Non-traumatic spontaneous spinal subdural haematoma

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Abstract

We are presenting a case of non-traumatic spontaneous spinal subdural hematoma in a patient on warfarin and fluoxetine. This diagnosis should be considered early in patients who are on warfarin or fluoxetine or both presenting with acute neurological abnormalities of the limbs, and early decompression could result in good neurological outcome.

Spinal subdural haematoma is a rare condition that can have devastating consequences if not managed early. There are multiple aetiologies described in the literature. Common causes of spontaneous spinal subdural haematoma include vascular malformations, neoplasm, and coagulopathy (either hereditary or secondary to anticoagulant therapy).

In this report, we present a case of non-traumatic spontaneous spinal subdural haematoma in a patient on warfarin and fluoxetine.

Case report

A 73 year old gentleman with a background of atrial fibrillation on warfarin presented with sudden onset of back pain. This initially started in the lumbar area with radiation down both lower limbs, and then evolved to complete paralysis of both lower limbs and urinary retention in 12 hours. His past medical history included depression, coronary artery bypass grafting, previous renal calculi, hypertension, transient ischaemic attack, and gastro-oesophageal reflux. His regular medications were fluoxetine, candesartan, metoprolol, simvastatin and ezetimibe.

On admission to the neurosurgical service at Dunedin Hospital, his lower limb power was MRC grade 0 out of 5 in all ranges of movement bilaterally. Light touch sensation in both lower limbs was normal with the exception of the right foot. The knee, ankle and plantar reflexes were absent bilaterally. Rectal examination revealed poor tone in the anal sphincter. The INR was 2.8.

MRI scan showed loculated areas of increased T2 signal anterior and posterior to the cord from T5–T7.

The patient received prothrombinex, vitamin K and dexamethasone before T5–T8 laminectomy was performed with removal of the large subdural haematoma encircling the spinal cord from T5 to T9. The time interval between the onset of the symptoms and the operation was 16 hours.
Fig a–c. Sagittal left to right T2 scans showing loculated areas of increased T2 signal anterior and posterior to the cord from T5-T7; Fig d. Axial T2 scan showing loculated areas of increased signal anterior to the cord at T5/6; Fig e. Axial T2 scan showing loculated areas of increased signal posterior to the cord at T7; Fig f. Tense dura prior to incision; Fig g. Subdural haematoma after incision of dura.
Postoperatively, the patient received daily physiotherapy and recovered some of his lower limb motor function as described in Table 1.

### Table 1 Lower limb strength recovery over 8 weeks period

<table>
<thead>
<tr>
<th>Variables</th>
<th>Admission (Rt)</th>
<th>2 weeks (Rt)</th>
<th>8 weeks (Rt)</th>
<th>Admission (Lt)</th>
<th>2 weeks (Lt)</th>
<th>8 weeks (Lt)</th>
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</thead>
<tbody>
<tr>
<td>Hip flexion</td>
<td>0/5</td>
<td>0/5</td>
<td>1/5</td>
<td>0/5</td>
<td>3/5</td>
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<td>Knee extension</td>
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<td>0/5</td>
<td>3/5</td>
<td>0/5</td>
<td>2/5</td>
<td>4/5</td>
</tr>
<tr>
<td>Ankle dorsiflexion</td>
<td>0/5</td>
<td>2/5</td>
<td>4/5</td>
<td>0/5</td>
<td>2/5</td>
<td>4/5</td>
</tr>
<tr>
<td>Ankle plantarflexion</td>
<td>0/5</td>
<td>1/5</td>
<td>4/5</td>
<td>0/5</td>
<td>1/5</td>
<td>5/5</td>
</tr>
<tr>
<td>Toe extension</td>
<td>0/5</td>
<td>2/5</td>
<td>3/5</td>
<td>0/5</td>
<td>2/5</td>
<td>3/5</td>
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Rt, Right Leg; Lt, Left Leg.

At 8 weeks, he was mobilising with a wheelchair, and still required a suprapubic catheter but was faecally continent.

**Discussion**

A review by Domeniucci et al, which looked at 106 cases of non-traumatic acute spinal subdural haematoma from 1948 to 1998, found that 35% of the cases were on anticoagulant therapy. A number of them were on the early generations of vitamin K antagonist therapy such as dicumarolic therapy. More recent case reports involve other vitamin K antagonists such as warfarin and acenocoumarol.

Another possible contributing factor for the spontaneous bleed was fluoxetine. A case control study looking at 1848 patients on vitamin K antagonist showed that SSRI usage was associated with increased risk of hospitalisation secondary to non-gastrointestinal bleeding such as intracranial bleed, haemarthrosis, haemoperitoneum etc.

This is due to SSRIs decreasing the serotonin level in platelets which eventually leads to the inhibition of platelet aggregation.

In this case, the definitive diagnosis of spinal subdural haematoma was made after investigating the patient with MRI. We agree with Braun et al that MRI is the modality of choice in diagnosing spinal subdural hematoma.

In conclusion, we recommend that patients who are on long term anti-coagulation therapy, especially if this is combined with concurrent use of selective serotonin reuptake inhibitor, presenting with back pain and acute neurological deficits should be investigated with an immediate MRI scan, as early diagnosis of spinal subdural hematoma and subsequent spinal cord decompression could result in good neurological outcome.

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References:


