhee, Soo Jung Choi, et al. Lumbar Intraspinal Extradural Ganglion Cysts,4 Case Reports. *J Korean Neurosurg Soc*,2009,46(1):56-59.
6. Jin Kyu Kim, Tae Hong Kim, Sang Keun Park, et al. Acute Spontaneous Cervical Epidural Hematoma Mimicking Cerebral Stroke: A Case Report and Literature Review,*Korean J Spine*,2013,10(3):170-173.

Figures



Figure 1

Magnetic resonance imaging. A, B Sagittal views. T1-weighted imaging (A) and T2-weighted imaging (B) show the mass located at the L5/S1 level. C, D Axial views. T2-weighted imaging at different levels of the mass