

Management of Gastroesophageal Reflux Disease: A Prospective Study

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Abstract

Gastroesophageal reflux disease is the commonest gastrointestinal disease which causes reflux oesophagitis and complications like ulcerations, stricture of oesophagus. Patients present with either heartburn or reflux. Current treatment would include either lifestyle changes, pharmacological therapies, surgical funduplications and endoscopic procedures. Patients who have reflux would require medical therapy, endoscopic approach or surgery. The choice of therapy depends on symptoms of the patient. This article reviews the various treatment strategies for management of GERD.

Keywords: GERD; Reflux; Regurgitation; Endoscopy.

Introduction

Gastroesophageal reflux disease currently is the commonest disease of esophagus. In the western world 30% of population suffers from GERD, caused by symptomatic and asymptomatic reflux of intestinal contents into esophagus which causes inflammation of esophageal mucosa. Gastroesophageal reflux disease is term used to describe symptoms and signs associated with reflux of gastric contents into esophagus. Philip Allison first emphasised the association between reflux esophagitis and hiatal

hernia in 1951. Nissen fundoplication and repair of lower esophageal sphincter was described by Rudolph Nissen in 1956 [1].

GERD is recognised for condition that requires chronic management strategies. Typical symptoms of GERD are heartburn and acid regurgitation and pathological findings is esophagitis. These symptoms are caused when the pressure of lower oesophageal sphincter decreases below its normal value of 10-25 mmhg. Heartburn is burning sensation behind the sternum. This burning radiates upwards increases after meals and responds to antacids.

Material and methods

We did a prospective study in our tertiary care hospital for 35 patients of GERD. In addition to heartburn and acid regurgitation reflux the typical symptoms were associated with dyspepsia, chest pain, cough, sore throat, hoarseness, asthma, pulmonary fibrosis, tracheal stenosis and laryngitis. Clinical syndromes of gastroesophageal are typical heartburn, acid-regurgitation and atypical symptoms are non-erosive reflux disease, esophagitis and strictures. Mechanism by which GERD causes cough is related to critical number and duration of reflux episodes in proximal and distal esophagus. Recently non-acid reflux is an issue and testing for non-acid reflux is in form of multichannel intraluminal impedance. Ambulatory PH is used for evaluation of GERD. Fundoplication was planned for reflux and sliding paraoesophageal hernia patients. The aim of fundoplication is reduction of hernia, patent lower oesophageal

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reflux and repair of crura. Slippage of wrap was found in 3 patients and 4 patients persisted with postoperative dysphagia.

Results

In our study majority of the patients (26) responded to medical management rest of the patients underwent surgical management in which Fundoplication was planned for reflux and sliding paraoesophageal hernia patients. The aim of fundoplication is reduction of hernia, patent lower oesophageal reflux and repair of crura. Slippage of wrap was found in 3 patients and 4 patients persisted with postoperative dysphagia.

Discussion

Population based research is needed to understand the epidemiology. Forty percent of population have intermittent episodes of heartburn. Heartburn was presenting symptom in 20% of patients and 7% had heartburn once a week. Acid regurgitation is reported by 20% of population. GERD has significant economic impact and American gastroenterological association has stated that GERD is costliest of digestive diseases [2]. Patients presenting with typical symptoms of heartburn and acid regurgitation are treated with acid inhibition. Patients should be told about lifestyle changes like not eating food within 3 hours of bedtime. They should eat frequent moderate sized meals. They need to elevate head of bed and should not take foods that precipitate reflux [3]. Obese patients who have GERD are told to reduce weight. Gastric bypass procedures are effective in alleviating reflux [4]. Cigarettes and alcohol, have been reported to contribute to GERD. Stress is suggested to cause GERD or cause symptoms [5]. Proton pump inhibitors are started with majority of patients [6]. Proton pump inhibitors are effective for healing oesophagitis and improving reflux symptoms but there is rebound acid secretion after cessation of drug [7]. Survey revealed 15-20% adults experience heartburn weekly and causes heavy economic cost of drugs to the patient [8].

Manometric testing could identify the exact location of esophageal sphincter. Manometric evaluation of esophageal peristalsis is an integral component of preoperative evaluation to differentiate gastroesophageal reflux disease from other motility disorders. At present PH study is the gold standard for diagnosis of GERD. Patients who have dysphagia need prompt endoscopy

because of risk of developing esophageal strictures. Endoscopy plays a role in patients who have refractory symptoms. Endoscopic procedures aimed at improvement of function of lower oesophageal sphincter have emerged. These procedures tighten the lower oesophageal junction by creation of plications, delivery of radiofrequency energy at cardia and injecting inert material into muscle layer.

