

## Case Report

# Foreign body (peg pin) in the upper esophagus of Nigerian children: Report of two cases

Onotai L.O, Nwogbo A.C, Uyawanne N, Peterside A.

Department of Ear, Nose and Throat (ENT) Surgery, University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt, Rivers State, Nigeria.

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**Foreign body (FB) ingestion is common in clinical practice especially in children. Its impaction in the upper oesophagus constitutes an important cause of morbidity and mortality in our environment. Due to the availability of various unfriendly household materials and gadgets in our surrounding, children are becoming more prone to the accidental ingestion of unusual foreign bodies such as peg pins. In our geographical area these are the first cases of ingestion of peg pins among children we have encountered in our clinical practice. Hence, we decided to report these cases highlighting the peculiarities of this particular foreign body and the mode of retrieval of the foreign body.**

**Key words:** Foreign body, peg pin, upper esophagus, children, Nigeria.

## INTRODUCTION

Foreign body ingestion in children is a well known occurrence worldwide. It usually presents as an emergency either to the general practitioners or otolaryngologists. Most ingested foreign bodies become impacted often in the oesophagus (Durga et al., 2015; Onotai and Etawo, 2012; Onotai and Ebong, 2012; Kumar, 2004). Impacted esophageal foreign bodies are typically found at one of the following three normal anatomic esophageal narrowings: the level of the cricopharyngeus muscle, the level of the aortic arch, and the lower esophageal sphincter (Onotai and Etawo, 2012).

Ingestion of foreign body is a common emergency seen among children in our environment. The foreign body ranges from metallic to non-metallic household materials of different shapes and sizes (Nwogbo and Eke, 2012; Okoye and Erefah, 2001). After the nose and ear, the esophagus is the commonest site of foreign body impaction (Durga et al., 2015). The highest incidence of

foreign body ingestion occurs between 1-3 years of age (Onotai and Etawo, 2012; Kumar, 2004), because they have the tendency to explore the environment and place objects in their mouth and other orifices (Okoye and Onotai, 2006; Onotai and Etawo, 2012). The commonest site of impaction is at the cricopharyngeal sphincter (Onotai and Ebong 2012), accounting for majority of foreign body lodgement in the oesophagus of children (Hans et al., 2009).

Foreign body ingestion in children constitutes an important cause of morbidity and mortality in our environment especially during removal. Complications such as esophageal perforations may arise especially when the instruments for rigid esophagoscopy are inappropriate (Onotai and Etawo, 2012). Besides, sharp objects at any point of impaction may cause perforation before extraction. They can easily result in mediastinitis and mortality (Yee et al., 1975).

There is paucity of information on ingestion of peg pin among children in our immediate environment. Thus, we decided to present these cases of peg pin impaction in the upper oesophagus of children seen in University of Port-Harcourt Teaching Hospital, Port-Harcourt, Nigeria.

## CASE 1

A 2 years old, male child presented to our Children Emergency Ward (CHEW) of UPTH on account of ingestion of peg pin of four hours duration while playing with a peg (Figure 1). There was associated drooling of saliva and refusal of feeds but no vomiting, fever and difficulty in breathing. At presentation, he was anxious and restless. Oropharyngeal examination revealed pooling of saliva in the posterior pharyngeal wall.

Plain radiograph of the soft tissue neck done showed a radio-opaque object at the 6<sup>th</sup> cervical vertebra (C6) with its open pointed tip at the lower pharynx (Figure 2). A diagnosis of impacted foreign body (peg pin) in the upper esophagus was made. The patient was worked up for rigid esophagoscopy and foreign body removal under general anaesthesia. Intra-operative finding showed a metallic peg pin trapped by the cricopharyngeal sphincter at its base (Figure 3). No intra-operative complication was noted. Figure 4 shows the peg pin after removal from the oesophagus. Patient was started on oral fluid when fully conscious and alert and was discharged home the following day in a stable clinical condition.

