

**Title:**

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## Nissen fundoplication in patients with gastroesophageal reflux disease and ineffective esophageal motility

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### **Conflict of interest:**

The authors declare no conflict of interest.

Dear editor,

In patients with gastroesophageal reflux disease (GERD) and ineffective esophageal motility (IEM) who have surgical indication, there is controversy regarding the fundoplication to be performed, since Nissen fundoplication (NF) could increase the risk of postoperative dysphagia <sup>(1)</sup>. Furthermore, studies that have evaluated NF for the treatment of GERD in patients with IEM are scarce <sup>(1-3)</sup>. The aim of this study is to analyze the results of NF in patients with GERD and IEM.

Retrospective study whose study population consisted of patients with GERD and IEM who underwent NF between 2017 and 2023. Patients younger than 18 years, with paraesophageal hernias (II-IV), reinterventions and those with a follow-up of less than one year are excluded.

There were no complications (infection, bleeding or perforation), reinterventions or readmissions during the first 30 postoperative days. Moreover, 22,2% (n=6) had self-limited dysphagia that resolved in less than 3 months and 14,8% (n=4) had gas-bloat syndrome that resolved in the first 6 months.

However, after 6 months, 18,5% (n=5) of the patients presented some degree of dysphagia, whose causes were: hiatal hernia in 3 cases, stenosis of the NF in one case and functional in another case. NF stenosis was resolved with endoscopic dilatations.

After a mean follow-up of  $53,1 \pm 22,8$  months, 22,2% (n=6) presented recurrence of GERD: in 3 patients due to hiatal hernia, in one due to disruption of the fundoplication and in the remaining two without morphological cause.

Patients without IEM who have undergone NF have a 4,1% acute complication rate in the first 30 days (infection 1,1%, bleeding 0,9% and esophageal perforation 0,9%).

Acute dysphagia, which affects approximately 50% of patients, usually resolves in the first 3 months postoperatively and gas bloat syndrome occurs in 10-32%. In addition, structural complications can be due to fundoplication failure (disruption, slippage or paraesophageal hernia) in 2-23% or fundoplication stenosis in 10% <sup>(4)</sup>. On the other hand, the recurrence rate of GERD is 17,7%, and can reach up to 43% <sup>(5)</sup>.

In conclusion, NF is safe and feasible for the treatment of GERD in patients with IEM.

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**Table 1.** Characteristics of patients with gastroesophageal reflux disease and ineffective esophageal motility who underwent Nissen fundoplication.

|   | <i>n</i> = 27  |
|---|----------------|
| Mean <b>age</b> (years $\pm$ SD)                              | 49,6 $\pm$ 4,4 |
| <b>Gender:</b>  |                |
| Female  | 40,7% (n=11)   |
| Male  | 59,3% (n=16)   |
| Mean <b>body mass index</b> (kg/m <sup>2</sup> $\pm$ SD)      | 28,7 $\pm$ 4   |
| <b>Symptomatology:</b>  |                |
| Pirosis   | 100% (n=27)    |
| Regurgitation   | 63% (n=17)     |
| Atypical symptoms   | 55,6% (n=15)   |
| Dysphagia   | 22,2% (n=6)    |
| <b>Upper gastrointestinal endoscopy:</b>                      |                |
| Without esofagitis  | 44,4% (n=12)   |
| Los Angeles grade A esofagitis                                | 18,5% (n=5)    |
| Los Angeles grade B esofagitis                                | 11,1% (n=3)    |
| Los Angeles grade C esofagitis                                | 7,4% (n=2)     |
| Los Angeles grade D esofagitis                                | 3,7 % (n=1)    |
| Barrett's Esophagus   | 14,8% (n=4)    |
| <b>Classification of the ineffective esophageal motility:</b> |                |
| Chicago 3.0.  | 51,9% (n=14)   |
| Chicago 4.0.  | 48,1% (n=13)   |
| <b>Surgical indication:</b>                                   |                |
| No response to medical treatment                              | 96,3% (n=26)   |

|  |               |
|--|---------------|
| Non-compliance with medical treatment        | 3,7% (n=1)    |
| Mean <b>surgical time</b> (minutes $\pm$ SD) | 95 $\pm$ 26,3 |
| Mean <b>length of stay</b> (days $\pm$ SD)   | 2,1 $\pm$ 1   |