

EXPERIENCES WITH PERCUTANEOUS ENDOSCOPIC GASTROSTOMY IN A GENERAL SURGERY CLINIC

BİR GENEL CERRAHİ KLİNİĞİNDE PERKÜTAN ENDOSKOPİK GASTROSTOMİ DENEYİMLERİ

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Öz

Amaç

Çalışmamızda perkutan endoskopik gastrostomi uyguladığımız hastaların retrospektif bakışında bulduğumuz sonuçları ve edindiğimiz tecrübeleri sunmayı amaçladık.

Gereç ve Yöntem

01 Ocak 2008-31 Aralık 2017 tarihleri arasında Afyonkarahisar Sağlık Bilimleri Üniversitesi Tıp Fakültesi Genel Cerrahi Kliniği Endoskopi Ünitesinde ve hasta yatağı başında perkutan endoskopik gastrostomi tüpü takılan 378 hasta çalışmaya alındı. Hasta kayıtları dosya tarama yöntemiyle incelendi. Kayıtlar demografik bilgiler, teknik bilgiler, endikasyon, komplikasyon ve sonuçlar açısından değerlendirildi.

Bulgular

PEG kateteri takılan toplam 378 hastanın 230'u (%60,9) erkek, 148'i (%39,1) ise kadındı. Tüm hastaların ortalama yaşı 73,4±2 (20-93) idi. Hastaların 244'ünde (%64,5) nörolojik nedenlere bağlı yutma bozukluğu mevcut iken 98'inde (%26) ise mekanik nedenlere bağlı yutma bozukluğu sebebiyle PEG işlemi uygulanmıştı. 36 hastada (%9,5) ise cerrahi nedenlerle diversiyon için PEG kateteri açılmıştır. İşlem sonrası hiçbir hastada işlem nedeni mortalite veya major komplikasyon gözlenmedi. Gastrostomi kateterinin

tespit edildiği seviyeye göre ciltaltı yağ dokusu fazla olan hastalarda yara yeri enfeksiyonu oranı anlamlı olarak fazla tespit edildi. Komplikasyon gelişme riski altmış yaş üstünde hastalarda daha yüksek saptandı ($p=0,038$).

Sonuç

Bir genel cerrahi kliniğinde peg kateteri takılması işlemi cerrahi veya medikal hastalıkları bulunan hastalara literatürdeki komplikasyon ve başarı oranları ile uyumlu olarak uygulanmaktadır.

Anahtar Kelimeler: Perkutan endoskopik gastrostomi, gastrostomi, disfaji

Abstract

Objective

In our study, we aimed to present the results of our experiences and the results we detected in the retrospective examination of patients undergoing percutaneous endoscopic gastrostomy.

Material and Method

378 patients in whom percutaneous endoscopic gastrostomy tube were placed at the patient's bedside in Afyon Kocatepe University of Health Sciences, Faculty of Medicine, Department of General Surgery Endoscopy Unit between January 1, 2008 and De-

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ember 31, 2017 were included in the study. Patient records were examined by the file scanning methods. The records were evaluated in terms of demographic information, technical information, indications, complications and results.

Results

Of a total of 378 patients in whom PEG catheter was placed, 230 (60.9%) were male and 148 (39.1%) were female. The mean age of all patients was 73.4 ± 2 (20-93). While 244 (64.5%) of the patients had swallowing disorder due to neurological causes, PEG procedure was performed in 98 (26%) due to swallowing disorder caused by mechanical reasons. In 36 patients (9.5%) PEG catheter was opened for diversion due to surgical reasons. No procedure-related mortality or

major complication was observed in any patient after the procedure. The rate of wound infection was determined to be significantly higher in patients with high subcutaneous adipose tissue when compared to the level at which the gastrostomy catheter was detected. The risk of complication development was detected higher in patients over the age of sixty ($p = 0.038$).

Conclusion

In a general surgical clinic, peg catheter placement procedure is performed in patients with surgical or medical diseases in accordance with the complication and success rates in the literature.

Keywords: Percutaneous endoscopic gastrostomy, gastrostomy, dysphagia

Introduction

It is known that nutritional status causes damage to the healing process with the formation of postoperative complications in surgical patients, and causes an increase in health care costs and infections in patients undergoing medical treatment(1,2,3). Enteral nutrition is also important for the maintenance of the barrier functions of the gastrointestinal mucosa and intestinal immune response and also for the continuation of the flora (4,5). The placement of the gastrostomy tube aided by percutaneous endoscopy was first performed in the pediatric patient group by Ponsky and Gauderer in 1980 (6). In comparison to the gastrostomies opened by surgical methods, percutaneous endoscopic gastrostomies are performed as gold standard today for the continuation of enteral nutrition due to the fact that their method is more simple, comfortable and with a low complication rate. To be performed especially by using local anaesthetics without requiring general anesthesia provides a significant advantage over open gastrostomy methods. PEG indications include dysphagia caused by neurological diseases, long-term coma, and though rare, mechanical obstruction of the lingual, laryngopharyngeal and esophageal regions. In diseases progressing with mechanical obstruction, since the obstruction does not generally preclude the need to open gastrostomy without fully preventing food intake, endoscopic procedures in this last patient group may fail due to the fact that the scope cannot pass into the distal in general. Open gastrostomies may have to be performed in this patient group. In addition, gastrostomy is also opened for diversion purposes for duodenal injuries, esophageal injuries and anastomosis safety. In this study, we

aimed to present our experiences and the data we obtained from the PEG procedures performed by our clinic.

