

# Beef Meat Oesophageal Foreign Body Impaction In An Infant

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## Abstract

Ingestion of foreign body is common and the oesophagus is the commonest site of impaction in the upper gastrointestinal tract. We present the case of a 12 month old boy who was fed beef meat and subsequently experienced persistent regurgitation which prompted radiological examination. Barium swallow examination under fluoroscopic guidance confirmed foreign body impaction, and he subsequently had endoscopic retrieval under general anesthesia. We emphasize the importance of radiological imaging in establishing an early diagnosis and effecting prompt treatment to prevent complications. This case is presented because of the rarity of beef meat bolus causing oesophageal impaction in infancy, and to highlight the role of imaging in the management of this condition. The literature was also reviewed.

## INTRODUCTION

Foreign body ingestion is a common occurrence in the pediatric age group, with boys almost twice as frequently affected as girls; and coin is the most commonly ingested foreign body [1]. Other materials that may be impacted in the oesophagus include button batteries, fish bone, marble, bran, and guar gum [2-6]. Early treatment is advocated to avert serious morbidity and even mortality in some cases. However presentation may be delayed for variable periods of up to twenty years [7]. Three-fourths (75%) of all upper gastrointestinal tract foreign bodies are impacted in the oesophagus, while 16% are found in the pharynx; and 8% and 1% in the stomach and small intestine respectively [8]. Fish bone impaction in the oesophagus has been described in a seven month old infant [3]. Beef meat foreign body impaction in the oesophagus is rare in infancy in the medical literature. We report this case of impaction of meat bolus to highlight the potential risks involved in feeding infants with unmashed beef; and to emphasize the role of radiological imaging in establishing an early diagnosis to effect prompt treatment.

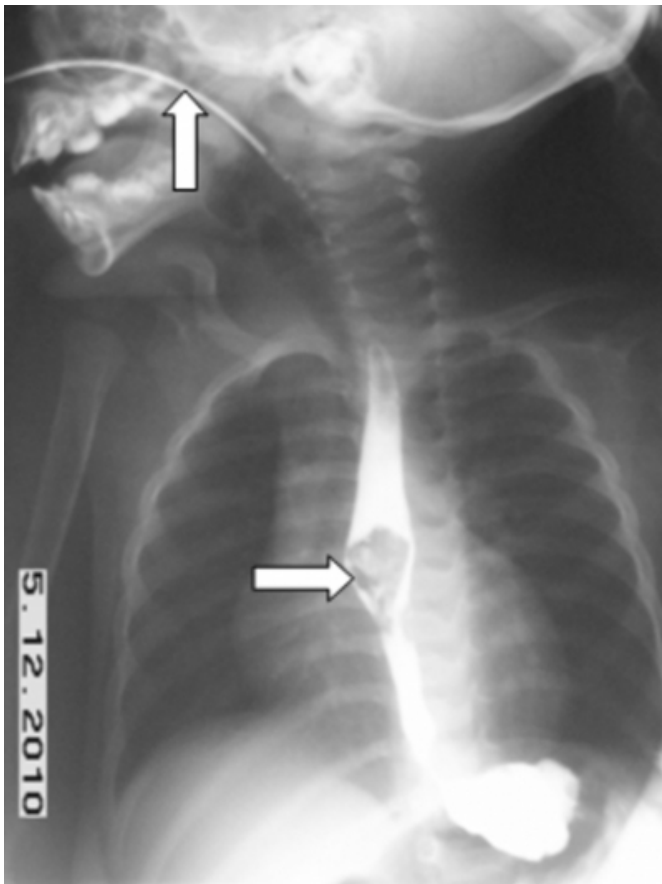
## CASE REPORT

A twelve-month-old boy was referred by the otorhinolaryngologist to the Bola Tinubu Health and Diagnostic Centre, Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria, for barium swallow examination. The clinical indication was persistent

regurgitation at every attempt at feeding after being fed with beef meat by a neighbour a day earlier. A total of 10 mls of barium sulphate solution (Baritop) was administered through a nasogastric tube under fluoroscopic control. Supine anteroposterior and lateral views of the oesophagus were obtained during the dynamic study. Findings revealed distension of the distal third of the oesophagus by a well-marginated intraluminal filling defect measuring 23 x 17 mm in diameter. This was at approximately 45 mm proximal to the gastroesophageal junction. Barium sulphate was seen to track around the filling defect to outline the distal oesophagus and stomach. There was no extraluminal collection of contrast medium to suggest perforation. The radiological diagnosis was distal third oesophageal foreign body impaction (Figures 1-4). He subsequently had endoscopic retrieval of the beef under general anesthesia, and the infant was relieved.

