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University Hospitals Coventry and Warwickshire NHS Trust

Autoimmune hepatitis and small bowel neuroendocrine tumour, unlikely mimics

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Case history

- 51 year old woman presented to the Emergency Department with jaundice and epigastric pain radiating to the back.
- Her bloods showed deranged liver function tests. The patient also had a palpable right upper quadrant mass.
- CT abdomen and pelvis demonstrated an irregular liver contour in keeping with chronic liver disease and a dilated fluid-filled appendix concerning for a low-grade mucinous neoplasm.
- The patient had an ultrasound-guided liver biopsy that showed autoimmune hepatitis. Raised IgG levels supported this diagnosis.
- Considering the dilated appendix, the patient had a colonoscopy with biopsies also taken at the terminal ileum to look for co-existing inflammatory bowel disease. The biopsies showed no active ileitis.

To assess the small bowel further, a contrast-enhanced MRI small bowel was arranged.

Two short segments of enhancement were seen within the distal ileum and the appendix base (Figure 1). However, these did not look typical for Crohn's disease.

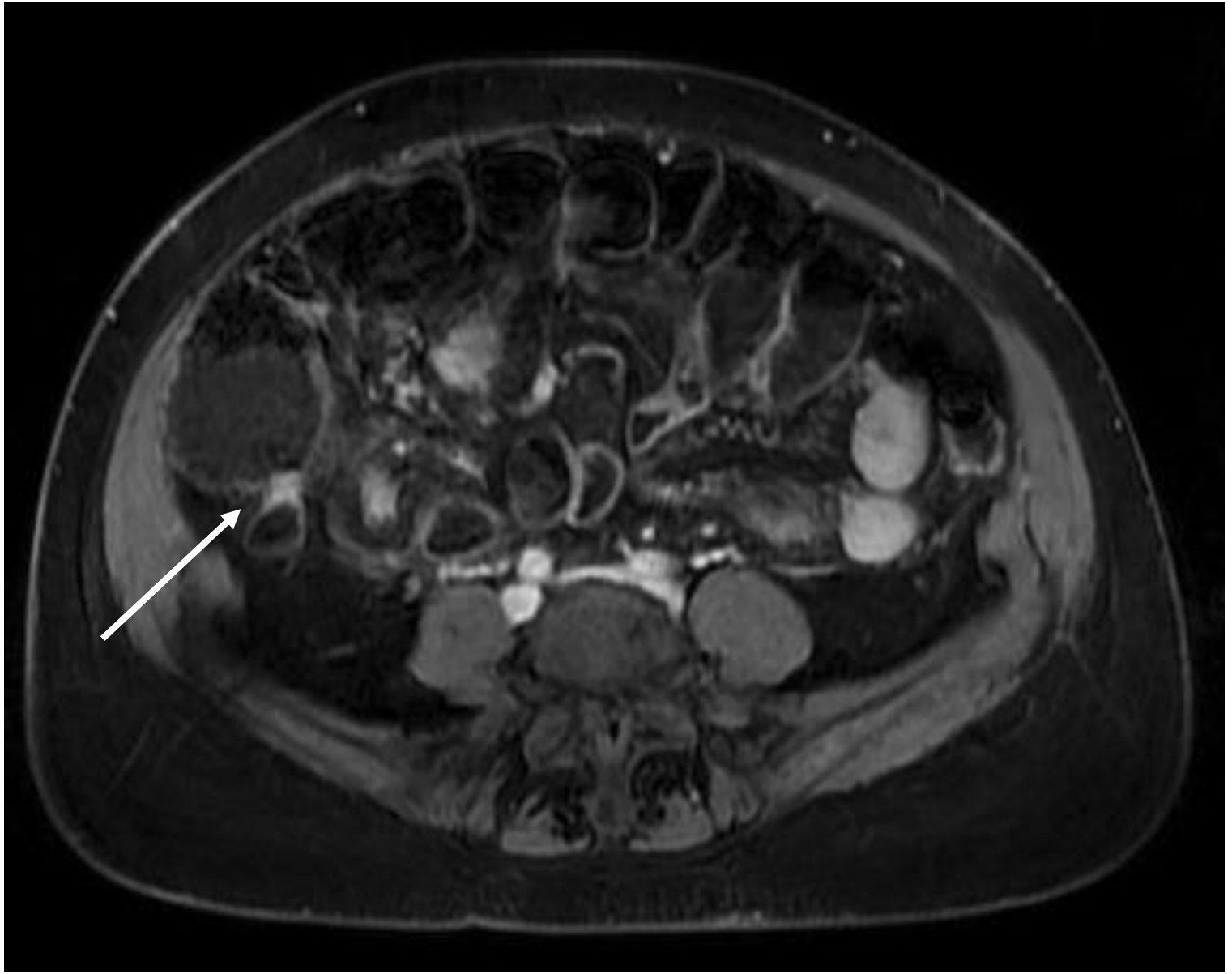


Figure 1: Contrast-enhanced MRI small bowel showing enhancement within the base of the appendix (arrow) and small bowel (not shown).

The patient underwent another colonoscopy with deeper biopsies of the terminal ileum that showed features of a well-differentiated neuroendocrine tumour.

Ga^{68}-DOTATATE PET CT scan showed distal ileum and base of appendix uptake in keeping with a somatostatin expressing neuroendocrine tumour (Figure 2).

