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Profile of 151 Patients Undergoing Open Gastrostomy an a Cancer Hospital

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Abstract

The gastrostomy is a procedure that aims to ensure a feeding pathway for patients who are unable to maintain adequate long term oral intake. Currently there are described the classical open technique and minimally invasive techniques, such as percutaneous endoscopic and percutaneous fluoroscopic gastrostomy, each one with its profile of indications and complications.

Here we present a retrospective, nonrandomized review of medical records of 151 patients who underwent open gastrostomy, the surgical complications resulting from the procedure (29.1%), the need of visits to the emergency care unit (53.6%), hospital readmissions (16.5%) and deaths (1.5%) in the period of 2011 to 2015.

Despite the high frequency of complications of the classical technique and the development of minimally invasive techniques, open gastrostomy continues to have its indications according to the patient's clinical conditions and resources of the health service.

Keywords

Gastrostomy, General surgery, Postoperative complications, Health resources

Introduction

The gastrostomy is one of the oldest surgical procedures performed since the early nineteenth century. Its main objective is to provide a nutritional pathway for patients who are unable to maintain adequate long term oral intake. Many surgical techniques have been described and used, consequently, the open surgery is progressively losing space for minimally invasive techniques [1].

The literature currently describes three techniques: percutaneous fluoroscopic gastrostomy (PFG), percutaneous endoscopic gastrostomy (PEG) and surgical gastrostomy, which may be performed via laparotomy or laparoscopy [2].

Although PEG is already known to be safer [3], the surgical gastrostomy is an option in the following situations: the patient will already need a laparotomy for another reason; impossibility to carry out gastroscopy; technical failure of PEG or PFG; unavailability of resources to perform PEG or PFG; difficult to introduce nasoenteral tubes caused by underlying disease or prolonged use of nasoenteral tubes causing complications [4].

Despite being a simple surgical procedure, open gastrostomy is associated with a high frequency of complications, such as surgical site infections, gastric bleeding, skin erosion due to peri-tube leakage and abdominal wall pain at site of insertion of the tube [3].

The surgical gastrostomy is still widely used in many hospitals as a result of the lack of human and material resources required to perform the minimally invasive methods. This study is a review of surgical gastrostomy performed in patients admitted to a large cancer hospital, considering the profile of the patients, the procedure indications, complications and outcomes. It aims to show how the open technique can still be widely used, especially in public health services with limited resources, since most of its complications are minor and can be easily managed in the emergency room [5].

Methods

This is a retrospective, nonrandomized review of medical records of patients who underwent open gastrostomy using Stamm technique in the period of 2011 to 2015 in a large cancer hospital [4]. No PEG or PFG was performed in the same period. Data analyzed includes gender, age, American Society of Anesthesiologists (ASA) surgical risk classification, comorbidities profile, preoperative diagnosis, average length of stay, postoperative complications, visits to emergency room and need of rehospitalization. The study was approved by our institution ethics and research committee.

Results

The total number of patients included in the study was 151. Men constituted 82.12% (124) of patients and women 17.88% (27). Analysing age, 4% were younger than 40 years, 45% were between 40 and 60 years and 51% were 61 years or older. Regarding the

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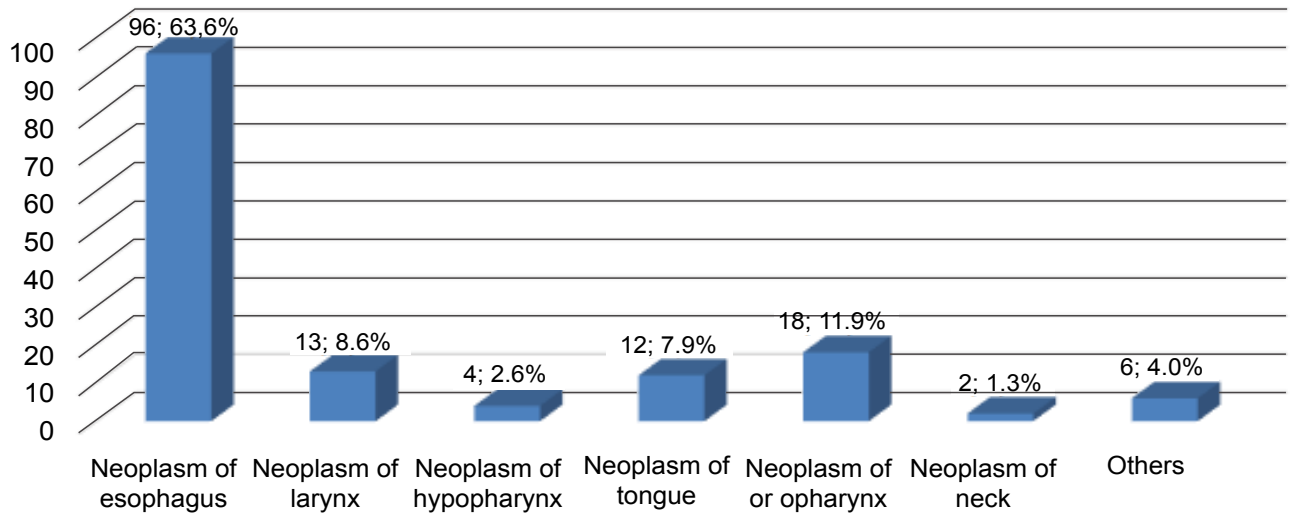

Figure 1: Diagnosis.

