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Radiology Quiz: The real Macaroni sign?

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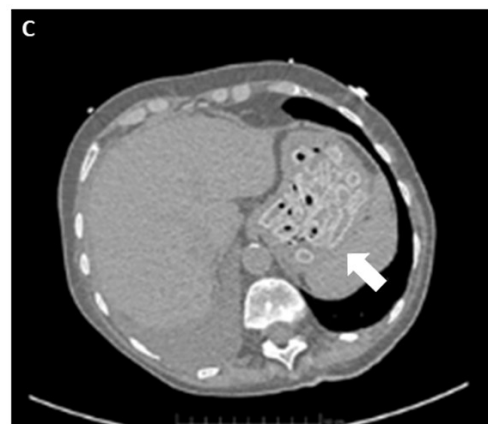
QUESTION 1

A 77-year-old woman was admitted to Cardiology Unit because of worsening dyspnea. Vital parameters and EKG were normal. No signs of congestion at physical examination. Arterial blood gas analysis, troponin and NTproBNP levels were normal. Echocardiography showed a preserved ejection fraction. In the suspicion of lung disease a CT scan was performed, showing a body shaped like narrow tubes in the digestive tract starting from the esophagus (Panel A and B, white arrow) until the stomach where several undefined tubular structures were visible (Panel C, white arrow).



What is the most probably diagnosis

1. Parasites
2. Drug fillers
3. Macaroni Sign
4. Gastric cancer





The Macaroni Sign

A primary hypothesis of parasites infection was made but not supported by medical history and lab tests. Drug fillers remnants were supposed but excluded since no medications were taken in the previous 12-hours. Foreign bodies, body packers, bezoars or an atypical manifestation of gastric cancer were thought. Thus, an urgent esophagogastroduodenoscopy was proposed. Scared of this procedure, patient said: *"might they be the macaroni pasta eaten just before the exam?"*. This was the diagnosis: **a macaroni sign!**

Macaroni sign is known to be a marker of active arterial vessel inflammation^{1,2} characterized by smooth, homogeneous and moderately echogenic circumferential thickening of the arterial wall (typically of Takayasu arteritis)^{3,4,5}. Our radiological image describes an artifact generated by the macaroni pasta mimicking the scientific Macaroni sign for two reasons: the circumferential mural thickening and the etiology (the macaroni pasta ate by the patient). Despite no correlation between these two macaroni signs existing, we may conclude that one is the scientific macaroni sign, the other is the *"real Macaroni sign!"*.

Because the CT scan was not detecting any abnormality explaining the dyspnea, taking into account the personal history of panic disorder, the final diagnosis of psychogenic cause was then made.

Fasting before CT scan is a common rule recommended to all patients once the exam is scheduled⁶. This recommendation was not followed by the patient without any advisement. Hence, a finding like this should suggest physicians to verify first if fasting was respected, maybe by a pre-imaging checklist, to avoid time consuming and money wasting.

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