## CASE 2

A 3 years old male child presented to our CHEW of UPTH with a history of accidental ingestion of peg pin of 24 hours duration. He was referred from a peripheral hospital in PH to UPTH for expert management. The patient presented with plain radiographs of soft tissue of the neck both antero-posterior and lateral views showing the radio-opaque object suggestive of peg pin at C6 in the upper oesophagus with its open tip pointing downward (Figure 5, 6). There was history of drooling of saliva, dysphagia, neck pain, vomiting but no fever and difficulty in breathing. The child was very restless and was in painful distress. A diagnosis of impacted peg pin in the upper oesophagus was made.

The patient had rigid esophagoscopy and foreign body removal under general anaesthesia on the same day. Intra-operative findings showed bilateral mucosal tear with haemorrhage which was controlled by applying pressure on the bleeding points using a piece of gauze. Subsequently, nasogastric (NG) tube was passed and left insitu for 5 days. After a check plain radiograph of the antero-posterior view of the chest was done and found to be normal, the NG tube was removed and patient was fed orally without the NG tube without any complication. Patient was then discharged home in stable clinical condition on the 7<sup>th</sup> day post operatively to continue outpatient follow up.

## DISCUSSION

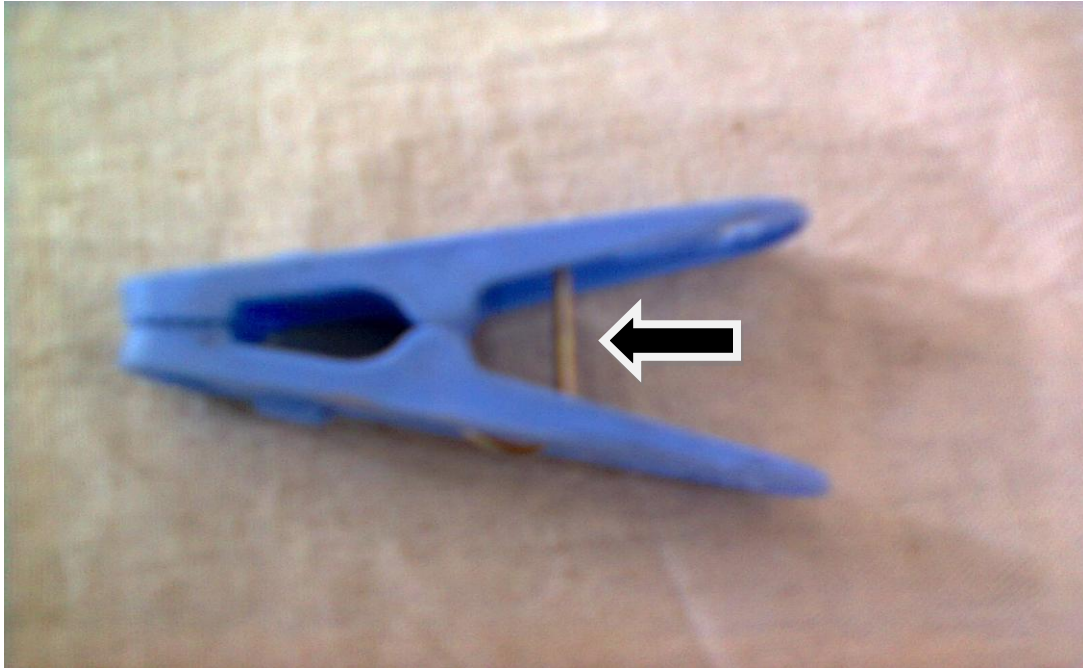
Ingested peg pin is not a common finding in our environment.

