An Unusual Case of Acute Adrenal Insufficiency

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Introduction:

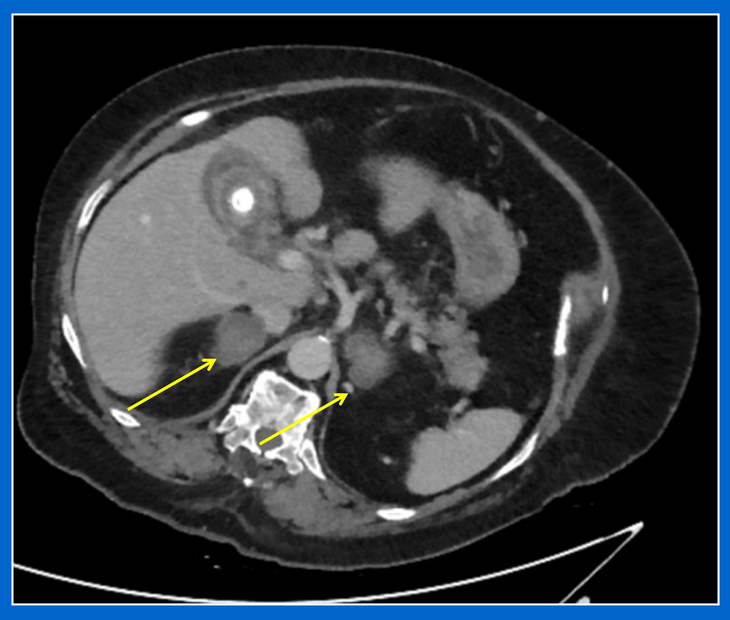
Adrenal insufficiency is an uncommon endocrine condition with an incidence of 4 cases per million(1). Common non-iatrogenic causes include autoimmunity, infections and infiltrations. We describe a case of acute adrenal insufficiency secondary to an unusual cause.

Initial Presentation:

A 77-year old female was admitted under the surgeons with abdominal pain and pyrexia. Abdominal ultrasonography showed large stones within a thickened gallbladder and a probable diagnosis of acute cholecystitis was made. All microbiological tests were negative and she was commenced on broad-spectrum antibiotics. Her condition deteriorated with hypotension and she was transferred to the intensive care unit. Abdominal CT scan revealed additional findings in the form of a non-occlusive IVC thrombus, hepatic vein thrombosis **and bilateral adrenal enlargement reported as "possibly bilateral adenomas"**. Following intensive treatment she improved and was discharged with long-term anticoagulation and a clinic appointment to investigate adrenal masses.

Second Presentation:

4 weeks later, she was readmitted with dizziness, hypotension and acute kidney injury. A synacthen test confirmed adrenal insufficiency and she was commenced on hydrocortisone replacement. Repeat CT scan showed complete resolution of previously noted bilateral adrenal enlargement and a retrospective diagnosis of adrenal haemorrhage was made. Repeat synacthen 3 months later, demonstrated persistent hypocortisolism. Interestingly, the cause for simultaneous occurrence of bilateral adrenal haemorrhage and IVC occlusion remains unclear and haematological investigations are awaited. She remains well on replacement with hydrocortisone and fludrocortisone.



	30 minute cortisol (nmol/l)	60 minute cortisol (nmol/l)
First Synacthen	87	102
Second Synacthen	50	46

Renin	37mU/l
Aldosterone	<69pmol/l

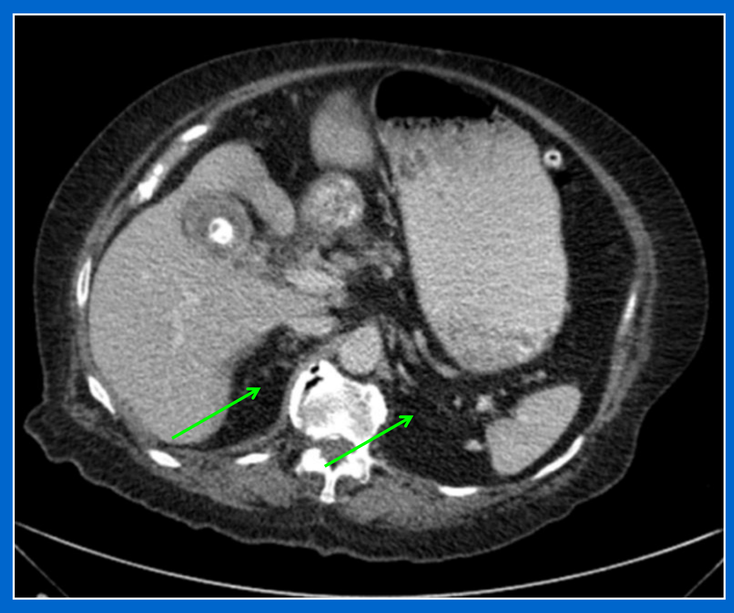


Figure 1: Initial CT Abdomen and Pelvis with Contrast.
Appearance suggestive of acute calculus cholecystitis. Apparent small filling defect in the intrahepatic IVC is suggestive of a non-occlusive thrombus. Bilateral adrenal masses reported as likely incidental adenomas (yellow arrows).

Figure 2: Repeat CT Abdomen and Pelvis with Contrast.

The bilateral adrenal masses are no longer present (green arrows). Complete resolution of adrenal swellings seen. Previous adrenal swelling was due to bilateral haemorrhage.

Conclusions:

Our patient highlights several important messages.

- Hypocortisolism should be considered in patients with severe sepsis with persistent hypotension despite aggressive management.
- Adrenal insufficiency caused by adrenal haemorrhage may be present in 15% of patients who die of septic shock. In >90% of patients the condition is irreversible, confirmed in our case with delayed reassessment of adrenal reserve.
- This case also emphasises that incidental adrenal masses should be promptly investigated when identified in the setting of an unwell patient.

References:

(1) Diagnosis and Treatment of Primary Adrenal Insufficiency, An Endocrine Society Practice Guideline. **J Clin Endocrinol Metab 2016, Feb 101(2): 364-389**

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Adrenal and steroids

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