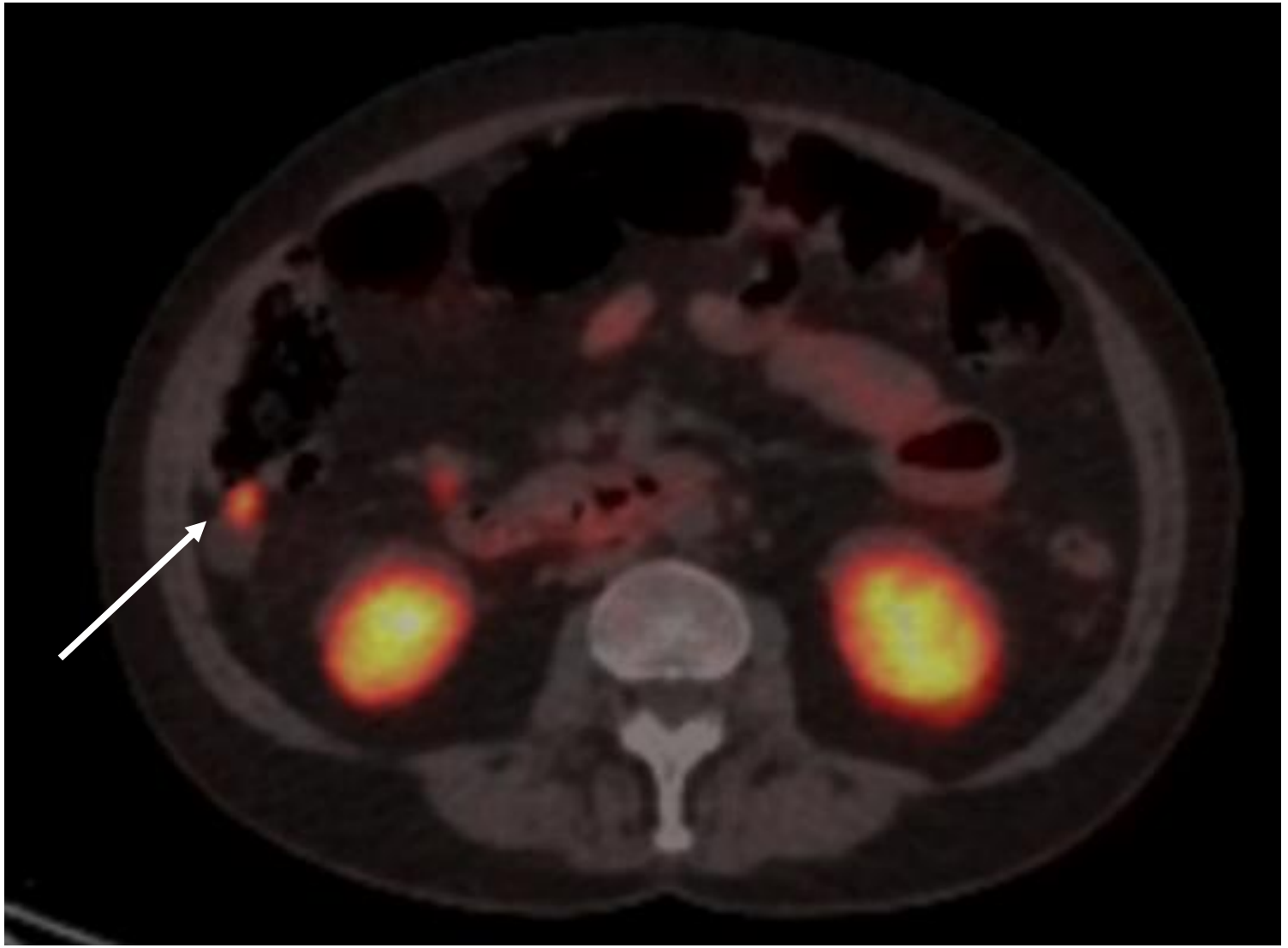


Figure 2: Ga^{68}-DOTATATE PET CT showing uptake at the base of the appendix (arrow) and small bowel (not shown) in keeping with a somatostatin expressing neuroendocrine tumour.

The right lobe of the liver also showed uptake concerning for liver involvement from the neuroendocrine tumour (Figure 3).

