

Ultrasonogram quiz: a man with right-sided abdominal pain

超聲波圖猜謎：一名右腹痛的男子

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Case

A 71-year-old gentleman attended the emergency department due to right-sided abdominal tenderness for two days. The physical examination found fever and right lower abdominal pain. The chest and abdominal radiographs were unremarkable.

Sonographic examination of the right lower abdomen (Figures 1 & 2) was done.

Questions

1. What is the abnormality and diagnosis?
2. What is the treatment?
3. Any further investigations if sonographic findings are inconclusive?

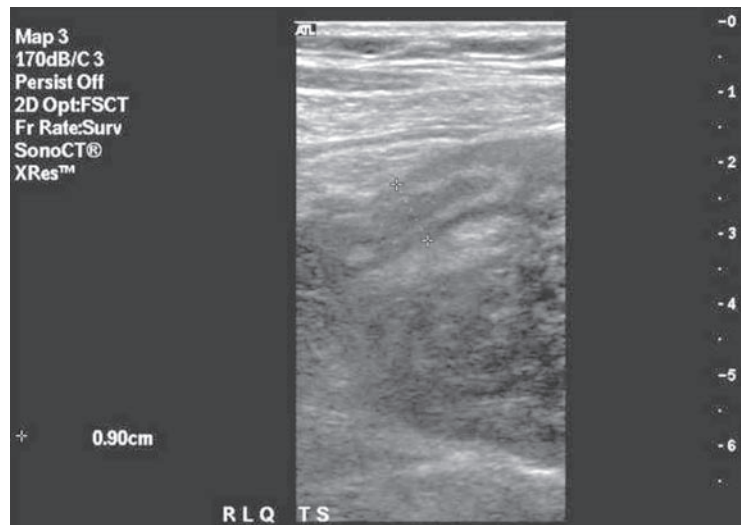


Figure 1. Transverse scan of the right lower abdomen (with compression).

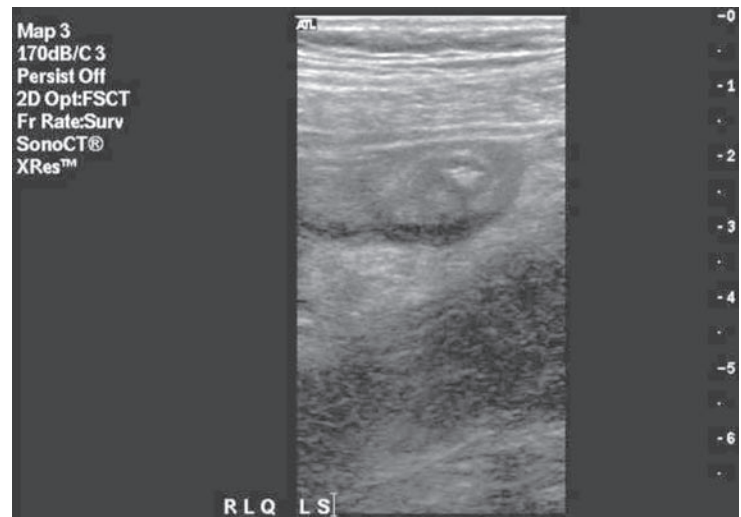


Figure 2. Longitudinal scan of the right lower abdomen (with compression).

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Answers

1. A noncompressible blind-ended tubular structure, measuring 0.9 cm in diameter, was noted at the tender point over the right lower abdomen.
2. Urgent appendectomy.
3. For patients with right lower abdominal pain, a tender non-compressible appendix is nearly diagnostic of acute appendicitis. In case of uncertainty, contrast CT scan would be helpful.

Discussion

In patients with acute pain in the right lower abdomen, the sonographic diagnosis of appendicitis can be established with confidence if a dilated noncompressible aperistaltic blind-ended tubular structure arising from the caecum is visualised. The anteroposterior (AP) diameter of the inflamed appendix should measure 7 mm or greater,¹ measuring from the outer wall to outer wall of the appendix. A high resolution (5-7.5 MHz) linear array transducer is used to compress the patient's right lower quadrant. Graded compression is used in the area that the patient identifies as the point of maximal tenderness to measure the AP diameter

of the appendix.^{2,3} The reported sensitivity and specificity of compression sonography were 83% and 93% respectively.⁴ Sonography is especially useful in ovulating women in whom there is a higher chance of false negative appendectomy rate.

If an appendicolith (6%)⁵ is identified within an appendix of any size in a patient with compatible clinical history, the examination is also considered to be positive for appendicitis. The visualisation of appendicolith is also associated with a higher chance of perforation.

References

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