IMPACTED DENTURES IN THE OESOPHAGUS

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SUMMARY

Two cases of dentures impacted in the oesophagus are presented. One patient had an intrathoracic perforation of the oesophagus. The complications arising from impacted foreign bodies and attempts at its removal are discussed. It is suggested that primary oesophagostomy and extraction of the foreign body may be the better alternative than repeated attempts at extraction through the oesophagoscope.

INTRODUCTION

Foreign bodies in the oesophagus often form interesting if not bizarre medical reading material but more importantly, they pose a more complicated clinical problem than foreign bodies in other parts of the gastrointestinal system. The reason for this is because if they become impacted in the oesophagus, there is very little chance of their spontaneous passage. If they are not urgently removed, the foreign body becomes rapidly buried in the progressive mucosal oedema and swelling. The consequences of perforation or fistulization from a foreign body eroding through the wall of the oesophagus poses a more serious clinical problem than perforation of the more distal parts of the gastrointestinal system. This has been stressed by Nandi. [1] As documented by Jackson [2] and others, the more common objects ingested are chicken bones, coins and food particles, especially lumps of meat. Various methods including those described by Tucker, [3] Richardson [4] and Bigler [5] have been designed for the removal of these foreign bodies. Some of these methods have resulted in perforation of the oesophagus. [6]

Although dentures form a small proportion of foreign bodies accidentally swallowed, they illustrate very well the problems which may be encountered in the management of impacted foreign bodies of the oesophagus. The following 2 cases serve to highlight some of these problems.

CASE 1

A 32 year old lorry driver swallowed his dentures (Fig. 1) while eating some broth on 19th October, 1981. Prior to this he had been perfectly well with no history of dysphagia or dyspepsia. Two days later he was seen at a hospital where an oesophagoscopy was performed. The oesophagoscope was passed to the level of the cardia but no foreign body was seen. Following this procedure the patient developed right sided chest pain. A chest x-ray revealed a pleural effusion. The patient was treated with cefoperazone and cloxacillin and put on a nil oral regime but his condition deteriorated. He was

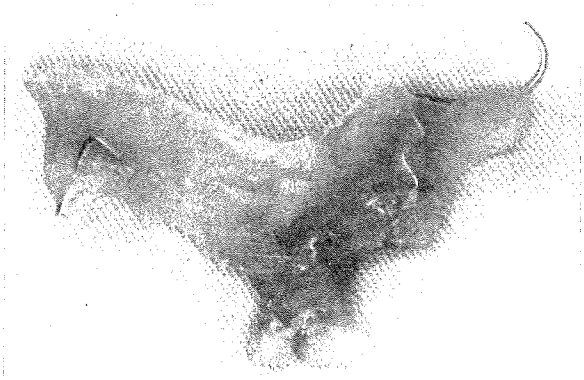

Fig. 1 Denture showing broken retaining hook on one side.

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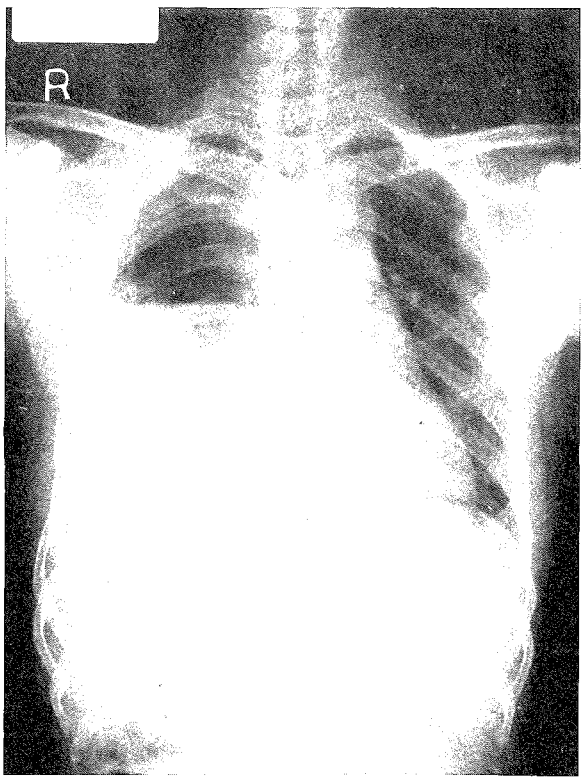

