

## EXPERIENCE WITH RIGID ESOPHAGOSCOPY IN JOS, NORTH-CENTRAL NIGERIA

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### ABSTRACT

**Objective:** Esophagoscopy which may be done for either a therapeutic or diagnostic reason has remained useful in the management of esophageal diseases. This study evaluates our experience with rigid esophagoscopy with special emphasis on esophageal foreign bodies in our unit.

**Method:** This is a six-year (January 2000 – December 2005) retrospective review of cases of rigid esophagoscopy in the Ear, Nose and Throat Unit of our center.

**Results:** Fifty-seven patients with ages ranging from 10 months – 75 years were studied. There were 35 (61.4%) males and 22 (38.6%) females. Fifty-three of the patients (93%) had varying foreign bodies in the esophagus, 3 (5.2%) patients had carcinoma of the esophagus while 1 (1.8%) had pharyngeal pouch. The 0-10 year age group had the highest prevalence of esophageal foreign bodies (66.0%) with the middle third of the esophagus been the commonest site of impaction (58.5%). There was no fatality recorded.

**Conclusion:** Rigid esophagoscopy is a relatively safe procedure in trained hands and ideal environment with the necessary facilities in place.

**Key Words:** Rigid esophagoscopy, Foreign bodies, Site of impaction.

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### INTRODUCTION

Since 1868 when Adolph Kussmaul first looked into the esophagus using reflected light in Freiburg, Germany<sup>1</sup> and the contributions of Chevalier Jackson in Philadelphia at the turn of the century to broncho-esophagology by introducing distally lighted laryngoscopes, bronchoscopes and esophagoscopes<sup>2</sup>, endoscopes have undergone modification with modern lighting and telescopic systems<sup>3</sup>. Presently, the flexible fibre-optic esophagoscope is preferred in the management of esophageal diseases because of its numerous advantages<sup>4,5</sup>. This however has not decreased the place of rigid esophagoscopy<sup>6</sup>. The two techniques complement each other<sup>7</sup>. For example, the fibreoptic endoscope is useful in the removal of small foreign bodies from the esophagus but fails with large ones like parts of denture and large bones. Except for open procedures, rigid esophagoscopy is the only effective method in these cases when done under endotracheal anesthesia and sometimes with esophageal muscle relaxation<sup>8</sup>. The chance of diagnosing esophageal carcinoma is significantly greater with the rigid esophagoscope<sup>9</sup>. The indication for esophagoscopy could be therapeutic or diagnostic. The commonest indication is the suspicion or presence of a foreign body in the

esophagus and rarely other pathologies in the aerodigestive tract<sup>10</sup>. Most foreign bodies are impacted in the regions of esophageal constriction and the commonest swallowed by children is coins. In adults, bones, fish bones, meat boluses and dentures constitute the majority<sup>11</sup>. Both techniques are not bereft of complications<sup>12,13</sup>. The commonest of these is esophageal perforation<sup>10</sup>. Various complication rates following rigid esophagoscopy have been documented and these rates are noted to be within acceptable ranges<sup>14,15</sup>. In centers like ours where the fibreoptic esophagoscope is not used routinely, the readily available rigid instrument can be used with minimal complications when handled appropriately. It is thus in the light of the above that we present our experience with rigid esophagoscopy over a six year period.

### PATIENTS AND METHODS

The medical records of all patients who had rigid esophagoscopy at the Jos University Teaching Hospital, Jos, Plateau State, Nigeria in the period January 2000 to December 2005 were analyzed for age, sex, indication for esophagoscopy and the presence or absence of complications. Those presenting with foreign bodies as indication were further assessed for type and site of impaction of foreign body. The results are presented in simple descriptive form and Tables.