Endoscopic gastroplication was initial endoscopic antireflux procedure which was commercially available. Endoscopic suturing devices developed and refined were Swain, Wilson-cook and full thickness plicator. Endoluminal gastroplication is useful and safe procedure for management of patients with early symptomatic GERD (greater than 3 times/week). Endoscopic suturing device is intended to create endoscopic gastroplication below and level of gastrooesophageal junction. Four to six plications are placed below and up to gastrooesophageal junction in helical pattern. Twenty four hour PH study showed improvement in several episodes below PH OF 4 at 3 and 6 months and percentage of total time PH was less than 4 at 6 months. Current endoscopic suturing involve submucosal suture placement [9].

The Stretta procedure developed by Curon medical has become a standardised method for delivery of radio frequency energy at gastrooesophageal junction. Stretta procedure delivers low power temperature controlled radio frequency energy through endoluminal catheter to muscle of gastrooesophageal junction by incorporating constant tissue temperature and results in the propagation of a circumscribed thermal lesion. Radiofrequency causes nerve ablation and collagen remodelling to augment the lower oesophageal sphincter pressure and increase gastric yield pressure [10]. The Stretta procedure consists of RF generator and single use RF energy catheters and delivers energy and is effective treatment for GERD [11].

The decision to undergo antireflux surgery or Stretta must be based on relative risks and benefits of each procedure. Endoscopic endoluminal therapy are similar to endoscopic plication and radiofrequency application to lower esophageal sphincter (LES) but diminished esophageal acid exposure lags behind [12].

Stretta endoscopic procedure reduces esophageal exposure reduces esophageal acid exposure, decreases frequency of transient lower esophageal relaxations, decreases medication use and hence improves quality of life. Normal values of total acid

contact at distal esophageal probe is <5% in upright position and < 8% in supine position. Therapy for patients for GERD is directed at correcting reflux, preventing the development of reflux induced complications [13]. Delivery of radiofrequency energy to the lower esophageal sphincter and gastric cardia inhibits transient lower esophageal sphincter relaxations and gastro-oesophageal reflux.

A study for Stretta procedure included 118 patients showed significant improvement of symptoms and reduction of proton pump inhibitors [14].

Endoscopic submucosal injections of collagen, Teflon, biocompatible biodegradable polymer ethylene vinyl alcohol have been tried with encouraging but transient results [15].

Transient lower oesophageal sphincter relaxations are important underlying pathophysiological events for GERD. These therapies reduce the occurrence of transient lower esophageal sphincter relaxations.

Goals of diagnostic evaluation are determining the gastroesophageal reflux, evaluation of the status of esophageal body and presence or absence of esophageal shortening. Endoscopy, manometry and 24 hr pH study forms the basis of evaluation of patients of GERD. Laparoscopic fundoplication is used in majority of patients unless a very large hiatal hernia greater than 6 cm is present for which an open approach is preferred. Elements of laparoscopic Nissen's fundoplication are crural dissection, circumferential dissection and mobilization of esophagus, crural closure, fundus mobilization of short gastric and creation of fundoplication by enveloping anterior and posterior wall of fundus around the lower esophagus.

Farrell published their results in 646 patients who underwent fundoplication revealed symptomatic improvement after surgery. Commonest complication of Nissen's fundoplication is herniation of fundoplication into chest [16].

A study identified 11 publications reporting on 7 trials comparing surgical (open or laparoscopic) and medical treatment of GERD. Heartburn and regurgitation were less frequent after surgery. Surgical management was better than medical management with respect to patient relevant outcomes [17].

If short esophagus is identified collis gastroplasty could be performed laparoscopically. Kleimann and Halbfass reported patients undergoing laparoscopically collis gastroplasty and procedure was effective in obtaining esophageal length and

decreasing symptoms [18].

Study was undertaken at university of Washington between 1994-2000 where 750 patients had laparoscopic antireflux surgery. Surgery was effective in controlling symptoms and reducing acid exposure. Resolution was found in 79% of patients and 94% had improvement in regurgitation. There was statistically significant decrease in Demeester score and proximal and distal esophageal acid exposure and increase in mean lower esophageal sphincter pressure after surgery [19].

Conclusion

Although proton pump inhibitors remain the cornerstone of GERD treatment, they have some limitations. Endoscopic antireflux procedures should be done in a controlled environment preferably reference centres and comparative studies of these techniques, including economic aspects are needed to determine their place. Surgery is an effective therapy for GERD and Nissen's fundoplication is procedure of choice. Laparoscopic fundoplication is indicated for severe gastroesophageal reflux disease, erosive esophagitis, stricture of oesophagus, hiatus hernia and is the gold standard for these conditions. Surgery is effective in treating respiratory symptoms of atypical GERD if patients are selected carefully using appropriate diagnostic techniques but outcomes are less predictable than those with typical GERD symptoms.

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