

## “Role of Rigid Oesophagoscopy in Diagnosis and Treatment of Esophageal Conditions

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**Abstract:** *The major indication for esophagoscopy is dysphagia which can be due to a number of causes such as foreign bodies, the commonest foreign body is coin and the commonest site is just below the cricopharynx, tumors (benign and malignant) and strictures (reflux, peptic, corrosive, anastomotic). The use of rigid or flexible esophagoscopy may be determined by the suspected or actual anatomic lesion or condition in the esophagus, with various studies favoring the use of rigid or flexible esophagoscopy for esophageal foreign body extraction, biopsies of tumors or suspected lesions, and stricture disorders requiring dilatation. The present retrospective audit was undertaken to provide data regarding the use of rigid esophagoscopy in our setting. The study will be of benefit in assessing the use of rigid esophagoscope for the variety of clinical conditions for which it was indicated in our setting.*

*The study was done to review the indications and complications of rigid esophagoscopy in Indian patients (50 cases) who had rigid esophagoscopy from July 2013 to June 2015 at the ENT Department, MP Shah Government Medical College, Jamnagar, Gujarat.*

**Keywords:** *rigid esophagoscopy, dysphagia.*

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### I. Introduction

It's rightly said that “our eyes sees whatever our mind knows” but many a times during esophagoscopy it has been seen that the co-relation of clinical findings and esophagoscopy findings are much different. Hence, my study is done to establish the fact that esophagoscopy must be done in any case of esophageal problems and this could be finger pointer to all fellow colleagues. Esophagoscopy for diagnosis is indicated in nearly all patients with unexplained symptoms and signs of esophageal and mediastinal diseases. In most of the cases, a typical history of swallowing a foreign body was available, with no symptoms at all to an occasional vomiting. Dysphagia was the most common symptoms present in 72 % of cases in present series. A conclusive history with dysphagia should make one to warm strongly suspect an esophageal foreign body.

Dysphagia is an important symptom, more so in children, of a foreign body in the esophagus. Throat pain, retrosternal pain and foreign body sensation in throat are diffuse symptoms, but in presence of other clinical data, make one suspect a foreign body. Excessive salivation and regurgitation are symptoms of complete esophageal obstruction. Coughing, stridor and other respiratory symptoms may quite often be the only presentation in infants and young children. Quite often no sign is evident to confirm the diagnosis of esophageal foreign body.

### II. Materials And Methods

The present study was done on 50 patients ranging from age group of 7 to 65 years in ENT department of G.G. Hospital -Jamnagar in my presence dating from July'2013 to June '2015. The patients with dysphagia and stricture found in esophagus after barium swallow and on endoscopic examination have been included in my study. Patients were asked regarding the duration and grade of dysphagia, past history of acid corrosive poisoning, change of voice, reflux acid peptic disease and other symptoms suggestive of malignancy. If there is history of foreign body ingestion then nature and time since ingestion elicited. Relevant personal history particularly regarding habits other positive past history like poisoning ,any surgery and its complications and family histories were taken to trace out etiology.

Physical examination was carried out in all patients. Nutritional status was noted oral cavity and nails for anemia were examined. Skin, pulse blood pressure was tested for dehydration and hypotension. Examination of oral cavity, tongue, throat , Indirect Laryngoscopic examination and palpitation of neck was carried out. The routine laboratory investigation viz. Hemoglobin, total and differential white cell count, ESR, urine, blood sugar were done except in cases of emergency esophagoscopy. X-ray chest, X-ray neck and barium swallow were carried out as radiological investigation in order to facilitate the site of lesion.

All patients were admitted, checked and corrected for dehydration and prepared for general anesthesia. In all patients, rigid esophagoscopy was carried out under general, anesthesia. The presence of stricture or foreign body was noted. Benign strictures were dilated with gum elastic bougies. In benign strictures the scope was negotiated distal to the lesion after complete dilatation. Procedure was abandoned in cases where

perforation was suspected by sudden give away sensation, during negotiation, visible mucosal tag due to rupture, large amount of blood stained over gauze piece used to clean bougies for dilatation.

In cases where lesion suspicious of malignancy, biopsy was taken. If foreign body found, it was removed and exact site was noted i.e. centimeters from upper central incisor tooth. After this patients were kept under 24 hour’s observation. The sign of any complications like fever, chest pain, haematemesis, rise in pulse were carefully looked for and if something doubtful was found, X-ray chest was repeated before discharge. Specific advice was given to patients with benign strictures to follow up immediately when difficulty found in swallowing. In cases of malignant strictures after histopathological confirmation patients were referred to the radiotherapy unit or cancer hospital for further management.