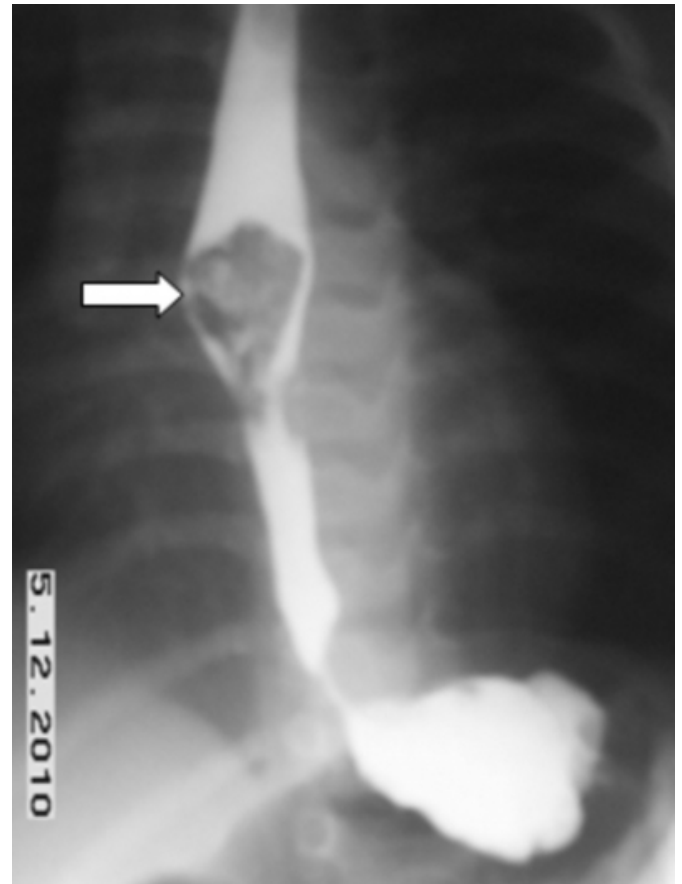
**Figure 1**

Figure 1: Beef meat oesophageal foreign body. Frontal oesophagogram showing beef in the oesophagus (right arrow). The nasogastric tube is the up arrow.



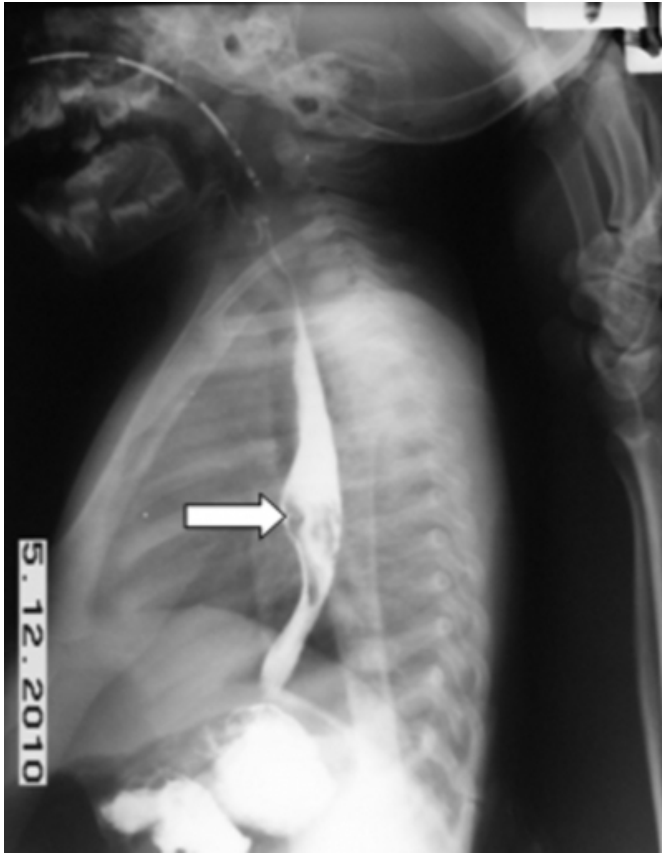
**Figure 2**

Figure 2: Beef meat oesophageal foreign body. Frontal oesophagogram showing beef in the oesophagus (arrow).