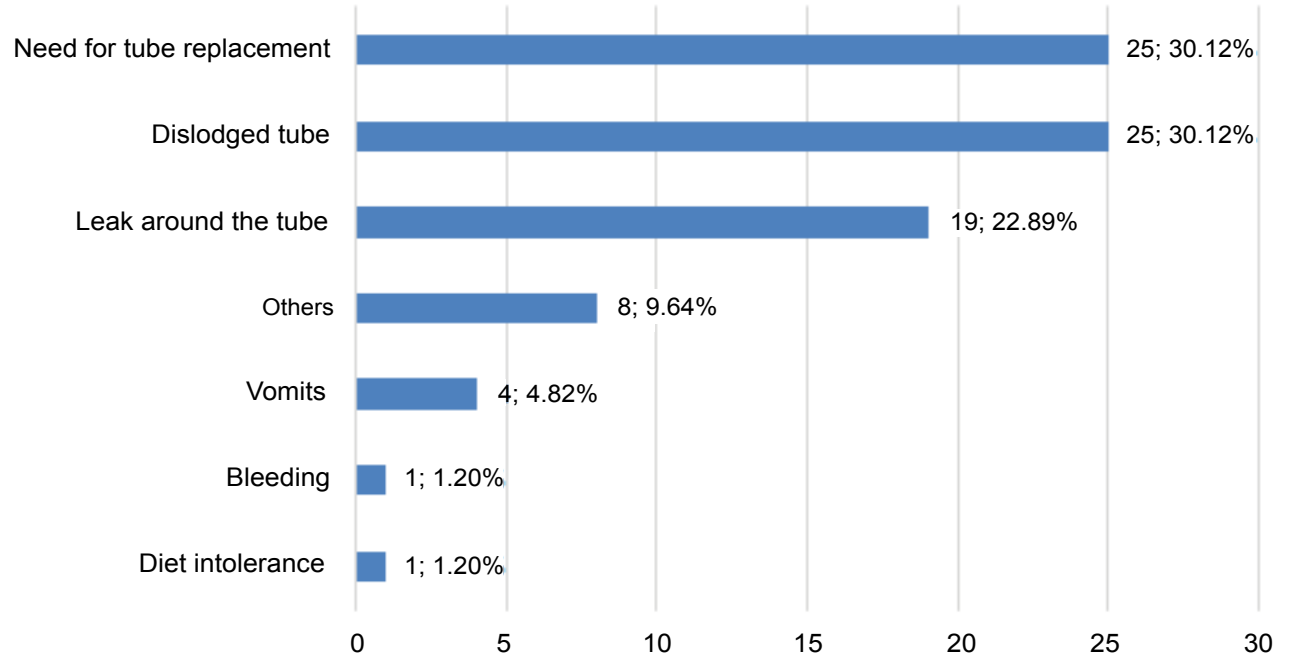

Figure 2: Events that motivated the visit do emergency care.

classification of surgical risk, using the ASA score, 0.7% was classified as ASA I, 84.8% as ASA II and 14.5% as ASA III. Of all patients, 28.5% had no comorbidities, and, among the most prevalent comorbidities, 10.6% suffered from hypertension, 4.6% were smokers (current smokers) and 2.6% had chronic obstructive pulmonary disease. The preoperative diagnosis was esophageal tumor in 63.7% of patients, head and neck tumors in 32.3% and others in 4% (Figure 1).

The average length of stay in the hospital for the procedure was five days. There were complications in the immediate postoperative period in 29.1% of cases, and, among the most prevalent complications, it was found vomiting (4%), bleeding (2%), tube displacement (2%), peri-tube leakage (1.3%), need of tube replacement (1.3%), intolerance to enteral diet (0.7%) and other not listed complications in 18.5% of patients. In 53.6% of cases, patients had to return to the emergency room after surgery, and the average was one visit and 37 days after hospital discharge.

The most common reasons that led patients to the emergency room were the the tube displacement and need of replacement (30.12%), peri-tube leakage (22.89%), vomiting (4.82%), intolerance to enteral diet (1.2%), bleeding (1.2%) and other (9.64%). Rehospitalization was required in 16.6% of patients and one patient died after gastrostomy (Figure 2).

Discussion

Among the limiting factors for the use of minimally invasive techniques to perform a gastrostomy, is the availability of required human and material resources. At our institution we are not able to perform PEG nor PFG and this is often the reality in brazilian public health system. The high cost associated with endoscopic or laparoscopic techniques can be seen as an obstacle, although the open surgery is associated with a higher percentage of complications and this can lead to extra post-operative expenses related to hospital length of stay, visits to emergency room and readmissions [6,7].

The data regarding the preoperative diagnosis of patients should also be taken into consideration when analyzing the results. It is observed that 63.6% of patients suffered from esophageal tumor. This underlying condition often precludes the execution of PEG, since this technique depends on the passage of the endoscope through the esophagus to access the stomach [8].

Other important factors to consider are the high rates of return to emergency care (53.6%) and hospital readmissions (16.6%) after surgery. Although the open gastrostomy is related to more frequent postoperative complications, the complications that most motivated the visit to the emergency room were displacement of the tube, in 30.12% of cases, and peri-tube leakage, in 22.89% of cases. These complications probably could be minimized with the use of more adequate material - the tube available and used during the period of study was a 22 French Foley catheter. The prolonged average hospitalization time for the procedure (5 days) can be explained by the fact that often the patients undergoing gastrostomy in our service are evaluated for the first time in outpatient clinics in poor conditions, with long-term dysphagia, meaningful weight loss and dehydration. Thus, they are admitted to the hospital for intravenous hydration, preoperative preparation and scheduling the surgery [9-11].

Conclusion

Despite the gradual replacement of open surgical techniques for the minimally invasive ones, many gastrostomies still being done by open surgery. The assessment of alternatives should consider the costs and associated morbidity, not ignoring the limitations of each method and each service, and trying to optimize the techniques according to the resources available.

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