Acute spinal subdural hematoma

Case report

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A case of an acute posttraumatic spinal subdural hematoma is presented. Complete neurological recovery followed surgical evacuation.

KEY WORDS • subdural hematoma • spinal injury • myelography • cauda equina compression

Spinal subdural hematoma is rare, and only a few cases have been reported. We report a patient who developed a lumbar spinal subdural hematoma following minor trauma.

Case Report

A 26-year-old woman was admitted to the Nassau County Medical Center complaining of fever plus pain and weakness of the right leg. She gave a history of having had a right occipital scalp abscess drained 4 weeks prior to admission. Two weeks prior to admission she fell on her back, but was able to get up and did not complain of pain or weakness immediately. Over the following week, she gradually developed pain, weakness, and numbness primarily of the right leg and was unable to walk for the last few days.

Examination. The patient appeared toxic and in moderate distress. The blood pressure was 120/60 mm Hg, pulse rate 140/min, and temperature 104°F. There was weakness involving both legs, the right weaker than the left. Tenderness was elicited over the spinous processes and paraspinal areas of the 2nd, 3rd and 4th lumbar vertebrae. The deep tendon reflexes were diminished in both legs. The Babinski reflexes were absent. There was a sensory level at approximately the 3rd lumbar dermatome bilaterally; vibratory and position sensations were diminished in both legs. There were diffuse scattered rhonchi and rales in both lungs. The hemoglobin was 12.2 and the hematocrit 35. White blood cell count was 18,500/cu mm with 85% polymorphonuclear cells and 10% lymphocytes. The bleeding and clotting times, platelet count, and urinalysis were normal. Blood and sputum cultures subsequently revealed the presence of Staphylococcus aureus coagulase-positive organisms. Radiographs of the chest revealed the presence of bilateral scattered pulmonary infiltration. Cisternal puncture revealed clear cerebrospinal fluid (CSF) and myelography showed the contrast column to be displaced to the left and anteriorly, from the 2nd to the 5th lumbar level (Fig. 1). Examination of the CSF removed before myelography revealed a protein content of 13 mg% and a glucose of 83 mg%. The spinal fluid culture was subse-
quent negative. The clinical impression was that of septicemia probably secondary to a scalp abscess, and a lumbar epidural abscess. Appropriate antibiotic therapy was instituted.

Operation. A laminectomy was performed from L1–S1. The epidural tissue appeared normal. The dura mater, however, did not pulsate and was purple and tense. The dura was opened and a subdural clot was found, extending from L2–5 (Fig. 2). The hematoma was easily removed, leaving an intact arachnoid membrane. The dura was then closed. The patient tolerated the procedure well. Laboratory examination revealed the hematoma to be an organizing thrombus, and no organisms were cultured.

Postoperative Course. The patient regained motor power and sensation in the legs. However, in spite of antibiotics, she continued to have a spiking temperature. During the following days, she slowly developed a fluctuant tender mass in the right upper thigh; incision and drainage of this mass yielded approximately 500 cc of yellow-green purulent material. The abscess extended deeply to involve the periosteum of the proximal one-third of the femoral shaft. Culture revealed Staphylococcus aureus coagulase-positive

Fig. 1. Lumbar myelogram through cisternal route. Left: Anteroposterior view showing displacement of the contrast column to the left side from L-2 to L-5. Note the relative normal position of the axillary pouches at L-4 and L-5 on the right side. Right: Lateral view showing anterior displacement of the contrast column.
organisms. Following the incision and drainage of the thigh her general condition slowly improved. When discharged 4 weeks after admission, she was asymptomatic and had a normal neurological examination.

Discussion

Spinal subdural hematoma has been described as a complication of anticoagulant therapy and hemophilia. It has also been associated with major spinal injury, usually with vertebral fractures. Single cases have been reported following birth injury, lumbar puncture for spinal anesthesia, and lumbar puncture in a leukemic child.

Four cases of spinal subdural hematoma were reported as being spontaneous in origin or following minor trauma. Our case belongs to the last category.

Rader in 1955 described a case of a chronic spinal subdural hematoma of the lower thoracic spine associated with an injury 5 years earlier; minimal improvement was obtained following surgery. Stewart and Watkins described a case of a chronic subdural hematoma of the mid and lower thoracic spine following trauma; little clinical improvement was obtained from surgery performed 6 months after the trauma.

In our case, the minor trauma the patient had suffered was the most probable etiological factor in the development of the subdural hematoma, as no blood dyscrasia or clotting abnormality were demonstrated. Our case represents the fifth spinal subdural hematoma to be reported in the category of those following minor trauma or occurring spontaneously and the second instance in which complete neurological recovery followed surgical evacuation. Our case is unusual, however, in that the hematoma involved the lumbar region, whereas in the four previously reported cases the subdural hematoma occurred in the dorsal region. The relatively short duration of the symptoms and the location of the hematoma in our patient were prime factors in the complete neurological recovery following surgical evacuation. Another relevant point in our case was the presence of septicemia which was most probably secondary to a scalp abscess, with subsequent seeding to the lungs and thigh.

It is usually difficult to distinguish on the myelogram between an extradural and a subdural extraarachnoid lesion. In rare cases of subdural lesions in which the contrast column is displaced to the opposite side, the ipsilateral axillary pouches of the nerve roots may remain in normal position. In these instances, a diagnosis of subdural lesion may be made. In our case, the contrast column was displaced to the left side from L2-5 but the axillary pouches of L-4 and L-5 on the right side were relatively in normal position. Retrospectively, this radiological finding is probably more compatible with a subdural extraarachnoid lesion than an extradural one.

References

2. Alajouanine T, Castaigne P, Hermitte F:
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