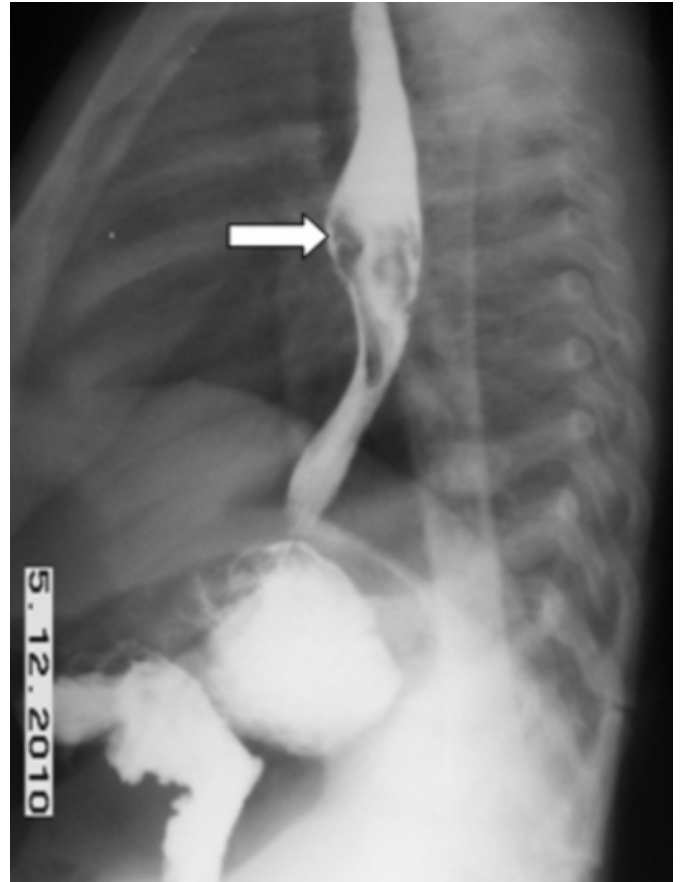
**Figure 3**

Figure 3: Beef meat oesophageal foreign body. Lateral oesophagogram showing beef in the oesophagus (arrow).



**Figure 4**

Figure 4: Beef meat oesophageal foreign body. Lateral oesophagogram showing beef in the oesophagus (arrow).



## DISCUSSION

Clinical history is valuable in the management of foreign body ingestion in the paediatric age group. Patients with poor history may pose diagnostic challenge and delay in management, which is related to unfavourable outcome. The patients may present with dysphagia and chest pain in the older child; and stridor, wheezing, and chest retractions in the neonate or younger child [7, 9, 10]. Our patient presented with regurgitation after feeding, and the parents and the neighbour were quick to suspect the meat meal. A delayed diagnosis has been identified as the most significant factor increasing the risk of complications [11]. Radiodiagnostic investigation is invaluable in making an early diagnosis. Imaging will locate the site of the impaction and any complication if present. Additional evaluation with bronchoscopy may be required in some cases if there are associated features of airway obstruction. Double aortic arch causing oesophageal and tracheal compression may rarely predispose a patient to the lodging of foreign bodies in the oesophagus [12]. Our patient had no respiratory symptoms to require bronchoscopic evaluation. The diagnosis was

made in our patient with barium meal examination under fluoroscopic control. Furthermore, the level of oesophageal obstruction in our patient was below the aortic arch; and the possibility of a double aortic arch being responsible for premorbid esophageal narrowing was precluded by this finding. The promptness of establishing the diagnosis in our patient saved him from the barrage of possible complications that have been variously described in the literature. These include perforation of the oesophagus, stomach, and diaphragm; aorto-oesophageal fistula, small bowel obstruction, aortic pseudoaneurysm, mediastinitis, and systemic air embolism [13-16]. We had no strong suspicions of nonaccidental child injury in the case presented; however Bakshi et al [17] reported a case of battered baby with homicidal marble ingestion in 2009, and this possibility should always be considered in every case.

The treatment of oesophageal foreign body depends on type, size and location of the foreign body [18]. The aim is to remove it within 24 hours to avert the risk of perforation later. A conservative approach is adopted for small, smooth foreign bodies which are usually eliminated naturally. Endoscopic extraction with the flexible or rigid oesophagoscope is commonly undertaken. Surgical removal is rarely indicated; but this may be the only option in the presence of complications. Ingested multiple magnets are removed promptly and surgically even if they are not impacted in the oesophagus because they attract one another and cause bowel necrosis and perforation [14]. Lodged button batteries rapidly cause direct tissue damage, by pressure and by chemical and electric burns, and would require urgent endoscopic removal [2]. Meat impaction causing oesophageal obstruction is an urgent problem and it has been suggested by Webb WA that the bolus should be removed within hours [8]. The patient presented had endoscopic retrieval under general anesthesia. Removal of spherical foreign bodies like marble is also possible with Foley's catheter under fluoroscopic guidance [19], but this was not indicated in our patient and was not attempted. We did not consider giving a trial of hyoscine butylbromide (Buscopan) because it has been shown to be ineffective in resolving food bolus impaction in the oesophagus, contrary to previously held beliefs [20].

## CONCLUSION

Foreign body ingestion is a common health problem. We have identified only a few previous reports in the medical literature describing beef meat impaction in the oesophagus. Impaction of bolus of beef meat in the oesophagus is rare in

infancy. To the best of our knowledge, this is one of the unusual cases of beef meat foreign body impaction in the oesophagus of any one-year-old infant. Radiological evaluation of patients with foreign body ingestion is vital to early diagnosis, as exemplified by this case. Parents and neighbours are anxious to commence feeding infants with solid food in our environment; and the medical practitioner should be aware of this potential risk.

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