

**Original article**

## **Study of effectiveness of laparoscopic Nissen's fundoplication in Gastroesophageal reflux disease(GERD)**

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### **Abstract**

**Introduction:** Gastro-esophageal reflux disease (GERD) is one of the most prevalent benign disorders of the upper gastrointestinal tract and involves a wide spectrum of disorders in which the reflux of gastric content leads to troublesome symptoms and/or lesions to the oesophageal mucosa.

**Material and methods:** This study included all cases coming to Tertiary care hospital in a rural setup which are diagnosed cases of symptomatic GERD with hiatus hernia.

**Results :**  $P < .05(.001)$  shows there is significant difference between pre op and post op score by doing Wilcoxon signed rank test.

**Conclusion:** Laparoscopic Nissen's fundoplication is highly effective in the management of GERD with comparable improvement in symptomatic and objective scoring in the short term.

### **Introduction:**

Gastro-esophageal reflux disease (GERD) is one of the most prevalent benign disorders of the upper gastrointestinal tract and involves a wide spectrum of disorders in which the reflux of gastric content leads to troublesome symptoms and/or lesions to the oesophageal mucosa.<sup>1</sup>

Defined by the Montreal definition<sup>1</sup> as "a condition which develops when the reflux of the stomach content causes troublesome symptoms and/or complications". Two Key symptoms of gastro-oesophageal reflux disease are heartburn and regurgitation. Uncommon symptoms are dysphagia and extra-oesophageal symptoms (chronic cough and dental erosions). In the era of minimally invasive surgery, laparoscopic Nissen's fundoplication has become the gold standard antireflux procedure which achieved better results with shorter hospital stay , a better cosmetic result and less cost to the health care providers.<sup>2</sup> Long term relief of reflux symptoms after the procedure has been well documented in the literature in this group of patients. In this study, we evaluated the effectiveness of Laparoscopic Nissen's fundoplication in Gastro-esophageal reflux disease in our rural setup.<sup>3</sup>

### **Material and methods:**

This study included all cases coming to Tertiary care hospital in a rural setup which are diagnosed cases of symptomatic GERD with hiatus hernia.

**Inclusion criteria**

1. Laparoscopic Nissen’s fundoplication was done on 30 patients of study group. The patient or his close relatives were first briefed about laparoscopic repair and its advantages and possible complications. Only those patients underwent laparoscopic Nissen’s fundoplication who voluntarily accepted this modality of treatment.
2. The patients diagnosed to have symptomatic GERD with hiatus hernia both clinically and endoscopically.
3. Patients not responding to medical line of management.
4. Patients with chronic recurring symptoms on conservative treatment.

**Exclusion criteria**

1. Patient unfit for surgery
2. Newly diagnosed cases of GERD
3. Age less than 25 years
4. Severe cardiac, respiratory, hematologic or other diseases constituting unacceptable surgical risk.
5. Previous gastric, esophagial or antireflux surgery
6. Immunocompromised individuals.

Majority of the patients are from 30 to 50 years of age. Mean age in our study was 42.47 +/- 11.28 yrs.

**Results:**

**Table 1- EARLY POSTOPERATIVE COMPLICATIONS**

SERIAL NO	COMPLICATIONS	No of patients
1	MORTALITY	0
2	SEPTICEMIA	0
3	RESPIRATORY INFECTION	0
4	PNEUMOTHORAX	0
5	HEMATOMA	0
6	INFECTION	0

7	SEROMA FORMATION	0
8	SUBCUTANEOUS EMPHYSEMA	0

**Table 2 - LATE POST-OPERATIVE COMPLICATIONS**

COMPLICATION	No of patients
DYSPHAGIA	3
INABILITY TO BELCH	4
INABILITY TO VOMIT	0
RECURRENCE OF SYMPTOMS	0

**Table 4 - DURATION OF HOSPITAL STAY**

DURATION (IN DAYS)	No of patients
1	0
2	0
3	2(6.66%)
4	24(80%)
5	2(6.66%)
6	2(6.66%)
7	0
8-10	0
>10	0

**TABLE 5 – PATIENT SATISFACTION**

<b>VISICK SCORE</b>	<b>NO.</b>
I	22
II	8
III	0
IV	0

P<.05(.001) shows there is significant difference between pre op and post op score by doing Wilcoxon signed rank test.

**Discussion:**

The age, sex distribution, endoscopic findings on endoscopy and duration of symptoms for which patient had taken PPI is identical to the patient profile reported in other studies <sup>4,5</sup> . In our study, 85% of the patients had Savary Miller grade 2 esophagitis and 15% of the patients had Savary Miller grade 3 esophagitis, which is similar to the other studies. <sup>6,7</sup>

There was a significant improvement in the symptom score (VISICK) of all patients post-operatively, and the results were comparable to those achieved in a large number of trials <sup>8,9</sup> . There was no recurrence of symptoms at twelve weeks of follow-up . Mean Endoscopic grading improved significantly in all patients postoperatively. Mean endoscopic grading preoperatively was 2.73 which reduced postoperatively to 1.13. In our study, two stitches were taken to repair hiatus depending on the size of the hiatus. In regard to operating technique, it is similar or comparative to the operative technique described in the literature <sup>6</sup> . However, we did not use a bougie , because we believe that floppiness of the Nissen wrap could be well appreciated laparoscopically and at no point the need of bougie was felt to size the wrap. The study also demonstrates that in all the patients , the short gastric were divided and gastrosplenic ligament divided. An adequate mobilisation could be achieved dividing the short gastric. At no place, an attempt was made to compromise mobilisation by not dividing the short gastric vessel. Two studies have also shown that the routine division of short gastric yields clinical advantages in short- or long-term follow-up. <sup>10</sup>

Early post-operative transient dysphagia, that improves with time has been noted in case of laparoscopic Nissen fundoplication in other studies also <sup>11</sup> . We strongly believe that post-operative dysphagia and patient satisfaction rate may not be entirely dependent on the technique performed and may be improved by careful selection of patients, patient counselling and a sound surgical technique. We believe dysphagia is usually subjective postoperatively due to change in the physiology at hiatus which recovered with due course of time without any specific treatment. We also believe that post-operative dysphagia may occur due to over tightening of the hiatus as already been suggested by other studies also. <sup>13</sup>

**Conclusion:**

Laparoscopic Nissen's fundoplication is highly effective in the management of GERD with comparable improvement in symptomatic and objective scoring in the short term.

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