FUNDOPLICATION and GASTROSTOMY in NEUROLOGICALLY IMPAIRED CHILDREN:

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Abstract

We report our experience with 90 neurologically impaired children treated with gastrostomy and Nissen fundoplication. Malnutrition was the main problem, followed by aspiration, recurrent pneumonia, and vomiting. The symptomatology was caused by swallowing incoordination and gastroesophageal reflux.

The diagnosis of gastroesophageal reflux was confirmed by upper gastrointestinal series and pH probe. Nissen fundoplication was performed following a standard technique with preservation of the vagus nerves and its branches, repair of the diaphragmatic crura, reconstruction of the angle of His, and a 360 degree wrap. A gastrostomy and pyloroplasty or pyloric dilatation were part of the operative procedure. There were no deaths and few complications related to the surgical procedure. Marked nutritional improvement was seen in most cases with an average weight gain of 3.2 kg/patient 3 months following surgery.

There was also improvement in milestones and seizure control. The majority of parents were very satisfied and would recommend the procedure to other parents with similar problem Children with neurological impairment (NI) and swallowing incoordination seem to be in need for gastrostomy feeding. Because gastrostomy can cause or increase gastroesophageal reflux, an antireflux procedure has been advocated at the time of gastrostomy placement in neurologically impaired children, in terms of fundoplication.

The purpose of this study is to evaluate clinical impression and risk-benefit ratio of fundoplication and gastrostomy tube placement in patients with cerebral palsy, birth asphyxia, brain tumors, HIE, Dandy-Walker syndrome and etc.

It was observed wrap herniation, wrap slippage down to the stomach, and partial wrap disruption. As well as ALTE occurrence and frequent hospital admissions due to chest infections even after surgery were evaluated.

Risks of gastrostomy, particularly in relation to surgical complications - leakage, granuloma, high residual, ileus have been described.

A retrospective study data was entered and analyzed through statistical package SPSS version 22 conducted to identify inpatient hospitalizations for gastrostomy placements for the treatment of gastro esophageal reflux disease, feeding intolerance and swallowing disorder (2007–2016) at single institution.

The outcomes evaluated using ANOVA test comparing the indications for the procedure, concomitant diseases and postoperative complications associated with both techniques. Because ANOVA is a data set that evaluates the mean significant difference between operative methods and other study parameters, a single-institution retrospective study was conducted in which each technique compared to the other during the same period.

Has been evaluated 180 patients with gastrostomy tube placement (94 open versus 86 laparoscopic), 44 with concomitant fundoplication and with 3 different types of gastrostomy tubes used during the procedures. There were differences in gender (male to female 1:2), but not in age distribution, or comorbidity between the two groups. Gastrostomies were inserted open 68 (72.3%) versus laparoscopic 71 (82.6%) in neurologically impaired patients.

Gastroesophageal reflux disease (GERD) is a very common problem in infants and children with severe neurological impairment (NI). The prevalence of GER in this population of patients is reported to be between 33 and 75%. This group of patients includes 44–67% of patients undergoing antireflux surgery. This high rate of GERD is because of a combination of poor esophageal and gastric motility (due to vagal nerve dysfunction), chronic supine positioning, abdominal spasticity, diaphragmatic flaccidity, scoliosis, retching, and increased use of gastrostomy for feeding. Medical treatment is often ineffective, and surgical fundoplication may be necessary to control symptoms. In addition to GER, many other deleterious mechanisms contribute to the feeding and respiratory problems in these patients like abnormalities in lower esophageal function, delayed gastric emptying; and antroduodenal dysmotility.

The diagnostic tools routinely used for GERD do not identify these abnormalities correctly. Careful observation of clinical symptoms or other investigative methods, such as antroduodenal manometry or transit time measurement, may be necessary to detect these underlying gastrointestinal motor problems in handicapped children. Morton et al. reported that oral and pharyngeal motor problems are the major causes of respiratory tract infection in children with severe neurodisability, leading to direct aspiration.

Excellent results are obtainable with conventional antireflux surgery as long as it effectively eliminates reflux; but post fundoplication failure rate in children with NI reaches up to 71% within 1 year of conventional antireflux surgery. Nissen fundoplication (NF) is the most commonly performed antireflux procedure, and experience with other antireflux procedures is limited in neonates and infants having this problem, although the data available seem to confirm that Thal fundoplication (TF).

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