

## CORROSIVE OESOPHAGEAL STRICTURE: A PREVENTABLE SCOURGE.

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### SUMMARY

**Aim:** This study aims to determine the nature and circumstances surrounding the ingestion of corrosive substances that resulted in oesophageal strictures among patients attending the University of Nigeria Teaching Hospital, Enugu. This is with a view to highlighting that corrosive oesophageal stricture is preventable.

**Methodology:** A retrospective study of U.N.T.H. patients managed for corrosive oesophageal stricture between 1991 and 2001 was done using information extracted from their case records.

**Result:** Sixty-nine eligible cases were seen out of which 33 records were retrieved. All ages and sexes were involved with youths and children topping the list. Caustic soda was involved in 12 patients, 7 patients drank acid and 14 were involved with other chemicals including drugs from "chemist" shop, native medicine etc. Twenty-six (26) were accidental, 4 were suicidal attempt and 3 attributed their problem to ingestion of medication. Thirty-two (32) had gastrostomy and subsequent colon transplant to replace the oesophagus. Duration of treatment and hospital admission was 4 months on the average.

**Conclusion:** Since most cases of oesophageal stricture due to ingestion of corrosives occurred as a result of accidental ingestion, this problem and its costly consequences are preventable.

*Keywords: Corrosive Ingestion, Oesophagus, Scourge Complex, Preventable*

### INTRODUCTION

Corrosive oesophageal stricture is a serious pathological condition affecting the oesophagus in all age groups. It is a consequence of ingestion of corrosive agents such as acid and alkali that are found in different chemical formulations.<sup>1,2</sup> The ingestion of these chemicals is accidental among majority of patients but suicidal ingestion of these agents are also common. Children and the mentally deranged are more susceptible to ingestion of these chemicals.

When these chemicals are ingested, depending on the type and quantity, majority of the victims do need resuscitation with intravenous fluid and steroid.<sup>3</sup> Some will go on to develop oesophageal stricture. Once strictured, the functions of oesophagus are lost thereby leading to the problem complex which include dysphagia, starvation, drooling of saliva, regurgitation, pulmonary aspiration and others.

Without treatment death is sure.<sup>4</sup> Medical attention will include emergency gastrostomy barium swallow with possible oesophagoscopy, oesophageal dilatation and colon bypass for long segment oesophageal stricture.<sup>5-7</sup> Complications are also associated with the treatment.

This study attempts to determine the nature of corrosive agents involved in the causation of oesophageal stricture among patients presenting at the University of Nigeria Teaching hospital, UNTH, Enugu. Analysis of circumstances of the exposure to the corrosives would also help in planning preventive measures against the problem

### MATERIALS AND METHODS

A retrospective study of some patients who had corrosive oesophageal stricture and who were treated at U.N.T.H. between 1990 and 2001 was carried out. A list of eligible patients was made

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from the ward and surgical registers. With this list, the case records of the patients were traced.

From the retrieved case records were extracted information on each patient's personal data, the type of chemical ingested, diagnostic procedures carried out, therapeutic procedures, duration of treatment and other relevant information.

Analysis was by simple percentage of the total in any given situation.

## RESULT

A total of 69 cases were identified in the hospital registers. Of these, 33 (47.8%) patients' case records were traced and analyzed. These were made up of 22 males 11 females with a male: female ratio of 2:1. The ages of these patients ranged from 1 – 80 years with 12 (36.4%) being between 21 and 30 years of age.

The states of origin of the patients included all the states in the south-east geo-political zone and adjoining zones. Enugu and Anambra states topped the list (table 1).

**Table 1 State of Origin of the Patients**

State	Number	%
Enugu	7	21.2
Anambra	7	21.2
Imo	5	15.2
Abia	3	9.1
Cross River	3	9.1
Ebonyi	2	6.1
Delta	2	6.1
Akwa Ibom	1	3.0
Bayelsa	1	3.0
Rivers	1	3.0
Nassarawa	1	3.0
<b>Total</b>	<b>33</b>	<b>100.0</b>

Acid ingestion was the cause of oesophageal lesion in 7 (21.2%) patients while caustic soda was involved in 12 (36.4%) patients. The remaining 14 (42.4%) were due to other causes such as drugs from patent medicine shops, native medicines, bleach, etc.

Circumstances surrounding the ingestion of these chemicals included accidental ingestion

in 26 (78.8%); suicide attempt in 4 (12.1%) and medication in 3 (9.1%). Generally the ingestion of these corrosive chemicals led to burns of the oesophagus and subsequent stricture (figure 1).

