Bilateral adrenal haemorrhage secondary to non-meningococcal sepsis

M.Lubczynska, T. Macriyiannis, Marie-France Kong
Department of Endocrinology

University Hospitals of Leicester

Patient presentation

- A 69 year old man presented to the hospital after a fall from a 6 foot ladder. Previously fit and well with a 55 pack year smoking history. Rushed to hospital as trauma call.

**A & E work up:** CT scan full body: fractures of the left 6th rib and right superior and inferior pubic rami. Incidental finding of 5.2cm in diameter abdominal aortic aneurysm with no features of endovascular leak.

**Treatment:** conservative with analgesia and transfer to orthopaedic ward

**Timeline:**
- On day 14 of admission, patient became septic with pyrexia of 38.2 °C, tachycardia (HR 105), hypotension (MAP<50), and oliguria (UO<20mls/hr). He was commenced on sepsis bundle with antibiotics and aggressive fluid resuscitation. Three sets of blood cultures along with FBC, U&E, LFTs and CRP were obtained. He was subsequently transferred to ITU requiring intubation and ventilation.

- On day 15, emergency CT scan of the abdomen showed images in keeping with bilateral adrenal haemorrhage and stable AAA.

Endocrine consult → Patient was commenced on intravenous steroids.

- On day 16, he was extubated and converted to oral hydrocortisone and fludrocortisone. He remained hemodynamically stable requiring no organ support.

- On day 17, he was stepped down from ITU to a medical bed as he remained stable.

- On day 21, he was discharged from hospital with oral supplementation of hydrocortisone and fludrocortisone.

**Follow up visit:** Seen in the endocrinology clinic 6 weeks after discharge from hospital. He had not had any hydrocortisone or fludrocortisone tablets for 6 weeks as he did not realise he needed to continue taking these medications. SST → suboptimal response still and restarted on treatment. Advice given on sick day rules.

**One year later:** patient underwent unremarkable elective repair of AAA.

Evaluation and diagnosis

- **Laboratory and radiological data:**
  - 3 sets of blood cultures- no growth after 72 hours
  - short Synacthen test (SST):

<table>
<thead>
<tr>
<th>Time</th>
<th>Cortisol level (nmol/L)</th>
<th>ACTH level (ng/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>231</td>
<td>339</td>
</tr>
<tr>
<td>30min after SST</td>
<td>283</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Discussion

- Bilateral adrenal haemorrhage (BAH) has an estimated incidence of 4.7-6.2 per million in developed nations.

- Most common aetiology is trauma, including iatrogenic causes due to extracorporeal shock wave lithotripsy and electroconvulsive therapy.

- Spontaneous BAH is associated with the following predisposing conditions:

References

2. Donald IP, Freeman CP. Adrenal hemorrhagic necrosis following electroconvulsive therapy. Lancet 1982;31:277