### III. Results

Out of total 50 cases studied ,29 cases were of foreign body ingestion out of those maximum were children, 11 cases were presented with benign strictures and remaining 10 were found to have carcinoma esophagus. Results of my study are compared with some other old and accepted study series and comparative data studied. Table no. 1 shows age distribution among the patients for foreign bodies in the esophagus. The most common age group in this series was 7-10 yrs and 11-15 yrs. In present series 82.5 % were below 15 yrs. The youngest patient was 7 yrs old and the oldest was of 67 yrs. Coins are much common in the age groups below 15 yrs. Mutton, fish bone are more common with the elderly group.

Age in years	%
3-6	13.7
7-10	41.3
11-15	27.5
16-20	3
21-40	6.8
>40	6.8
Total	100

**Table no -2** shows sex ratio among the patients, with male to female sex ratio of 1.4: 1 showing male preponderance.

Sex	No.	Percentage
MALE	17	58.62
FEMALE	12	41.37

As in Table no. 3 Coins made a majority of the case in this series (55.14 %), as well as in the Kakkar's series (44%). Barbary et al in his series of 200 cases, mention 147 cases of coins (73.5 %) lodged in the esophagus, comparatively high when compared to this series (55.14 %). The high percentage of coins lodged in the esophagus in these series could be clue to the similarity in the socio-economic status in India and Egypt.

Nature Of Foreign Body	Present Series		Kakar Series %	0 Case Barbary %
	Case	%		
1. Coins 1 rupee	6	55.14	44	73.5
2 rupee	3			
50 paise	5			
25 paise	2			
	16			
2. Dentures	2	6.8	16	1
3. Pins-Needles	—	—	8	2
4. Vegetable seeds	2	6.8	6	—
5. Bone piece	2	6.8	5	5
6. Metal	2	6.8	4	5.5
7. Toys	1	3.4	2	—
8. Saftey pins	—	—	2	2
9. Wax ball	—	—	1	—
10. Mutton	1	3.4	—	9
11. No F.B. seen	2	6.8	6	—
12. Others	1	3.4	—	—
Total	29	100	100	100

In present series the most common site of foreign body found during esophagoscopy is cervical esophagus (44.4%). Jackson quotes 81% of cases in cervical esophagus; The lower thoracic part only shares 7.4%. Many of the foreign body were found in stomach & intestine, before the patient is posted for

esophagoscopy. They were referred for further surgical management. Radiological foreign body was detected (79%) in this present series. Hoeksema et al (1971) puts great emphasis on x-ray lateral soft tissue neck as 83% of the foreign bodies has a high localization and 84% of these were visible in an x-ray of the neck. King F. Yee (1975) emphasizes that coins lie parallel to the vertebral column on lateral soft tissue film, and any deviation from this axis should arouse suspicion that foreign body is in unusual location other than in lumen of esophagus. No matter how many x-ray have been performed, a final x-ray for checking of the presence and position of the foreign body should be made immediately before esophagoscopy. Foreign bodies are often shifting. There was no complication or mortality associated with this series.

Site	No. of case	Percentage
Cervical	12	44.4
Upper thoracic	7	25.9
Mid thoracic	6	22.2
Lower thoracic	2	7.4
<b>Total</b>	<b>27</b>	<b>100</b>

The present series contains study of the 21 cases of the esophageal strictures and the observations that I came across are as under esophageal strictures out of them 52.38% are benign & 47.62% are malignant in nature. Maximum number of patients with esophageal stricture present in between 31 to 60 years of age.

In present series 80% of patients having malignant strictures presenting between the age of 41 to 60 years. Regarding to benign strictures females are more affected than males in the present series. In malignant stricture males are affected more compared to females with ratio of 2.3:1. In my series 80 % of patients with malignant strictures show the symptom of weight loss and 50 % patients show pain either throat pain, chest pain or retrosternal pain and hence it also has considerable role in diagnosis of malignant strictures. Weight loss also correlates well with both series which is due to inadequate nutrition in cases of benign' strictures. On the other hand in cases of malignant stricture it is due to inadequate nutrition and increased metabolic demand by the tumor mass. In the present series the 10 strictures were found to be malignant on histopathological examination. Among them 70% were found to be squamous cell carcinoma which coordinates with the Puhakka's series in which this incidence was 62.4%, 10% of the patient well diagnosed as adenocarcinoma, with single case having growth at lower esophagus which also coordinates with Puhakka's series in which this incidence is 20% . It is well said that the squamous cell carcinoma variety is most common among the all malignancy found in aero digestive tract, the present series is also showing the same that 70% of all