These cases encountered in our series are the first reported cases in our setting in Port Harcourt Nigeria. However, other common foreign bodies of metallic origin have been reported by several researchers (Bhat et al., 2015; Abdulahi et al., 2014; Onotai and Etawo, 2012; Okoye and Erefah, 2001). During the era of coin currency in Nigeria, its ingestion was the commonest foreign body found in the aero digestive tracts of children (Onotai and Etawo, 2012; Alabi et al., 2011). This has not changed in the Western Worlds where coins are still in use.

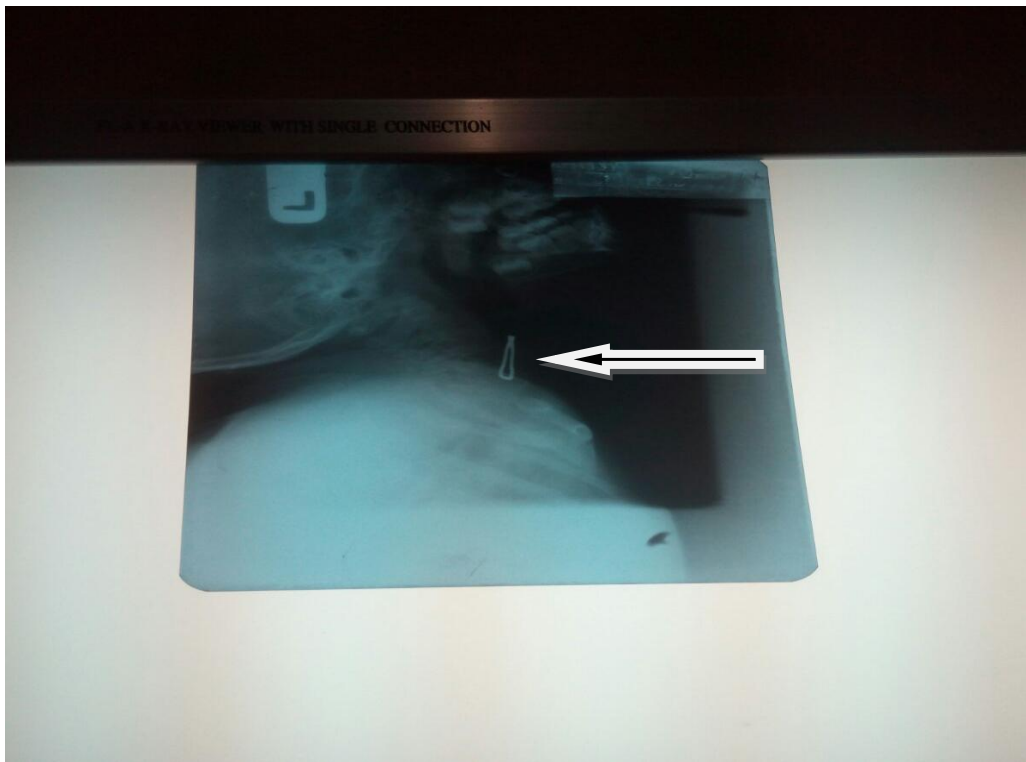
Foreign body ingestion occurs more commonly in males than females both in adults and paediatric population with M: F of 2:1 (Okoye and Erefah, 2001) and 1.5:1 (Alabi et al., 2011). Our reported cases were only found in male children. Impacted metallic component of peg pin at C-6 in a 2 year old boy has been reported (Okojie et al., 2013). The incidence and findings were similar to our first case but ours did not develop complications.

Peg pin is a metallic angulated foreign body with its open tips pointing laterally (Figure 4). Angulated foreign bodies tend to be trapped in the proximal oesophagus as seen in our cases (Onotai and Ebong, 2012; Okhakhu and Ogisi, 2007). In children foreign body ingestion could be asymptomatic initially and if the incident is not witnessed by the parents or caregivers could lead to delay in presentation, intervention and prognosis (Onotai and Etawo, 2012). The early symptoms of drooling of saliva, dysphagia and vomiting could be attributed to the non-migratory and impacting nature of peg pin in the upper oesophagus (Okojie et al., 2013). In our series both patients were symptomatic and this could be responsible for their early presentation to the hospital.