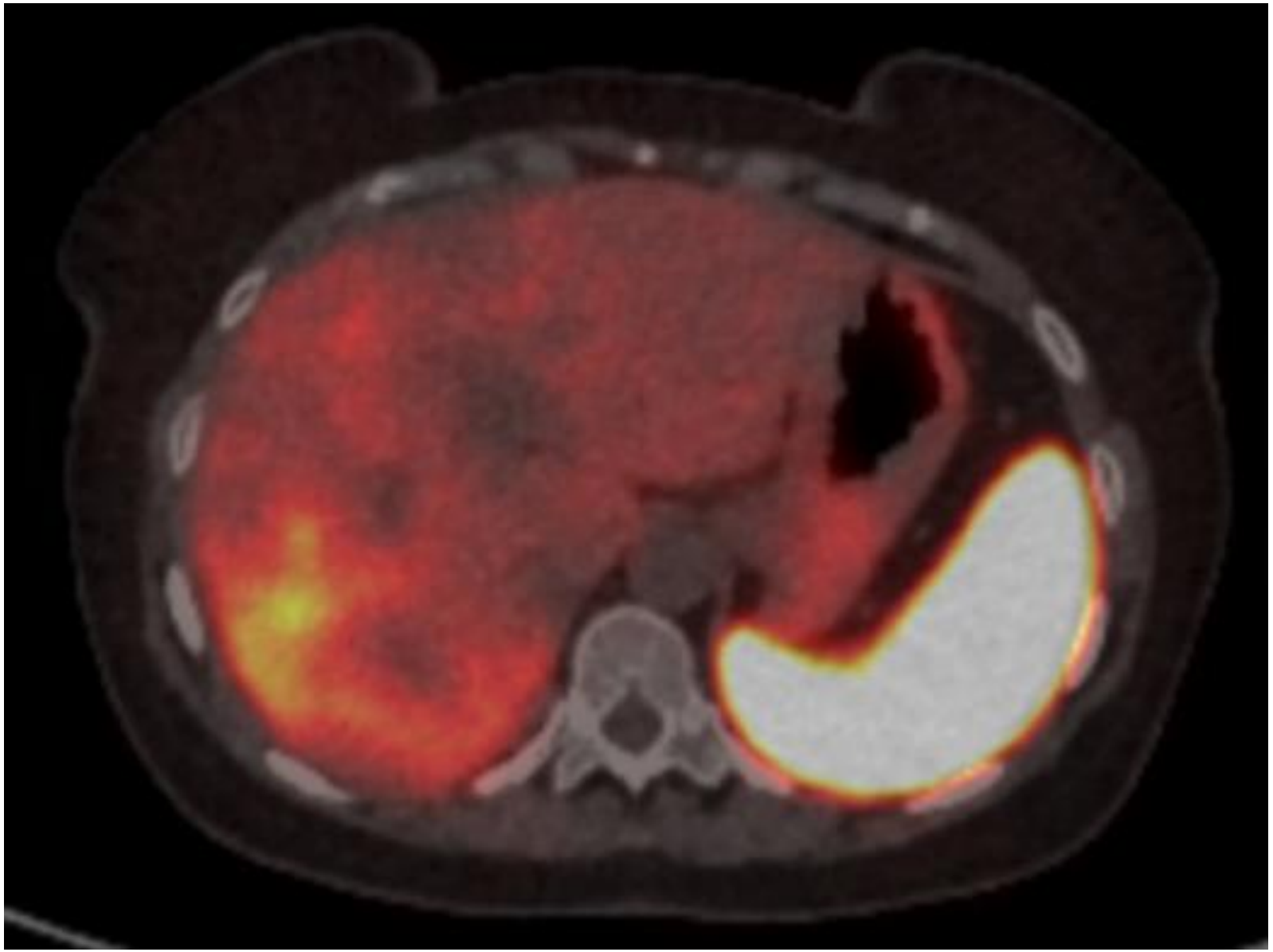


Figure 3: Ga^{68}-DOTATATE PET CT showing uptake within the right lobe of the liver.

MRI liver showed no focal metastatic deposit within the liver (Figure 4), and appearances were due to autoimmune hepatitis.