Fig. 2 Chest radiography showing multiloculated right hydropyothorax and foreign body in the upper third of the oesophagus.

seen at the University Hospital, Kuala Lumpur on 10th November, 1981. When examined at that time, he was emaciated and toxic. His temperature was 38.5°C, pulse rate 130 and his blood pressure was 70/50. There was no surgical emphysema in his neck.

The clinical findings in his chest were consistent with a hydropneumothorax. This was confirmed by a chest x-ray which showed multiple fluid levels suggesting a multiloculated empyema of the right chest. (Fig. 2). An urgent contrast swallow confirmed the presence of the foreign body in the upper third of the oesophagus (Fig. 3). It also demonstrated a perforation of the mid-oesophagus. The patient was started on Ampicillin, Gentamycin and Metronidazole. Three chest tubes were inserted and a total of approximately 600 ml of pus was withdrawn from the right chest. Culture of the pus grew *Pseudomonas aeruginosa* and *Streptococcus faecalis.*

The patient was started on intravenous hyperalimentation and he was put on a nil oral regime. His condition rapidly improved and on 13th November, 1981 the denture (Fig. 1) was removed via a left cervical oesophagostomy incision and a gastrostomy was performed at the same time. The denture had a broken retaining hook on one side (Fig. 1). Over the next 4 weeks the drainage from the chest tubes gradually decreased. A Barium Swallow repeated on 1st December, 1981 showed that the oesophageal perforation had sealed off. The neck incision healed without complication. The patient was cautiously commenced on oral feeding. The chest tubes and gastrostomy tube were removed on 17th December, 1981. A repeat chest x-ray (Fig. 4) showed residual pleural thickening. The patient remained well and was subsequently discharged on 29th December, 1981, 2 months from the initial incident. When last seen on 14th January, 1982 he was back to his normal weight and had no dysphagia.

CASE 2

A 52 year old unemployed man awakened on 9th February, 1982 with a sensation of having swallowed his dentures. He had been perfectly well up till then with no history of dysphagia or dyspepsia. He was seen at a hospital where an oesophagoscopy revealed the denture, impacted at 18 cms.

Attempted removal was unsuccessful. He was started on Cephaloridine and Gentamycin. He was referred to the University Hospital, Kuala Lumpur on 11th February, 1982. At that time he was complaining of painful dysphagia and pain on the left side of his neck. Clinical examination at that time showed him to be well with a normal temperature, pulse rate of 72 and blood pressure of 110/70. There was tenderness to palpation on the left side of the neck but there was no surgical emphysema. A lateral neck x-ray (Fig. 5) showed air in the retro-pharyngeal space and a contrast swallow confirmed the denture in the cervical oesophagus. On the same day, the patient was started on intravenous hyperalimentation and an oesophagoscopy showed the presence of the denture impacted at 18 cms. A left cervical oesophagostomy was performed and the denture removed. A nasogastric tube was passed into the stomach and the edges of the oesophagostomy were loosely approximated with a few interrupted sutures. The site of the oesophagostomy was drained. Post-operatively the incision leaked some saliva over the next few days but this rapidly decreased and on

