

Ingested sharp nail within the appendix: a rare and asymptomatic case.

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Section: Abdominal imaging

Area of Interest: Abdomen

Procedure: Localisation

Imaging Technique: CT

Special Focus: Foreign bodies Case Type: Clinical Cases

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Patient: 27 years, male

Clinical History:

Healthy patient with no pathological background, referred from a physician by an incidental finding of abdominal x-ray. Patient remained asymptomatic throughout his hospital stay and emphasized that in a medical control performed a year ago, his examinations were normal, physical examination was not striking and blood tests were within normal parameters.

Imaging Findings:

A simple abdomen x ray were made in which a radiopaque, long, sharp, single image located in the right inferior quadrant of approximately 3 cm (1.18 in) length, so the complementation with a tomographic study was necessary. We could observed the presence of a foreign body with densities between 1100 and 2000 hounsfield units (H.U), characteristics of a metallic material with the shape of a nail, located in the lumen of the caecal appendix and without radiological signs of inflammation.

Discussion:

Ingest of foreign bodies (FB) is a frequent problem around the world [1, 2], only in United States exists over 100, 000 cases/year [3, 4]. Most affected population are children with 80% of all cases [4]. Fortunately 80% of FB passes without problems through gastrointestinal tract [3, 5, 7]. FB located at caecal appendix is an extraordinary event and appendicitis by FB has a prevalence of 0.0005% [2, 6, 8], demonstrated by Klinger et al. in a review of 100 years [9]. Few more cases have been added [10, 11, 12] and the number does not exceed the 300. There are 3 cases of nails [9, 13, 14], we add the fourth, wich is rare additionally because were asymptomatic [3, 4, 10 - 16].

Variable FB have been documented [6, 9, 16] even the bizarre case of an appendicitis due to a condom fragment [15]. Risk factors includes; the low position of the cecum and its low motility, FB weightier than the fecal matter, as well as the size of the appendicular orifice [3, 5, 6, 15]. Once a FB has entered the appendicular lumen the peristalsis is insufficient to expel it. The time for apendicitis debut since ingestion is variable, round objects have larger periods (years), while sharp FB cause problems in shorter times [4, 5, 6, 10]. Our patient has an atypical behavior by not presenting appendicitis at the time of diagnosis.

Diagnosis of FB is relatively easy, the method of choice is computed tomography (CT), the only limitation is the

interpretation of radiologist. CT has a greater diagnostic precision than the abdominal x-ray and the use of contrast CT is recommended in cases in which complications such as perforation, etc. are suspected [2, 3].

Management is controversial, however, due to the high risk of complications, laparoscopic or open appendectomy should be performed [2, 5]. Our surgical team performed an open appendectomy for safety [9]. The patient was discharged 2 days after with no complications and the histopathological reported no inflammatory changes.

FB in the caecal appendix is a rare entity, in most cases the diagnosis is made when the patient has already presented appendicitis; however, it not always follow the usual course. A FB located in the right lower quadrant should make us suspect an appendiceal location, which must be confirmed by an abdominal CT and timely inform the surgeon to avoid the complications.

Written informed patient consent for publication has been obtained.

Differential Diagnosis List: Foreign body in the cecal appendix, without appendicitis., Appendicitis secondary to foreign body., Appendiceal perforation by foreign body., Appendiceal tumor., Caecal diverticulitis.

Final Diagnosis: Foreign body in the cecal appendix, without appendicitis.

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Figure 1

a



Description: Radiopaque foreign body observed in the lower right quadrant of the abdomen, before(a) and during the attempted extraction by colonoscopy.(b) **Origin:** Department of Radiology, San Francisco de Quito Hospital, Quito - Ecuador.

b



Description: Radiopaque foreign body observed in the lower right quadrant of the abdomen, before(a) and during the attempted extraction by colonoscopy.(b) **Origin:** Department of Radiology, San Francisco de Quito Hospital, Quito - Ecuador.

Figure 2

a



Description: Linear hyperdense image localized in the appendiceal lumen, Contrast ct scan. a Axial plane, b Coronal plane. **Origin:** Department of Radiology, San Francisco de Quito Hospital, Quito - Ecuador.

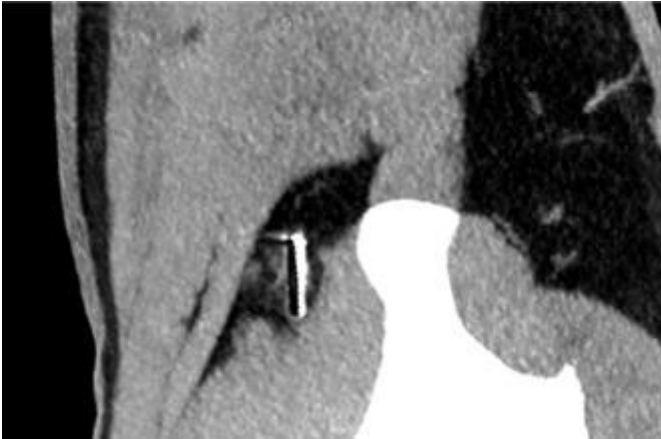
b



Description: Linear hyperdense image localized in the appendiceal lumen, Contrast ct scan. a Axial plane, b Coronal plane. **Origin:** Department of Radiology, San Francisco de Quito Hospital, Quito - Ecuador.

Figure 3

a



Description: Hyperdense image in the shape of a nail located in the appendicular lumen sagittal plane(a). VR-3D reconstructions were performed, intra-abdominal localization was confirmed.(b)**Origin:** Department of Radiology, San Francisco de Quito Hospital, Quito - Ecuador.

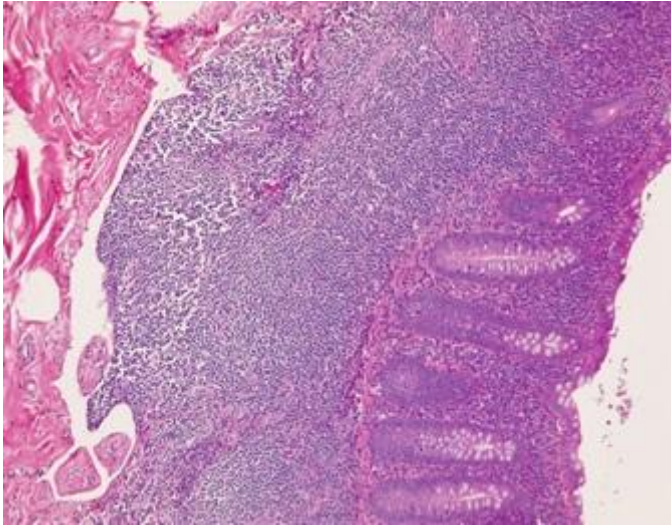
b



Description: Hyperdense image in the shape of a nail located in the appendicular lumen sagittal plane(a). VR-3D reconstructions were performed, intra-abdominal localization was confirmed.(b)**Origin:** Department of Radiology, San Francisco de Quito Hospital, Quito - Ecuador.

Figure 4

a



Description: Histopathological confirmation, cells of the appendicular mucosa are observed without inflammatory changes.(a) Postoperative appendix specimen is seen next to the foreign body.(b)**Origin:** Department of Histopathology, San Francisco de Quito Hospital, Quito - Ecuador.

b



Description: Histopathological confirmation, cells of the appendicular mucosa are observed without inflammatory changes.(a) Postoperative appendix specimen is seen next to the foreign body.(b)**Origin:** Department of Histopathology, San Francisco de Quito Hospital, Quito - Ecuador.