In the second patient (case 2), the open lateral tips of the peg pin were found to be buried in the oesophageal mucosa intra-operatively and this can cause oesophageal perforation which can further be complicated with mediastinitis if not adequately managed (Onotai and Etawo, 2012; Onotai and Ebong 2012). In another setting Okojie et al., have reported a case of 2 years old boy that developed stenosis of the trachea following impacted peg pin in his oesophagus (Okojie et al., 2013). Delay in surgical intervention could contribute to migration of foreign body along the gut thereby causing more complications (Orji et al., 2012; Baral et al., 2010; Alabi et al., 2008; Akhtar and Hag, 2008). All our cases presented early and expert management was immediately commenced. Our prompt intervention may have prevented the patients from developing complications such as stenosis of the oesophagus and trachea. Rigid esophagoscopy under general anaesthesia remains the effective and safe method of oesophageal foreign body removal in the hands of the experts (Onotai and Etawo, 2012). In our series foreign body grasping forceps was used to grab the foreign body which was visualized with the aid of the rigid oesophagoscope and its light carrier and was pulled out along with the esophagoscope. However, some mucosal



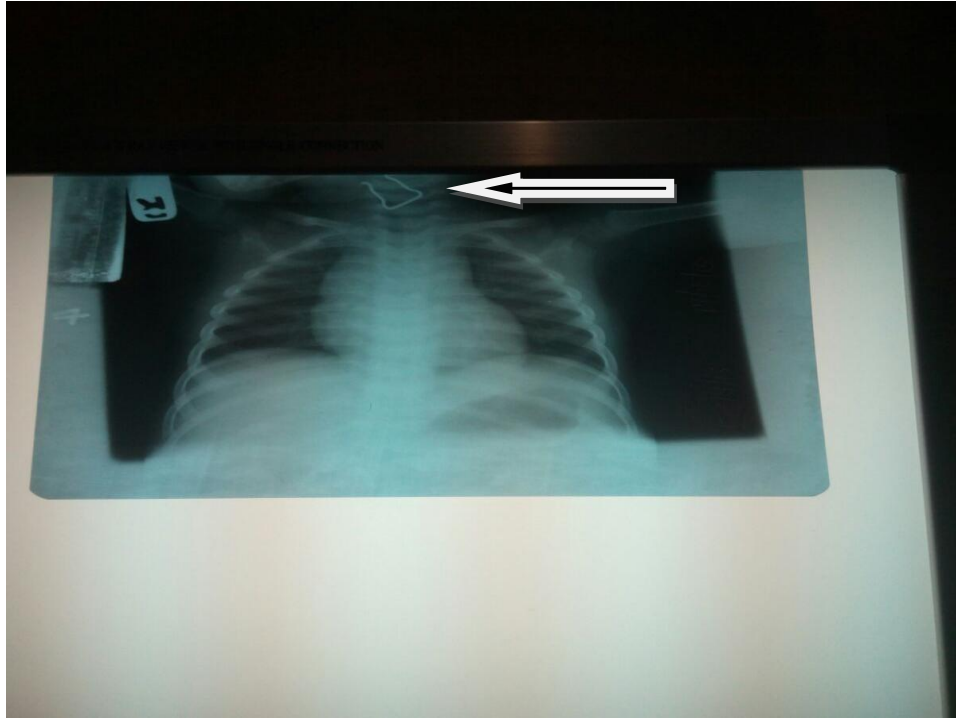
**Figure 1.** A peg with the arrow showing the peg pin.