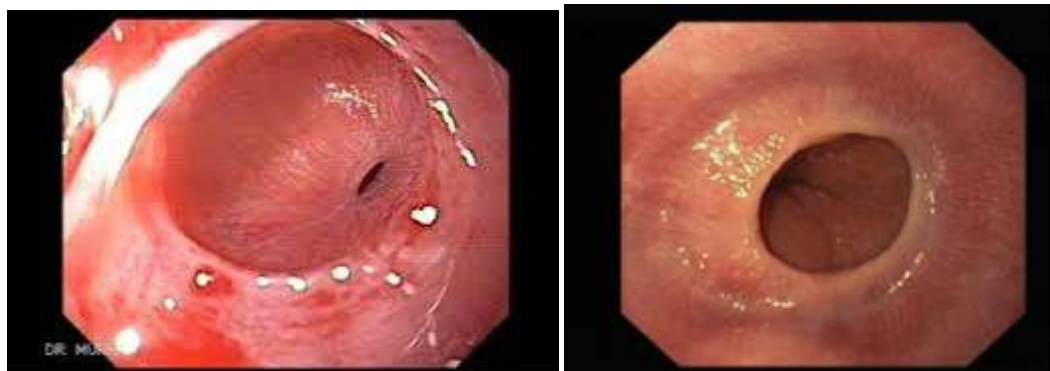
#### IV. Discussion

Oesophagoscopy has been in vogue since the middle of the 19<sup>th</sup> century as a means of visualizing and treating certain oesophageal disorders. A number of instruments were designed with this purpose in mind, the most successful of which was the rigid oesophagoscope, later followed by the flexible oesophagoscope.<sup>2</sup> Currently both instruments are in use, with their own indications and efficacies for similar or different oesophageal conditions. The major indication for oesophagoscopy is dysphagia, which can be due to a number of causes such as foreign bodies, tumors (benign and malignant) and strictures (reflux / peptic, corrosive, anastomotic, etc.). The use of rigid or flexible oesophagoscopy may be determined by the suspected or actual anatomic lesion or condition in the oesophagus, with various studies favouring the use of rigid or flexible oesophagoscopy for oesophageal foreign body extraction, biopsies of tumors or suspected lesions, and strictural disorders requiring dilatation. Rigid esophagoscopy is a well-established endoscopic procedure for both diagnostic and therapeutic indications. Ritchie et al studied the efficacy and safety of rigid esophagoscopy in diagnostic and therapeutic settings in a consecutive series of 404 patients with oesophageal carcinoma and compared these to flexible esophagoscopy in the same group. They concluded that rigid esophagoscopy in the presence of carcinoma retains an important diagnostic and therapeutic role which can be achieved with a low incidence of perforation in high-risk patients.

In another study<sup>2</sup> the same authors compared diagnostic rigid and flexible esophagoscopy in carcinoma of the oesophagus and concluded that diagnostic esophagoscopy can be achieved without perforation with either instrument, but the chance of diagnosing carcinoma was significantly greater with the rigid instrument.

In Manara et al their experiences lead them to reject abandoning the rigid esophagoscopy for the flexible optical fibres as even those Ear, Nose and Throat (ENT) Departments with vast experience in the use of fibre optic esophagoscope are not always able to remove all kind of foreign bodies. Foreign body perforation of the oesophagus is a rare but important sub entity of oesophageal perforations, which responds well to surgical treatment. The risk of iatrogenic perforation of the oesophagus was greatest in old patients who had a lump of meat stuck in the distal 3rd of the esophagus. Sideropenic dysphagia or Plummer-Vinson syndrome was

encountered in 7 patients (14%), All these patients underwent endoscopic dilatation, and good results without complications were achieved.



**Esophageal webs**

## **V. Conclusion**

In the present series the 50 cases of esophagoscopy were done under general anesthesia. Out of 11 were done as an emergency procedure and 39 were done as a routine procedure with all previous investigations. In cases of foreign body of the esophagus all patients were taken for esophagoscopy as an emergency procedure after x-ray, renal function tests. Out of 29 cases of foreign body 16 were the coins in the esophagus others including the dentures, bone - mutton pieces, metal etc. Dysphagia was the main presenting complaint in all cases of the foreign body in 72% of cases while the history of ingestion of foreign body in nearly all the cases can be elicited. 21 cases were found to have the esophageal stricture either benign or malignant during esophagoscopy. Among them the benign stricture was found in 11 cases while the malignant stricture was found in 10 cases. All the benign strictures were dilated at the first attempt while the stricture those who were found to be malignant were biopsied by the punch biopsy forceps and material sent for the histopathological examination. The occurrence of benign strictures was more common in females, while the male predominance was found in cases of malignant strictures. Dysphagia or globus sensation was the most common symptoms in all types of the strictures. The weight loss is found in 80% of malignant stricture.

In all cases except foreign body the barium study was carried out prior to the esophagoscopy. In case of malignant strictures the history of tobacco and smoking has been found to be most common. Pallor and koilonychia were the two most common findings seen in cases of benign stricture. Hemoglobin count was carried out in all the patients was found to be significantly low in most of the patients, most of them are females and were diagnosed as Plummer Vinson syndrome

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