tumour is unlikely to cure the Cushing’s syndrome as these cases often present late. Considering the limited value of the therapeutic interventions, the prognosis, especially in ectopic ACTH syndrome associated with malignant tumours, is very poor, with a mean survival of 3 to 5 months.


Chronic leg pain

Sebastian Chang, Timothy Brow, Saroj K Das

A 52-year-old man, on long-term steroids for asthma, presented to neurologists in mid-1993 with a 5-month history of bilateral shin pain. It increased throughout the day, especially on standing and eased at rest. They noted a patch of decreased sensation to pin-prick, temperature and light touch in the left L5 distribution, but electromyography and computed tomography of the lumbar spine showed no nerve impingement. He was investigated by a rheumatology team in October 1993, and because of a previous history of sarcoïd lung disease, an isotope bone scan was arranged, which was normal. He was seen by an orthopaedic team in 1994 and magnetic resonance imaging showed “moderate sized L5/S1 disc protrusion, not clinically significant with no evidence of spinal stenosis”. Concurrently, he was also investigated by a vascular team; Doppler studies of both limbs were normal, but unfortunately he did not attend a transfemoral angiogram to exclude aorto-iliac disease. He remained symptomatic and was seen by the vascular team again whilst in hospital for respiratory problems in January 1996. Examination revealed a tender anterior compartment and Duplex studies showed no popliteal entrapment. The compartment pressure readings are shown in the table. Ankle brachial index measurements were 0.9 (right side) and 0.89 (left side).

A diagnosis of chronic compartment syndrome was made. He underwent a bilateral extensor and peroneal compartments fasciotomy (closed technique) in April 1996. In September 1996 his right leg remained pain free but his left leg symptoms returned. Repeated compartment pressure readings were taken (table). A transfemoral angiogram showed adequate flow in both limbs and ankle brachial index readings were 1.1 bilaterally.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>1 What is the differential diagnosis of chronic leg pain?</td>
<td>Cushing’s syndrome, diabetes mellitus, ectopic ACTH syndrome, arthritis</td>
</tr>
<tr>
<td>2 What are the clinical features of compartment syndrome?</td>
<td>Pain, skin pallor, weakness, light touch and pin-prick loss</td>
</tr>
<tr>
<td>3 How should this diagnosis be confirmed?</td>
<td>Magnetic resonance imaging, CT scan, compartment pressure readings</td>
</tr>
<tr>
<td>4 What would be the next stage of management?</td>
<td>Return to clinic for further assessment and management</td>
</tr>
</tbody>
</table>

**Table**

<table>
<thead>
<tr>
<th>Table</th>
<th>Intracompartamental resting pressure readings (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-fasciotomy (April 1996)</td>
</tr>
<tr>
<td></td>
<td>Right</td>
</tr>
<tr>
<td>Extensor</td>
<td>33</td>
</tr>
<tr>
<td>Peroneal</td>
<td>15</td>
</tr>
<tr>
<td>Flexor</td>
<td>15</td>
</tr>
</tbody>
</table>
Answers

QUESTION 1
The differential diagnosis of chronic leg pain is given in box 1.

QUESTION 2
Compartment syndrome can develop acutely or chronically when high pressure within a closed fascial space (muscle compartment) reduces capillary blood perfusion below a level necessary for tissue viability. Acute conditions usually result from trauma or follow ischaemia of the extremities and occur within 24 hours. Diagnosis of the chronic condition can be difficult; it is usually secondary to muscle hypertrophy and arises after exercise. The clinical features are given in box 2.1

QUESTION 3
Pedowitz studied 131 cases of chronic leg pain, measuring intramuscular pressures before, during and after exercise, and considers the following criteria, with the appropriate clinical picture, to be an accurate means of reaching this diagnosis:
- resting compartment pressure ≥ 15 mmHg, and/or
- 1 minute post-exercise pressure ≥ 30 mmHg, and/or
- 5 minute post-exercise pressure ≥ 20 mmHg.2

QUESTION 4
Despite the fact that the pressure in the various compartments following fasciotomy improved, the recurrence of pain and the clinical signs were typical of chronic compartment syndrome and the patient underwent an extensive left lower leg fasciectomy of the extensor and peroneal compartments. A muscle biopsy showed no muscular disorder but features of myositis. He had no further recurrence at his 3-month follow-up. This case illustrates that the only effective treatment is to permanently reduce intracompartmental pressure by fasciectomy which allows for complete decompression of the muscle compartment and reduces the chance of recurrence secondary to postoperative scarring if just a subcutaneous fasciotomy was carried out. This was also shown by Turnipseed et al on 209 patients surgically treated for chronic compartment syndrome.3

Final diagnosis
Chronic compartment syndrome.

Keywords: compartment syndrome; leg pain

Chronic leg pain.

S. Chang, T. Brow and S. K. Das

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