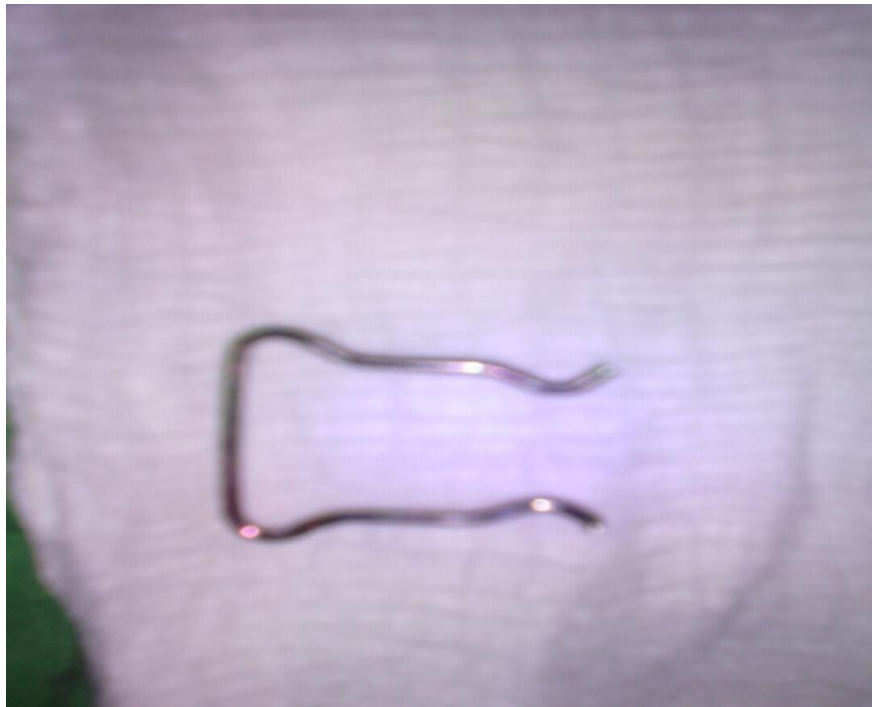
**Figure 2.** Lateral soft tissue radiograph of the patient neck showing a radio-opaque object at C6 with its open pointed tip pointing upwards in the oesophagus.

injury was encountered in the second patient as mentioned in the case report. If it was possible we would

have pulled the foreign body into the lumen of the esophagoscope to avoid further mucosal injury. We are



**Figure 3.** Antero-posterior plain radiograph of the patient neck and chest showing radio-opaque object tapped around the cricopharyngeal sphincter of the oesophagus.