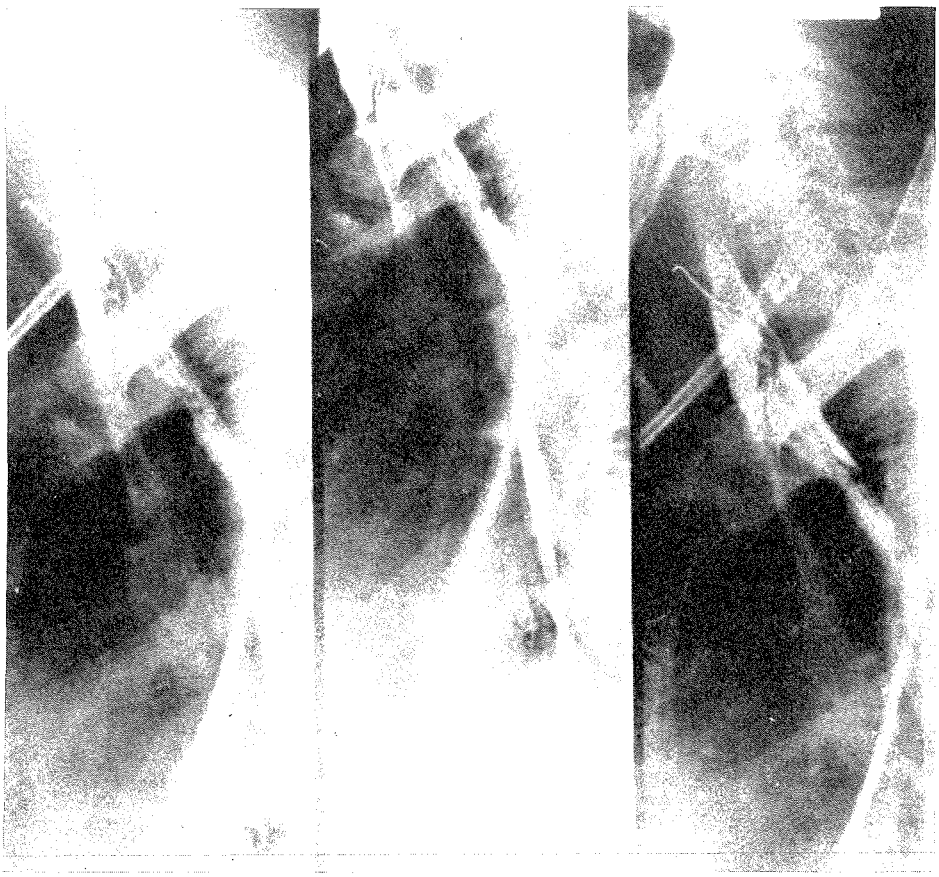

Fig. 3 Contrast swallow showing impacted denture and perforation of middle third of the oesophagus.

22nd February, 1982 (11 days after the operation) the patient was commenced on oral feeding. He was on a normal diet when discharged 2 days later. When seen on the 8th April, 1982 he had no dysphagia and was well.

DISCUSSION

These 2 cases have been presented to stress several problems posed by dentures impacted in the oesophagus.

Firstly, dentures should always be made to fit properly and if retaining hooks on the dentures are broken, they should be discarded. This is especially so in the Chinese who eat broth by slurping it from a bowl with the aid of a pair of chopsticks. It is quite easy to see how a loose fitting denture may then be inadvertently swallowed. The second patient swallowed his denture while asleep. When dentures are prescribed, patients should always be strongly advised against wearing them in bed.

When first seen, identification of the dentures in the oesophagus may be a problem. Both our patients had dentures with wire-hook attachments, as such radiologically they were easy to locate. Some dentures are made only of radioluscent acrylic. In these cases a contrast swallow under fluoroscopic screening is the best method for identification and location of the denture and should as a rule be performed before oeosphagoscopy. This is because, as in our second case, the denture may have been missed if only oesophagoscopy was performed. This is more so when the patients present late and the denture then lies buried in the folds of oedematous mucosa. Nwago [7] in describing 3 cases of dentures impacted in the oesophagus was unable to see the foreign body in one of the cases even though the instrument was passed beyond the site of impaction.