## RESULTS

A total of seventy three patients were seen in the study period. Fifty seven case notes were retrievable and eventually analyzed in this study. The age range was 10 months to 75 years. 35(61.4%) patients were in the age range 0-10 years (Table I). There were 35 males (61.4%) and 22 females (38.6%), with a Male: Female ratio of 1.6:1. The commonest indication for esophagoscopy was foreign body in the esophagus in 53 patients (93%). Other indications were carcinoma of the esophagus in 3(5.2%) patients and pharyngeal pouch in 1(1.8%) patient. The types of foreign bodies impacted in the esophagus were coins, office pins, ear rings, dentures, meat boluses and large bones (chicken and fish). Thirty-five patients (66.0%) with foreign bodies were children less than 10 years of age. The commonest foreign body in this age group being coins as seen in 28 patients (Table 2). Thirty-one patients (58.5%) had foreign bodies impacted in the middle third of the esophagus, 17 (32.1%) patients in the upper third and 5 (9.4%) patients in the lower third. Twenty two (41.5%) patients with foreign bodies presented within 24 hours, 25 (47.2%) patients within 1 week, 4 (7.5%) patients within 2 weeks while 2 (3.8%) patients presented within the third week of impaction of foreign bodies (Table 3). Most patients presented with dysphagia (82.5%). Other clinical presentations were chest pain (49.1%), throat pain (21.1%), weight loss (5.3%) and anemia (1.8%). One patient had cervical esophagotomy and removal of a large impacted chicken bone after rigid esophagoscopy failed. One patient (1.8%) had esophageal laceration and this occurred from the impacted foreign body and not from instrumentation. There was no case of esophageal perforation or mortality recorded.

Table 1: Age Distribution of all Rigid Esophagoscopy Patients.

Age(years)	Frequency	Percentage
0-10	35	61.4
11-20	2	3.5
21-30	5	8.8
31-40	6	10.5
41-50	3	5.2
51-60	4	7.0
61-70	1	1.8
71-80	1	1.8

Table 2: Relative Frequencies of types of Foreign Bodies

Type of Foreign Body	Frequency	Percentage
Coins	28	53.8
Office pin	6	11.3
Ear rings	2	3.8
Denture	3	5.7
Meat bolus	2	3.8
Large bones (chicken+ fish)	12	22.6
<b>Total</b>	<b>53</b>	<b>100</b>

Table 3: Duration before Presentation.

Duration	Frequency	Percentage
Within 24 hours	22	41.5
Within 1 week	25	47.2
Within 2 weeks	4	7.5
Within 3 weeks	2	3.8
<b>Total</b>	<b>53</b>	<b>100</b>

## DISCUSSION

Esophagoscopy is done for therapeutic or diagnostic reasons. These reasons would include esophageal carcinoma, reflux esophagitis, strictures of various etiologies and foreign bodies<sup>15</sup>. The commonest indication is suspicion or presence of a foreign body in the esophagus<sup>10</sup>. Rigid esophagoscopy under general anesthesia was performed on all the patients reviewed in this study. Like in a previous series, foreign body in the esophageal tract was the leading indication for this procedure, others such as esophageal carcinoma and pharyngeal pouches were rare indications<sup>10</sup>. The incidence of foreign body ingestion is high in children and young adults and commonly occurs in the under ten age group. Majority of the patients in our study were under ten years of age and like previous studies, coins were the commonest<sup>5, 11, 16</sup>. This study also recorded office-pins and ear rings amongst the common foreign bodies ingested in the children reviewed. This study noted the middle third of the esophagus to be the commonest site of foreign body impaction. This is at variance with previous studies which reported the upper third of the esophagus as the commonest site of impaction<sup>5, 16-18</sup>. This could be attributed to the late presentation of these patients accounting for the migration of the foreign bodies further down the esophagus at the time of presentation with majority of patients presenting after the first twenty four hours of foreign body impaction. Esophagotomy was required to extract an impacted large chicken bone in one patient. One patient had esophageal laceration, indicating a morbidity rate of 3.5%. This still falls within acceptable limits<sup>14, 15</sup>. Perforation of the esophagus is the commonest complication of this procedure<sup>10</sup>; however there was no case of esophageal perforation or mortality recorded in this study.

This shows that rigid esophagoscopy in the hands of the initiated can be a relatively safe procedure and it is still an appropriate technique in the management of pathologies of the aerodigestive tract even when flexible esophagoscopy is not possible.

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