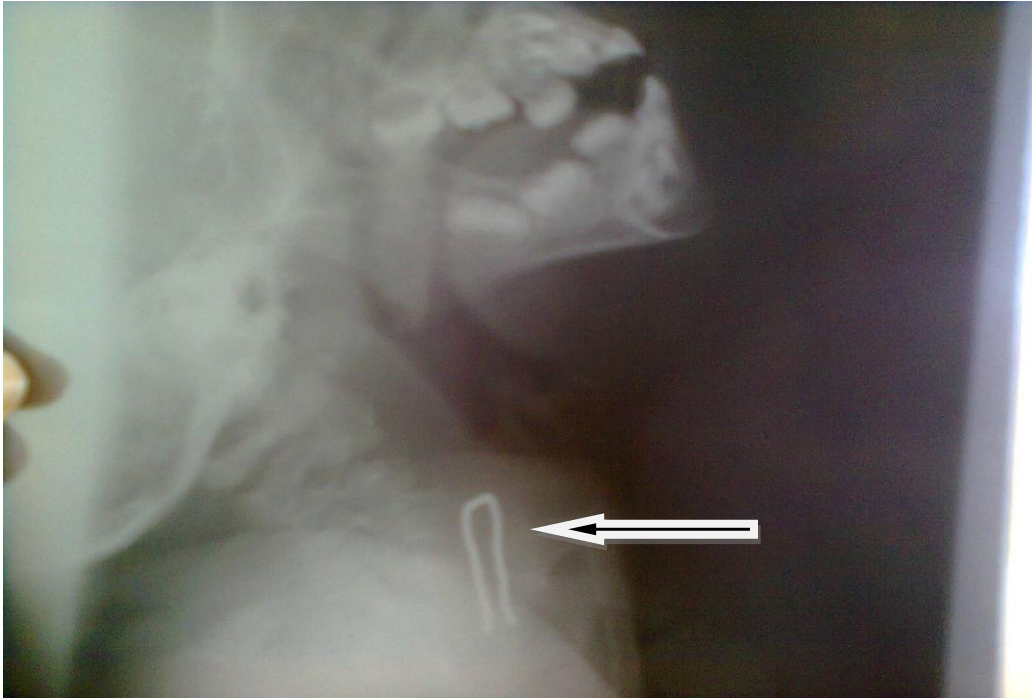


**Figure 4.** Showing peg pig after removal from the oesophagus of the patient.

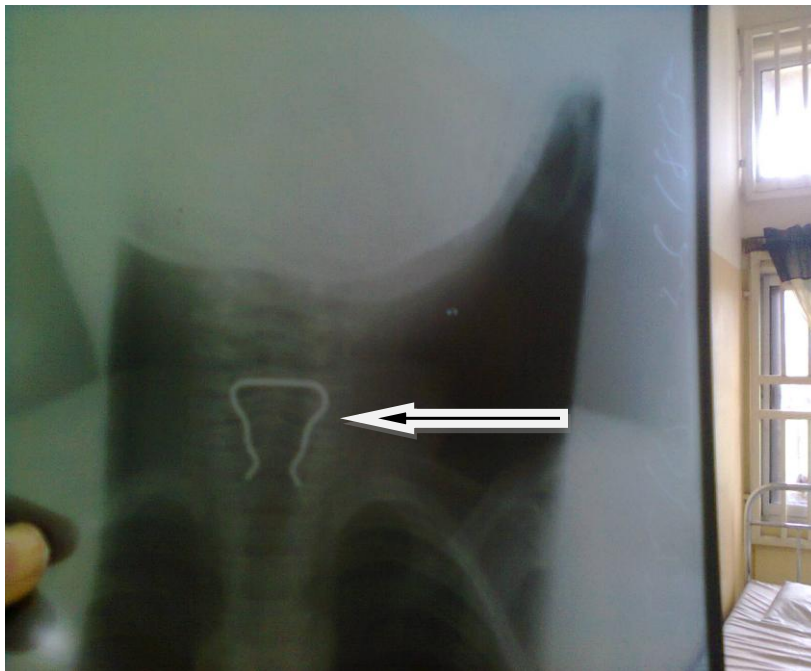
aware that large foreign bodies can be fragmented for ease of extraction through the lumen of the esophagoscope and to avoid injuries to the esophagus.

This we didn't do because of lack of appropriate instruments.

Even though, we encountered mucosal injury and bleeding



**Figure 5.** Lateral soft tissue radiograph of the patient neck showing a radio-opaque object at C6 with its open pointed tip pointing downward in the oesophagus.



**Figure 6.** Antero-posterior plain neck radiograph of the patient showing the radio-opaque object in the oesophagus.

intra-operatively during esophagoscopy and removal of foreign body in the second patient. We were able to manage the patient effectively by controlling primary haemorrhage and the passage of NG tube for early

feeding and to stent the oesophagus. Similar to our experience in the second case, in the past some researchers have encountered iatrogenic esophageal perforation and its sequelae (Hans et al., 2009 Okhakhu

and Ogisi, 2007; Okoye and Erefah, 2001). Furthermore, difficult intubation because of tracheal narrowing by impacted peg pin at C-6 which resulted in bradycardia and laryngospasm during intubation has been noted and reported (Okojie et al., 2013).