These patients are often able to localize the site of impaction quite well and the most frequent site is in the cervical oesophagus just below the crico-pharyngeus. Postlethwait [8] has shown that 73

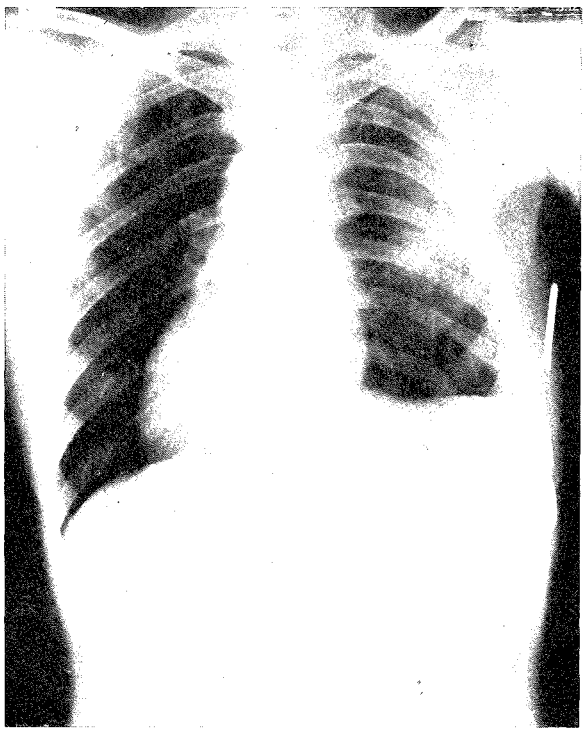

Fig. 4 Chest radiography showing resolution of pyothorax with residual pleural thickening.

Fig. 5 Radiograph of lateral view of neck showing air in the retropharyngeal space.

percent of foreign bodies impact in the hypopharynx.

The majority of foreign bodies can be removed per oram by the skilled oesophagoscopist. In his series, Nandi [1] was able to remove 843 out of 844 foreign bodies through the rigid oesophagoscope. If on the other hand these foreign bodies are impacted then the repeated attempts at forcible removal may cause further laceration and possible perforation of the oesophagus.

If these dentures are not removed urgently, they may cause perforation of the oesophagus or fistulization, Maruyama [9] has described tracheo-oesophageal fistulization from a foreign body. Oesophago-aortic fistulization has been described by many authors including Nandi [1] and Sloop. [10] This complication has been uniformly fatal until Ctercteko [11] described the first surviving case. Apart from these life-threatening complications, a foreign body will cause persistent dysphagia with regurgitation and intractable pneumonitis. Hence these foreign bodies should be extracted as soon as possible.

Removal of the longstanding impacted denture can be fraught with difficulty because of its very irregular and often sharp edges, combined with the mucosal swelling and oedema. We feel as with Nwago [1] that when a trial removal through the oesophagoscope has been unsuccessful then one should proceed to immediate oesophagostomy and removal of the foreign body. Persistant attempts at forcible extraction of the denture through the oesophagoscope will eventually result in perforation of the oesophagus. In a review of 108 cases of oesophageal injury, Keszler [12] found that 32 of these were the result of attempted removal of foreign bodies through the oesophagoscope and he felt that the foreign body itself caused the perforation in 27 of the 32 cases.

When perforation occurs in the neck it may be easily recognized by the presence of surgical emphysema and lateral x-rays of the neck may demonstrate air in the retropharyngeal space (Fig. 5). Perforation of the oesophagus in its intrathoracic location usually produces a hydro-pneumothorax (Fig. 2). The former may be managed quite effectively by removal of the foreign body and closure of the perforation and most importantly drainage of the retropharyngeal area.

The prognosis is good and morbidity minimal as illustrated in our second patient. Perforation of the thoracic oesophagus on the other hand, is a surgical emergency.

The key to a good prognosis and low morbidity lies in early recognition and prompt surgical intervention. If recognized early, then Hardin [13] and Mathewson [14] amongst others suggest primary thoracotomy and direct closure of the perforation. Delayed perforation as in our first patient presents a complicated problem. On the whole these patients should be initially treated conservatively. Various methods have been suggested by several authors including Mengoli [15] and Grillo. [16] The advent of intravenous hyperalimentation and powerful antibiotics has now improved the prognosis in these patients, although the morbidity remains high as in our first patient who was hospitalized for two months.

In conclusion rather than risking the possibility of causing a perforation of the oesophagus by repeated attempts at removing an impacted foreign body through an oesophagoscope, we feel that the better approach would be to avoid this complication in the first place by performing a formal oesophagostomy to facilitate easy removal of the foreign body.

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