

CASE REPORT

An unusual cause of appendectomy in a child (a sharp pin trapped in the appendix): a case report

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Abstract

Foreign bodies' (FBs) ingestion is a common problem among children and the psychologically deranged. Ingested FBs usually pass through the alimentary tract without any incident. They can rarely be placed in the appendix and may cause problems. Here we report a case of an appendectomy with no signs of inflammation indicated for a sharp metallic foreign body trapped in the appendix of a 13-year-old Syrian girl. The diagnosis was made through serially abdominal X-rays and abdominal ultrasound.

INTRODUCTION

Foreign bodies' (FBs) ingestion is a very common worldwide health problem in children between 6 months and 3 years of age [1]. FBs generally do not cause complications and pass through the gastrointestinal tract spontaneously [2]. Less than 0.0005% of them get trapped in the appendix and require surgical management [3].

In the asymptomatic patient, a series of abdominal X-ray is recommended following up on the progress of the foreign body. When a foreign body becomes immobile at a distal bowel, a high suspicion of a foreign body trapped in the appendix must be considered, and a prophylactic appendectomy is recommended with or without a sign of inflammation [4].

CASE REPORT

A 13-year-old Syrian female was presented to the emergency department for evaluation after accidentally swallowing a foreign body (a pin). In her medical history, the girl was diagnosed with familial Mediterranean fever (FMF) 8 years before by MEFV

mutation. The patient's symptoms were controlled by colchicine (0.07 mg/kg/day) with the last attack a year ago. Upon physical examination, the patient was alert, without distress, and all her vital signs were within the normal average. The abdominal exam revealed a soft, non-distended, non-tender abdomen. The abdominal radiography showed a radiopaque foreign body in the right lower quadrant (Fig. 1). As the physical exam was normal and the foreign body was not causing obstruction, it was predicted that it will pass through spontaneously without any complications and the patient was discharged with instructions for getting abdominal X-rays as an outer patient for follow-up. A week later the patient had episodes of colicky abdominal pain around the umbilicus without any other symptoms. There were not any remarkable signs in the abdominal examination except for a mild tenderness in the right lower quadrant. There was no palpable mass, and the bowel sounds were normal.

Laboratory investigations were within the normal range. The white blood cell count was 8500 cell/mm³, differential count polymorphs 45%, lymphocytes 50% and platelets (PLT) 450 000/mm³; C-reactive protein (CRP) was negative, and the

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Figure 1: Abdominal X-ray showed a foreign body in the right lower quadrant.



Figure 2: Highly echogenic, linear metallic foreign body.

erythrocyte sedimentation rate (ESR) and fibrinogen were normal. Abdominal X-ray showed a foreign body in the right lower quadrant, which was in the same location that the prior abdominal radiography showed. An abdominal ultrasound scan was requested which revealed highly echogenic, the linear metallic foreign body within a slightly swollen appendix (Fig. 2).

Because the pin was trapped in the appendix with difficulty to pass through and to avoid further complications such as inflammation or perforation, the patient was taken up for surgery. During surgery a sharp pin was found to be trapped

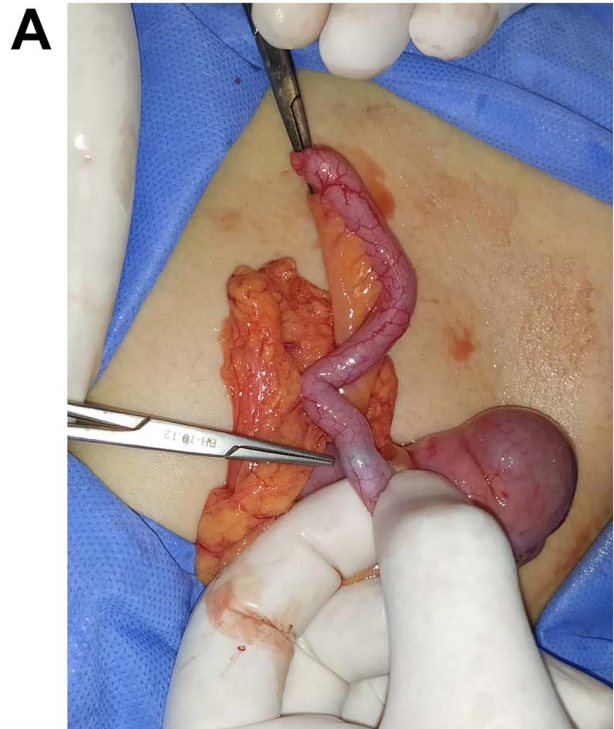


Figure 3: (a) An appendix with trapped pin. (b) The trapped pin.

in the appendix with no signs of inflammation or perforation. The procedure completed as prophylactic appendectomy (Fig. 3a and b).

The patient was discharged the next day after surgery, with no postoperative complications.

DISCUSSION

Most of the FBs pass through the gastrointestinal tract spontaneously within a week and do not cause any complications [5]. In rare cases, the foreign body tends to be trapped in the appendix which is attributable to an inferior anatomical location, angulation or narrowing and remains stagnant as a result of the inability to return it to a normal pathway [3].