## CONCLUSION

Peg is a common household material in our environment which makes it easily accessible to children and its pin can easily be ingested and gets impacted in the oesophagus. To reduce the morbidity and mortality that may be associated with the ingestion of peg pin, we recommend parental health education on object placement, use of pin less pegs and supervision of children by caregivers especially when they are playing with household gadgets. These measures when put in place will help to curb the incidence and the life threatening complications associated with this type of foreign body.

## CONFLICT OF INTEREST

There is no conflict of interest. The paper was sponsored by the authors.

## REFERENCES

- Abdulahi MK, Garba MM, Tijiani SA, Abimiku SL, Musa TS, Mohammed BF (2014). Clinical Profile and management of aerodigestive Foreign Bodies in North-West Nigeria. *Sudan Medical Monitor*. 9:39-43.
- Akhtar M, Haq MI (2008). Management of Esophageal Foreign Bodies. *Professional Med J*.12 (3):308-311.
- Alabi BS, Dunmade AD, Sulaiman AO, Adebola SO (2008). Migrating Superglue Pin in the Gastrointestinal Tract of an Adult Nigerian Male. *Trop. J. Health Sci*. 15:28-30.
- Alabi BS, Oyinloye OI, Omokanye HK, Karemu S, Afolabi OA, Dumande AD, Akande HJ (2011). Foreign Bodies in the Upper Aerodigestive tract of Nigeria Children. *Niger J Surg*. 17: 78-81.
- Baral BK, Joshi RR, Bhaharal BK, Sewal RB (2010). Removal of Coin from Upper Esophageal Tract in Children with Magill's Forcep under Propofol Sedation. *Nepal Med Coll J*. 2(1): 38-41.
- Bhat VS, Bhandary A, Bhandary SK, Shetty S (2015). Oesophageal Foreign body in a neonate: Report of an uncommon case. *Indian Journal of Anatomy and Surgery of Head, Neck and Brain*, October-December. 32-34.
- Durga PG, Ravi Kumar RM, Murty MAN, Rahul S (2015). Study of aerodigestive tract foreign bodies. *Indian J Basic Applied Med Res*. 4(2):431-436
- Hans S, Kayhan B, Dural K, Kocer B, Sakinci U (2009). A new and safe technique for removing cervical esophageal foreign body. *Turk. J Gastroenterol*. 16(2):108-110.
- Kumar S (2004). Management of Foreign Bodies in the Ear, Nose and Throat. *Emerg Med Australia*.16(1):17-20
- Nwogbo AC, Eke N (2012). Oesophageal foreign bodies in Port Harcourt. *Port Harcourt Med J*. 6 (2): 211-214
- Okhakhu A.L, Ogisi FO (2007). An Unusual foreign in Human Esophagus-Case Report. *Benin J. Postgrad Med*. 9, No1
- Okojie NQ, Ekwere IT Tobi K. (2013). Case Report: Anaesthetic Management of Rare Esophageal Foreign Body Impaction. *Afr. J. Anaes Intensive Care*. 13(2): 62-65
- Okoye BCC, Erefah AZT(2001). Oesophageal foreign bodies in Port Harcourt. *J. Med. Invest. Pract.*, (JOMIP) 2: 62-64.
- Okoye, BCC, Onotai LO (2006). Foreign bodies in the nose *Niger J. med.*, 15(3):301-304.
- Onotai LO, Ebong EJ (2012). Impacted Fishing Hook in the Upper Cervical Esophagus of two Nigerians. *J. Med Med Sci*. 3(6): 365-370
- Onotai LO, Etawo US (2012). The challenges of Rigid esophagoscopy in the management of esophageal foreign bodies in Port Harcourt. *Int. J. Med Med Sci*. 2 (5): 108-113.
- Orji FT, Akpeh JO, Okolugbo NE (2012). Management of Esophageal Foreign Bodies: Experience in the Developing Country. *World J. Surg*. 36(5): 3-8.
- Yee KF, Schild JA, Hollinger PH (1975). Extraluminal foreign bodies (coins) in the food and air passages. *Ann Otol.*, 84:619-623.