

CASE REPORT

Accidental ingestion of tooth pick leading to bowel perforation-A case report

Ulas Khan, Sameeah Hanif

Abstract:

Bowel perforation is a surgical emergency. There are many causes of bowel perforation commonest being infection, infarction, radiation enteritis, crohn's disease and carcinomas. Bowel perforation secondary to tooth pick are not so common. Tooth picks are used after food intake for cleaning purpose. They are made from bamboo and wood and have hard material with sharp end. Tooth pick are usually ingested un-intentionally. Patient without adequate history of ingestion pose difficulty in diagnosis. Patients with less developed palatal sensations are prone to accidental ingestion.

We present a case of ileal perforation secondary to tooth pick ingestion presenting with signs and symptoms of acute appendicitis.

Keywords: Tooth pick, computed tomography, ultrasound, foreign body, small bowel perforation, crohn's disease, adeno-carcinomas

Received

date: 19th January 2020

Accepted

date: 13th June 2020

Introduction:

Accidental ingestion of tooth pick leading to bowel perforation has been reported in literature.¹

Usually the ingested tooth pick passes through intestine without causing damage but in few cases it causes intestinal perforation leading to serious complications and even damage to structure like kidney, liver, pancreas and heart.² Foreign body ingestion are common in surgical practice.³ Tooth pick due to its sharp end more likely to cause perforation as compared to blunt foreign objects and can also cause mediastinal as well as intra-abdominal complications.⁴ Patients using dentures have a less developed palatal sensations and therefore lack significant history of toothpick ingestion. In these patients diagnosis requires investigation like plain abdominal x rays to bowel series,⁵ ultrasound,⁶ CT scan abdomen³ and endoscopy.⁷ The incidence of internal injury with tooth pick ingestion can be as high as 30 percent much higher than other sharp objects

due to double pointed end of tooth pick.^{8,9} This case highlights the importance of tooth pick ingestion mimicking acute appendicitis.

Case presentation:

A 16 years old female presented to emergency department on 12th October 2019 with complain of pain in the right lower quadrant for the last one day. It was accompanied by nauseated feeling. She was afebrile. Past medical and surgical history was not significant. On examination she had tenderness as well as rebound tenderness in right iliac fossa. Laboratory investigation showed increase in total leukocyte count. X ray erect abdomen did not show signs of perforation. Last menstrual period was 10 days back. She was taken to operating room for appendectomy. On operating table a normal looking appendix was found. Small bowel was examined for pathology. Small bowel showed small perforation in terminal ileum with tooth pick stucked in the bowel wall (Fig 1). Tooth pick was safely

**DHQ Hospital,
Abbottabad**
U Khan
S Hanif

Correspondence:

Dr. Sameeah Hanif
Department of Surgery
DHQ Hospital,
Abbottabad
Cell No:+92-321-9960321
email: dr.sameeahhanif@gmail.com



Figure 1: A small perforation in ileum with tooth pick stuck in bowel wall



Figure 2: Tooth pick removed from small bowel wall along with appendix

extracted from bowel wall. (Fig 2). Perforation repaired primarily. Appendectomy done. Abdomen was washed and drain placed. She was kept nil per oral for 3 days and was discharged on 5th post-operative day. She recovered without any complication.

Discussion:

Foreign body ingestion can rarely cause gastrointestinal perforation.⁸ However tooth pick due to its pointed nature can cause perforation and internal organ injury.^{8,9} Patient often ingest tooth pick unintentionally and are usually obliv-

ious of it or don't disclose such information on admission. Risk factor for such accidental ingestion includes ineffective palatine sensations (as a result of denture or denture plates), alcoholism, dementia, or habit of chewing tooth picks.^{11,12}

