

An Interesting Case of Duodenal Perforation with Penetrating Hepatic Injury by an Ingested 18 cm Long Neem Stick

Dr. Minakshi Gadahire¹, Dr. Prashant R Rao², Dr. Sarika Mayekar³, Dr. Mohan Joshi⁴, Dr. Prashant Kadam⁵.

¹Associate Professor, ^{2,3}Surgery Resident, ⁴Professor, ⁵Assistant Professor, Department of General Surgery, Lokmanya Tilak Municipal Medical College and Hospital, Mumbai, India

***Corresponding author**

Dr. Minakshi Gadahire

Email: gadhireminakshi@yahoo.in

Abstract: Foreign bodies ingested either accidentally or intentionally usually pass through gastrointestinal tract uneventfully. However few cases presents with complications such as perforation, obstruction or hemorrhage or fistula formation. Perforation is mainly caused by long pointed objects. Here, we report the case of a 45 years old female who presented to us with sudden onset severe pain all over abdomen. Chest radiograph showed gas under right diaphragm. Laparotomy revealed a 18 cm long Neem (*Azadirachta indica*) stick, which was found perforating through the first part of duodenum and penetrating into the inferior surface of left lobe of liver. We believe this to be the first reported case of bowel perforation with penetrating hepatic injury caused by an ingested neem stick/ datun.

Keywords: Duodenal perforation, Hepatic injury, foreign body, Neem stick, Datun.

INTRODUCTION

Foreign body ingestion is a common occurrence, especially in children, alcoholics, mentally handicapped and edentulous people wearing dentures. Once through the esophagus, most foreign bodies, including sharp objects, pass uneventfully [1]. However, ingestion of sharp and pointed objects, animal or fish bones, bread bag clips, magnets, and medication blister packs increase the risk of perforation [2, 3,4]. Here we report the case of bowel perforation with penetrating hepatic injury caused by a 18 cm long neem stick/ datun accidentally ingested 8 months back.

CASE REPORT

A 45 years old woman presented to emergency department of our hospital with complaints of generalized and diffuse pain all over the abdomen which was sudden in onset since 4 days. She does not give history of any psychiatric ailment. Physical examination revealed diffusely distended, tender and guarded abdomen with tachycardia. Plain radiograph of chest revealed free gas under right hemi diaphragm suggestive of perforative peritonitis. Laboratory tests found the patient to be anemic with hemoglobin level of 9.1gm%, WBC counts were 17300. Liver and renal function tests and serum electrolyte levels were within reference limits.

An emergency exploratory laparotomy was performed which revealed a 18 cm long neem stick found perforating out through the first part of duodenum and penetrating into the left lobe of liver

parenchyma through its inferior surface with around 1 liter of bile tinged purulent contamination being present [Fig.1 ,Fig. 2].

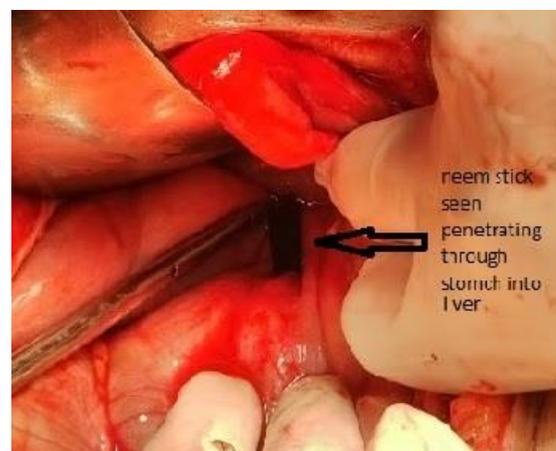


Fig-1: Intra-operative photo showing neem stick perforating from duodenum and penetrating the liver.

The stick was carefully removed first from the rent in the duodenum and then carefully from the liver. The stick was found to have penetrated the liver for a depth of around 2 cm. A thorough wash was given and a Naso-jejunal tube was passed across duodenal perforation. The perforation around 1.5 x 1 cm in size was primarily closed in single layer with interrupted sutures with Graham's patch placed over it. No intervention was required for the liver laceration. Post-operative recovery was good and uneventful. The

patient was discharged by post-operative day 7. Post-operatively on questioning she gave history of ingestion of a neem stick while brushing her teeth around 8 months back. She did not seek medical advice for the same prior to this as she never had any complaints related to it. Upper GI endoscopic evaluation performed post operatively after 6 weeks revealed complete healing.



Fig 2: Length of neem stick is 18 cm

DISCUSSION

Foreign bodies such as dentures, fish bones, chicken bones, toothpicks and cocktail sticks have been known to cause bowel perforation following their accidental or intentional ingestion [5]. Perforation commonly occurs at the point of acute angulation and narrowing [5]. The risk of perforation is related to the length and the sharpness of the object with longer and sharper foreign bodies having more tendencies to get impacted and perforate the bowel [6]. Other potential sites are the duodeno-jejunal flexure, appendix, colonic flexure, diverticulum and the anal sphincter [6]. The length of time between ingestion and presentation may vary from hours to months and years [7]. Plain radiograph of chest and abdomen is required as a preliminary diagnostic tool. If it shows free gas under diaphragm then patient should be taken up for emergency exploratory laparotomy. CT scans are more informative especially if radiographs are inconclusive. CT scans can detect site and dimensions of foreign body and its relation to other intra-abdominal organs and pneumo peritoneum. The foreign body should be removed either endoscopically or surgically if it is sharp, pointed, and long or remains in the same position for more than 4-5 days in order to prevent

complications. However if complications like obstruction, perforation or hemorrhage do occur, then patient would require urgent surgery.

Thus in our case prompt diagnosis followed by appropriate resuscitation and emergency surgery led to the survival of the patient. Secondly if the long sharp foreign bodies perforate the liver, the liver should be sutured at the site of perforation. This will prevent bile leak if the long object has disrupted the intra-hepatic biliary ducts. In penetrating injury to liver the depth of penetration cannot be assessed on table during surgery, so the site of penetration in liver is to be sutured. However such catastrophes can be easily averted if firstly, the patient presents early after ingestion of the foreign body and secondly by taking appropriate measures considering on the nature of ingested foreign body, patient's clinical parameters, radiological investigations and presence or absence of any complication. Long, sharp or impacted foreign bodies along with chemicals, magnet and batteries should be removed whereas a more conservative approach can be applied for the rest with watchful monitoring.

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