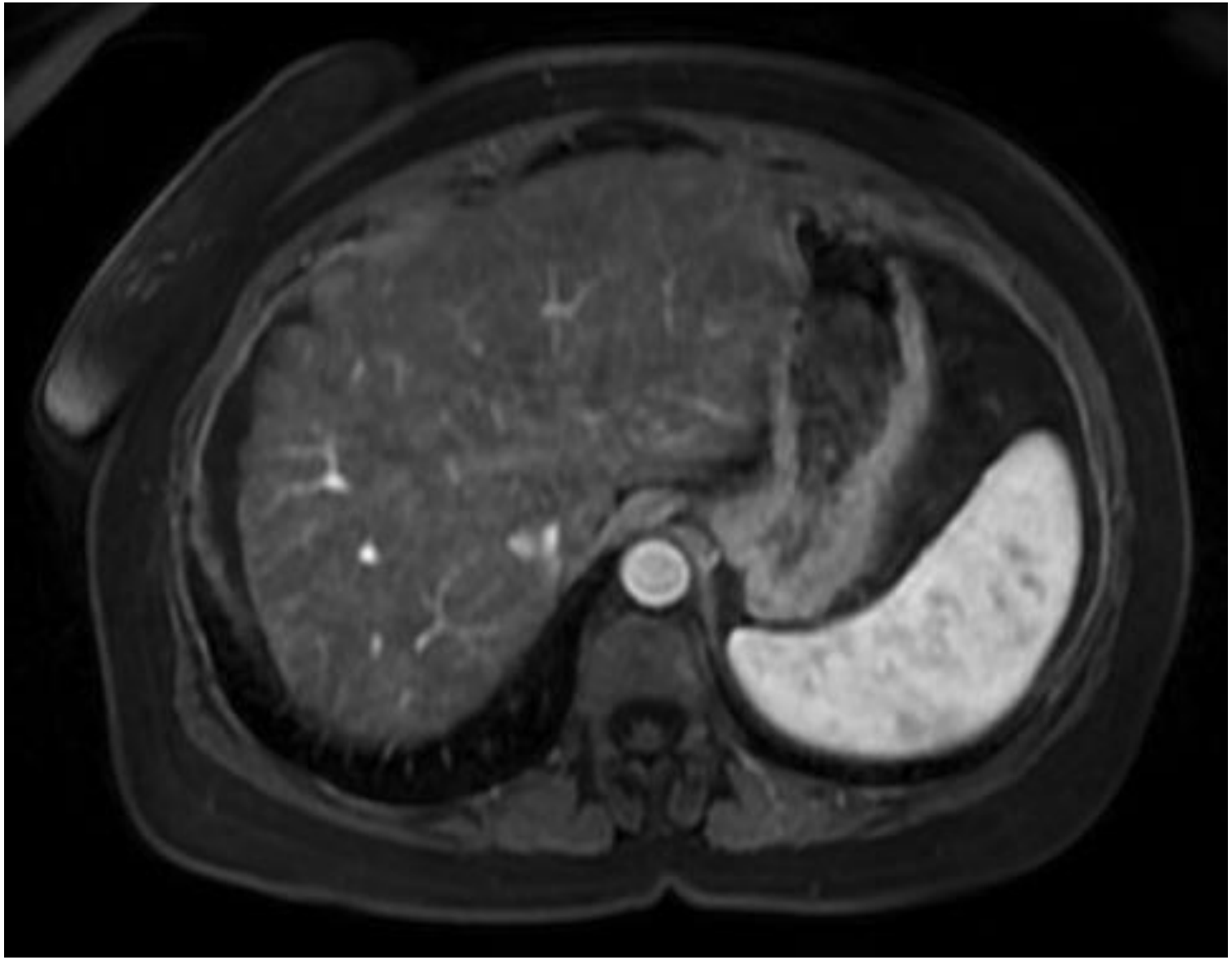


Figure 4: Contrast-enhanced MRI liver showing no focal liver lesion within the right lobe of the liver.

Learning points

- Autoimmune hepatitis can show uptake within the liver on Ga^{68}-DOTATATE PET CT scan.

- Neuroendocrine tumour can mimic inflammatory lesions within the small bowel.