Different sites can be damaged due to accidental ingestion. Also patients with no obvious history of ingestion can also lead to ineffective diagnosis. In case of localized peritonism diagnosis can mimic conditions like acute appendicitis like in our case. Commonest site of injury is gastrointestinal tract,¹⁰ however other structures or sites can be damaged like mediastinal viscera,^{12,13} liver,⁴ ureter,¹⁴ bladder,¹⁵ inferior vena cava¹⁶ and abdominal aorta.¹⁷ Wooden tooth pick being radiolucent are difficult to detect pre-operatively and about 5.5 to 15% of wooden foreign bodies can be detectable on radiograph.¹⁸ In conclusive history as in this case and absence of signs of generalized peritonitis often pose difficulty in diagnosis pre operatively. CT scan of abdomen with gastro graphic is helpful in diagnosing foreign body i.e. tooth pick, lodged in the Gastro intestinal tract.

Conclusion:

Accidental ingestion of foreign bodies is very common but perforation is relatively rare. Tooth pick because of its sharp end carries greater risk of perforation. Small perforations in the terminal ileum can present with signs and symptoms mimicking acute appendicitis due to localized peritonism.

Conflict of interest: None

Funding source: None

Role and contribution of authors:

Dr Ulas Khan, collected the data, references and did the initial writeup.

Dr Sameeah Hanif, critically review the article and made the final changes.

References:

1. Schoffstall JM, Mcnamara RM. More on ingestion of a toothpick. *N Engl J Med* 1989;321:476-7.
2. Gelsomino S, Romagnoli S, Stefano P. Right coronary perfora-

- tion due to a toothpick ingested at a barbecue. *N Engl J Med* 2005;352:2249–50.
3. Reginelli A, Liguori P, Perrotta V, et al. Computed tomographic detection of toothpick perforation of the jejunum: case report and literature review. *Radiol Case Rep* 2007;2013:52.
 4. Abel RM, Fischer JE, Hendren WH. Penetration of the alimentary tract by a foreign body with migration to the liver. *Arch Surg* 1971;2013:227–8.
 5. Strauss JE, Balthazar EJ, Naidich DP. Jejunal perforation of the intestine diagnosed by small bowel series. *Am J Gastroenterol* 1996;2013:789–91 .
 6. Rioux M, Langis P. Sonographic detection of clinically unsuspected swallowed toothpicks and their gastrointestinal complications. *J Clin Ultrasound* 1994;2013:483–90.
 7. Khan M, Deutsch S. Ingested toothpick. *Hospl Physician* 2007;2013:7.
 8. McPherson R, Karlan M, Williams R. Foreign body perforation of the intestinal tract. *Am J Surg* 1957;2013:564–6.
 9. Tenner S, Wong RCK, Carr-Locke D, et al. Toothpick ingestion as a cause of acute and chronic duodenal inflammation. *Am J Gastroenterol* 1996;2013:1860–2.
 10. Budnick LD. Toothpick-related injuries in the United States, 1979 through 1982. *JAMA* 1984;2013:796–7.
 11. Cockerill FR, Wilson WR, Van Scoy RE. Traveling toothpicks. *Mayo Clin Proc* 1983;2013:613–6.
 12. Jenson AB, Fred HL. Toothpick pleurisy. *JAMA* 1968;2013:988.
 13. Gelsomino S, Romagnoli S, Stefano P. Right coronary perforation due to a toothpick ingested at a barbecue. *N Engl J Med* 2005;2013:2249–50.
 14. Plavcan WG, McWilliams WA. Toothpick obstruction of the ureter. *J Urol* 1988;2013:114–15.
 15. Alagiri M, Rabinovitch HH. Toothpick migration into bladder presents as abdominal pain and hematuria. *Urology* 1998;2013:1130–1.
 16. Allen B, Krupski WC, Wylie EJ. Toothpick perforation of the inferior vena cava. *West J Med* 1983;2013:727–30.
 17. Fry D, Flint LM, Richardson JD. Aorticoduodenal fistula secondary to a toothpick. *J Ky Med Assoc* 1978;2013:441.
 18. Kobs JK, Hansen AR, Keefe B. A retained wooden foreign body in the foot detected by ultrasonography. *J Bone Joint Surg* 1992;2013:296–8.