Rare cases in which a foreign body in the appendix has not generated inflammation have been described in the literature.

The first reported appendectomy was in 1735 by Amyand, a London surgeon who removed an appendix perforated by a pin from an 11-year-old [6]. More than 250 cases of appendiceal foreign bodies have been described [7].

Clinical signs of FBs depend on their size, shape and location [1]. Some cases may be asymptomatic, while others if the object is thin, sharp or metallic up to 93% of the patients may experience symptoms like abdominal pain and low-grade fever, with or without vomiting [8].

In the asymptomatic patient, a serial of abdominal X-ray is recommended following up on the progress of the foreign body. When the foreign body remains in the right lower quadrant in serial abdominal X-ray, an appendicular foreign body should be highly suspected [5].

Although FBs in the appendix are rare, different kinds of foreign bodies have been reported to be trapped in the appendix, and most of them are found to be radiopaque.

An appendicular foreign body can be classified into high-risk and low-risk depending on the ingested object. High-risk FBs are found in 75% of the cases and include sharp, long or pointed, while low-risk are found in 12% of the cases and include blunt, round objects [1, 9]. The appendicular foreign body carries a risk of developing appendicitis, peritonitis, perforation, hemorrhage or an abscess formation [1]. Due to this, an appendectomy is performed with or without any sign of inflammation [10].

In our case, the patient had a history and diagnosis of FMF. She came with episodes of colicky abdominal pain without any clinical or laboratory signs of FMF attack. Abdominal X-ray and ultrasound appeared linear metallic foreign body trapped in the appendix. The determination of surgical intervention was based on ultrasound, which revealed the foreign body in the lumen of the appendix regardless of physical examination to avoid complications in the upcoming future, and a prophylactic appendectomy was done.

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CONFLICT OF INTEREST STATEMENT

None declared.

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This case report did not require review by the ethics committee of Tishreen University Hospital, Lattakia, Syria.

WRITTEN INFORMED

Consent was obtained from the patient's parents for the publication of this case report and any accompanying images. A copy of the written consent is available for review by the editor.

GUARANTOR

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REFERENCES

1. Lee M, Kim SC. Appendiceal foreign body in an infant. *Medicine* 2017;**96**:e6717. doi: [10.1097/MD.00000000000006717](https://doi.org/10.1097/MD.00000000000006717).
2. Lee JH. Foreign body ingestion in children. *Clin Endosc* 2018;**51**:129–36. doi: [10.5946/ce.2018.039](https://doi.org/10.5946/ce.2018.039).
3. Bekkerman M, Sachdev AH, Andrade J, Twersky Y, Iqbal S. Endoscopic management of foreign bodies in the gastrointestinal tract: a review of the literature. *Gastroenterol Res Pract* 2016;**2016**:8520767. doi: [10.1155/2016/8520767](https://doi.org/10.1155/2016/8520767).
4. Alabkary S, Al-Buainain H, Elshafei H. Ingested metallic foreign body lodged within the appendix. *J Pediatr Surg Case Rep* 2018;**32**:39–40. doi: [10.1016/j.epsc.2018.01.011](https://doi.org/10.1016/j.epsc.2018.01.011).
5. Betalli P, Rossi A, Bini M, Bacis G, Borrelli O, Cutrone C et al. Update on management of caustic and foreign body ingestion in children. *Diag Ther Endosc* 2009;**2009**:969868. doi: [10.1155/2009/969868](https://doi.org/10.1155/2009/969868).
6. Mellor TK, Mellor SG. Foreign bodies of dental origin in the appendix. *J R Army Med Corps* 1995;**141**:174–6. doi: [10.1136/jramc-141-03-10](https://doi.org/10.1136/jramc-141-03-10).
7. McCause DE, Kurchin A, Hinshaw JR. Gastrointestinal foreign bodies. *Am J Surg* 1981;**142**:335–7. doi: [10.1016/0002-9610\(81\)90342-1](https://doi.org/10.1016/0002-9610(81)90342-1).
8. Klingler P, Seelig M, DeVault K, Wetscher G, Floch N, Branton S et al. Ingested foreign bodies within the appendix: a 100-year review of the literature. *Dig Dis* 1998;**16**:308–14. doi: [10.1159/000016880](https://doi.org/10.1159/000016880).
9. Green SM, Schmidt SP, Rothrock SG. Delayed appendicitis from an ingested foreign body. *Am J Emerg Med* 1994;**12**:53–6. doi: [10.1016/0735-6757\(94\)90199-6](https://doi.org/10.1016/0735-6757(94)90199-6).
10. Sar S, Mahawar KK, Marsh R, Small PK. Recurrent appendicitis following successful conservative management of an appendicular mass in association with a foreign body: a case report. *Cases J* 2009;**2**:7776. doi: [10.4076/1757-1626-2-7776](https://doi.org/10.4076/1757-1626-2-7776).