Figure 1: Contrast-enhanced MRI small bowel showing enhancement within the base of the appendix (arrow) and small bowel (not shown).

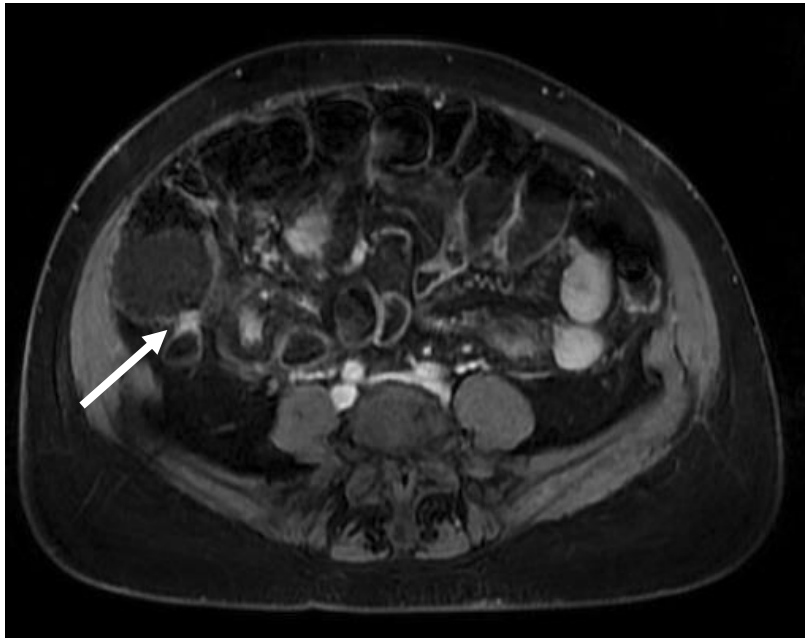


Figure 2: Ga^{68}-DOTATATE PET CT showing uptake at the base of the appendix (arrow) and small bowel (not shown) in keeping with a somatostatin expressing neuroendocrine tumour.