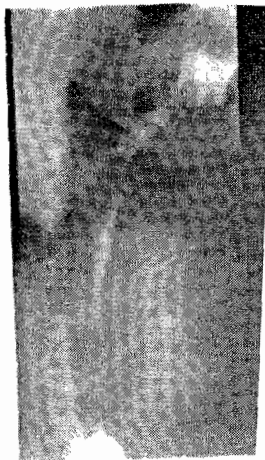


Fig 1: Barium Swallow of a victim showing stricture

Thirty-two (97%) patients had gastrostomy (figure 2) and subsequent colon -- transplant to replace the oesophagus. Among these, 3 (9.4%) had gastrojejunostomy in addition because of gastric outlet obstruction while 2 (6.3%) had laryngeal burns that led to failed endotracheal intubation during anaesthesia.

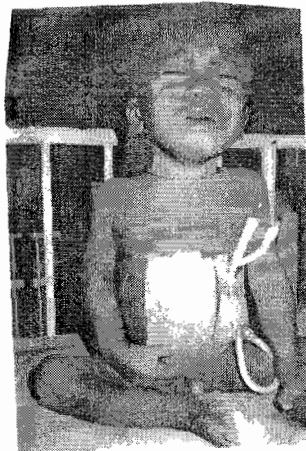


Fig 2: Victim with Gastrostomy tube

Duration of treatment and hospital admission ranged from 1 month to 12 years but 4 months on the average. Some had repeat surgery due to gangrene of transplanted colon (9.4%), neck fistula (25%), severe wound infection (9.4%) and intestinal obstruction (3.1%) due to post-surgical anastomotic stricture.

## DISCUSSION

Corrosive oesophageal stricture is a complication of oesophageal burns resulting from contact with some chemicals.<sup>1, 2</sup> In this study the chemicals included acid, caustic soda, native medication and drugs from chemist shops. Others could not be identified. The stricture is cicatrization of wound during the late phase of wound healing. Oesophagus being a tubular structure, manifests with reduced luminal radius within 3-5 weeks. Therefore any Barium swallow before this time frame can mislead.<sup>8, 9</sup>

The initial dysphagia following ingestion of corrosives is due to oedema and loss of function associated with inflammatory response to injury. The oesophagus undergoes an immediate post trauma response. Some do not develop oesophageal stricture. As UNTH Enugu is a referral centre mainly those who developed severe burns and subsequent stricture are usually admitted with cachexia, drooling of saliva and pulmonary aspiration<sup>10</sup>. These require resuscitation and emergency gastrostomy.

The youths and the children were more affected.<sup>11</sup> Accidental ingestion of the corrosive could be avoided by careful handling of the chemicals. Currently, the law on handling of chemicals is based on Torts law of negligence<sup>4,12</sup>. This is grossly inadequate in controlling the ease with which people get these chemicals.

As soon as any of these chemicals are ingested there should be no further oral feeds until the extent of injury has been ascertained. Intravenous fluid, parenteral antibiotics, analgesic and steroid should be given. Patient should be admitted and vital signs and output of saliva monitored. History of circumstance surrounding the ingestion and the quantity swallowed should be obtained. Patients with minor corrosive burns may have complete recovery while those with severe burns will develop stricture.<sup>13</sup>

Drooling of saliva, cachexia, gastrostomy, colon transplant (colon by-pass), pulmonary aspiration and their complications form the scourge complex which could be prevented by

avoiding contact with the chemical.<sup>5, 6, 14, 15</sup> History of contact has always been variable. In this study, some were accidental, and others intentional either to cure an ailment or to commit suicide.

These patients came from far and near in order to be treated. There are few centres that effectively treat this lesion in Nigeria. Their admission to the hospital run into months at a huge financial cost. Reasons for the prolonged course of treatment include, time to build up the nutritional status of the patient and raise fund for drugs and other items. Some patients need time to undergo repeat surgery as a result of complications which included gangrene of the transplanted colon and cervical fistula.<sup>7, 16</sup>

In this centre endoscopy has not been a major tool in the management of these patients. Barium swallow helps to delineate the extent of the lesion<sup>8, 9</sup>. Oesophageal dilatation does not give good results. Consequently, majority of the patients had long segment stricture that required colon transplant to replace the oesophageal function. This center has been achieving good results with colon transplant<sup>6, 7</sup>. Nevertheless, some post-operative fatality occurs. The high morbidity and mortality of both the problem and its treatment emphasizes the need for prevention<sup>17, 18</sup>.

## CONCLUSION

Most cases of corrosive ingestion occurred accidentally. A result of corrosive ingestion is mostly oesophageal stricture. This problem is preventable.

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