



ORIGINAL ARTICLE

Management of gastroesophageal reflux in children. Single centre experience in conventional and laparoscopic Nissen fundoplication in the last 15 years^{☆,☆☆}



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KEYWORDS

Nissen fundoplication;
Gastroesophageal reflux;
Hiatal hernia;
Acute life-threatening event

Abstract

Introduction: Nissen fundoplication (NF) is the most used and effective technique for the treatment of gastroesophageal reflux in children. The laparoscopic approach (LNF) is safe, with low morbidity and high success rate, although some cases require a conventional approach (CNF). The aim of the study is to compare the results between LNF and CNF in our centre.

Material and methods: A retrospective review was performed on patients <14 years after NF between 2000 and 2015. A comparison was made of the complications, hospital stay, and follow-up for both approaches.

Results: Of the total 75 NF performed, 49 (65.3%) were LNF, 23 (30.7%) CNF, and 3 (4.0%) reconversions. Concomitant laparoscopic gastrostomy was performed in 10.7%, and open gastrostomy in 5.3% of cases. Prior to NF, 10.7% had a gastrostomy. The mean age was 4 years and 68.7% were male. Of the diagnoses, 36% had encephalopathy, 14.7% hiatal hernia, 5.4% oesophageal atresia, and 5.4% an acute life-threatening event. No differences were found in operation time. More than two-thirds (36%) had complications, which were more frequent in the CNF (OR = 3.30, 95% CI: 1.1–9.6). The hospital-stay decreased by 9 days in the LNF (95% CI: 5.5–13.5). Mean follow-up was 26 months (95% CI: 20.9–31.6). Mortality during follow-up was of 5.3% (5 respiratory failure, 1 sudden cardiac death, and 2 due to complications of the encephalopathy), 4.2% required re-fundoplication, 15.8% had symptomatic improvement, and 64.0% had absence of symptoms.

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PALABRAS CLAVE

Funduplicatura de Nissen;
Reflujo gastroesofágico;
Hernia de hiato;
Episodio aparentemente letal

Conclusions: The LNF is an effective technique for the treatment of gastroesophageal reflux, with lower morbidity and shorter hospital stay than CNF. It is recommended as the first surgical option.

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Manejo del reflujo gastroesofágico en niños. Funduplicatura de Nissen convencional y por laparoscopia en los últimos 15 años en un centro especializado

Resumen

Introducción: La funduplicatura de Nissen (FN) es la técnica más utilizada y con mejores resultados para tratar el reflujo gastroesofágico en niños. El abordaje laparoscópico (FNL) es seguro, con baja morbilidad y alta tasa de éxito, aunque algunos casos precisan abordaje convencional (FNC) o abierto. Nuestro objetivo es comparar los resultados entre la FNC y la FNL en nuestro centro.

Material y métodos: Estudio retrospectivo de los pacientes <14 años sometidos a FN entre 2000 y 2015. Comparamos ambos abordajes: complicaciones, estancia hospitalaria y seguimiento.

Resultados: Se realizaron 75 FN; 49 (65,3%) FNL, 23 (30,7%) FNC y 3 (4,0%) reconversiones. Se asoció gastrostomía por laparoscopia en el 10,7% y abierta en el 5,3%. El 10,7% portaban gastrostomía previamente a la FN. La edad media fue de 4 años, y el 68,7% fueron varones. El 36% presentaron algún grado de encefalopatía, el 14,7% hernia hiatal, el 5,4% antecedente de atresia esofágica intervenida y el 5,4% al menos un episodio aparentemente letal. No encontramos diferencias significativas en la duración de la intervención entre ambos abordajes. El 36% presentaron complicaciones, más frecuente en la FNC: OR = 3,30 (IC 95%: 1,1-9,6). La estancia disminuyó en 9 días en la FNL (IC 95%: 5,5-13,5). El seguimiento medio fue de 26 meses (IC 95%: 20,9-31,6), con 10,7% fallecimientos (5 insuficiencias respiratorias, una muerte súbita y 2 por su encefalopatía); el 4,2% precisaron nueva funduplicatura, el 15,8% mostraron mejoría sintomática y el 64,0%, ausencia de síntomas.

Conclusiones: La FNL es una técnica adecuada para el tratamiento del reflujo gastroesofágico, con menor morbilidad y menor estancia que la FNC, por lo que se recomienda como primera opción terapéutica.

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Introduction

Nissen fundoplication (NF) is the most commonly performed surgical procedure for the treatment of gastroesophageal reflux disease (GERD) in children. The laparoscopic approach (LNF) is an effective and safe technique for the treatment of GERD and is currently considered the gold standard. In most cases, a laparoscopic approach is feasible and is considered the treatment of choice, although there are specific cases that require an open or conventional Nissen fundoplication (CNF). Both approaches have good outcomes, improving quality of life and symptom control. Our objective was to compare the results obtained with both techniques in our hospital.

Materials and methods

Retrospective review of the electronic health records of 75 patients, all aged less than 14 years, that underwent NF consecutively in our hospital between February 2000 and January 2015. Conventional NF was performed following

customary procedure or under the supervision of three surgeons, and LNF was performed by or under the supervision of a surgeon. The first and second assistants in either approach could be a paediatric surgeon or a fifth-year paediatric surgery resident.

The variables under study were sex, age, diagnosis, surgical history, preoperative symptoms, imaging and laboratory tests, surgical approach, surgery duration, complications of surgery, length of stay, followup, outcome of surgery, reoperation and mortality.

Later on, we performed an analysis of subsets by surgical approach (LNF and CNF), age group (<2 and ≥2 years) and presence or absence of neurologic impairment. We compared durations of surgery, intraoperative and postoperative complications, length of stay and outcomes of the procedure during followup.

Results

Surgery was performed in a total of 51 (68.0%) boys and 24 (32.0%) girls aged 1 month to 14 years, with a mean age of

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