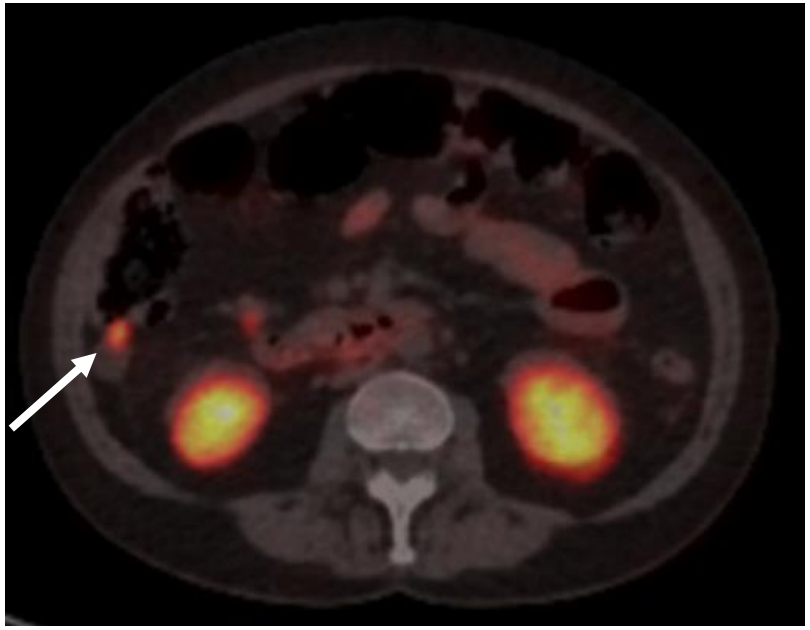
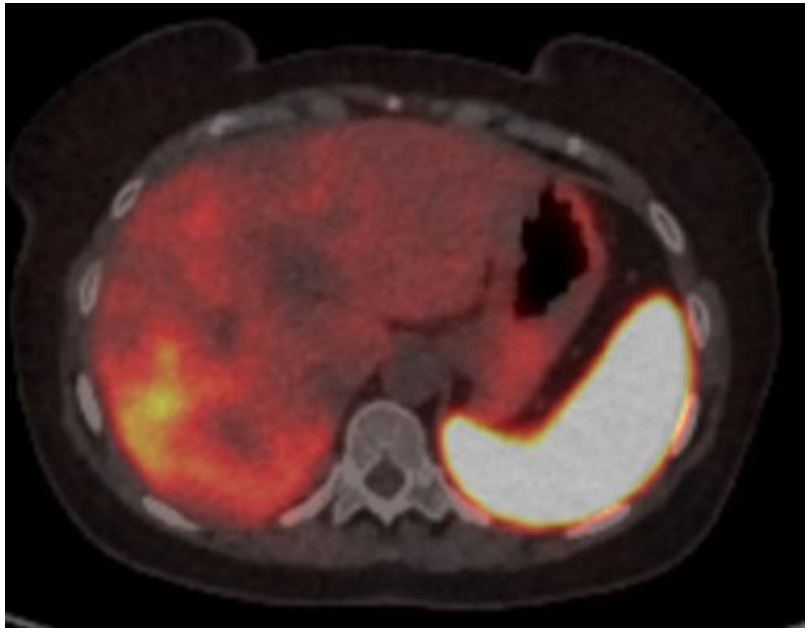


Figure 3: Ga^{68}-DOTATATE PET CT showing uptake within the right lobe of the liver.



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