Material And Method

378 patients in whom percutaneous endoscopic gastrostomy tube were placed at the patient's bedside in Afyon Kocatepe University of Health Sciences, Faculty of Medicine, Department of General Surgery Endoscopy Unit between January 1, 2008 and December 31, 2017 were included in the study. Patient information recorded after the procedure and complications caused by gastrostomy catheter insertion during the first 1-month period were examined.

Application Technique

All PEG procedures were performed by using the pull method with oxygen support and monitorization under the supervision of anesthesiologists in our endoscopy unit or in intensive care unit following 8-hour hunger. Local anesthesia (prilocaine hydrochloride) and sedation (midazolam 0.05 mg / kg) were applied to all patients before the procedure. Prophylactic antibiotic was not administered to the patients. Preoperative enema was applied to immobilized patients with distention to protect the transverse colon. Esophageal gastro duodenoscopy procedure was performed using fiber endoscopy. In the upper gastrointestinal system up to the second part of the duodenum which can be seen in endoscopy, whether there was any pathology to prevent PEG was evaluated. Sterilization and local analgesia of the area to be treated for the catheter before the procedure were provided. After adequate translumination was achieved by gastros-

copy or the puncture site was determined by finger fluctuation, the guide wire was sent to the stomach and the gastrostomy tube was pulled out of the mouth with the help of the snare and sent to the stomach. 18-20 French PEG sets were used for the procedure. The fact that the PEG tube corresponded to which cm level from the skin after it was positioned by pulling freely enough to turn itself around and to be placed on the abdominal wall was written to the endoscopy note. The clinic at which the patient was hospitalized and patient relatives were routinely informed about the level. After checking for bleeding, the procedure was terminated. Water leakage test was not performed.

Statistical Analysis

Data were analysed using SPSS 11.0 for the Windows operating system. Results were expressed as mean \pm SD. For the parametric and nonparametric evaluation, the Chi-square and Man-Whitney U tests were used. A P-value less than 0.05 was considered to be significant.

Results

Of a total of 378 patients in whom PEG catheter was placed, 230 (60.9%) were male and 148 (39.1%) were female. The mean age of all patients was 73.4 ± 2 (20-93). These demographic data of the patients were given in Table 1. The patients were followed up according to the hospitalization data and the hospitalization time of the patient followed up for the shortest period of time was 10 days. The mean follow-up period was calculated as 22.5 days. Eighteen of the patients (4.7%) died during their hospitalization period. While 244 (64.5%) of the patients had swallowing disorder due to neurological causes, PEG procedure was performed in 98 (26%) due to swallowing disorder caused by mechanical reasons. In 36 patients (9.5%), PEG catheter was opened for diversion due to surgical re-

asons (Figure 1). The peg catheter of 14 of these patients (3.7%) was removed endoscopically in the following period due to the fact that swallowing function as achieved. Sixteen (4.2%) of the procedures were applied in intensive care units because the patients were intubated and at high risk. Systemic additional diseases in patients were grouped under 4 groups. 162 (42.8%) patients had more than 2 additional systemic diseases. Detailed information on additional diseases was given in Figure 2. No procedure-related mortality or major complication was observed in any patient after the procedure. The observed minor complications were presented in Table 2. Minimal bleeding occurred in 8 patients (2.1%). These patients were treated with PEG catheter with cold water irrigation and pressure dressing. In 22 patients (5.8%), leakage from the edge of the tube was detected following the initiation of food intake through the tube. It was observed that 4 of these leakages occurred due to the fact that the tube was left in the subcutaneous tissue during the possible patient transport. In the other 18 cases (4.8%), the level of the tube was noticed to be shifted and brought back to its former level. In our 32 patients (8.46%), wound infection developed and it was observed that all the tubes were at the level of 4 cm and above, except for 2, when these patients were compared in terms of the tube detection level, namely, the thickness of the adipose tissue indirectly. In addition, it was determined that patients who developed wound infection had a higher rate of 16% in patients with peg catheter opened for diversion. The wound infection having developed in all patients decreased by antibiotic treatment and dressings. One patient had to be intubated due to respiratory depression due to anesthesia and was extubated on the 1st postoperative day. The risk of complication development was observed to be higher in patients over sixty years of age and the difference was determined statistically significant ($p = 0.038$).

Table 1 Demographic information

Age	n	%
<60	21	11,1
60-80	101	53,4
>80	67	35,4
Gender		
Male	115	60,9
Female	74	39,1

Table 2 Complications

	n	%
Wound infection	16	8,4
Leakage from the edge of the catheter	11	5,8
Bleeding	4	2,1
Respiratory depression	1	0,3

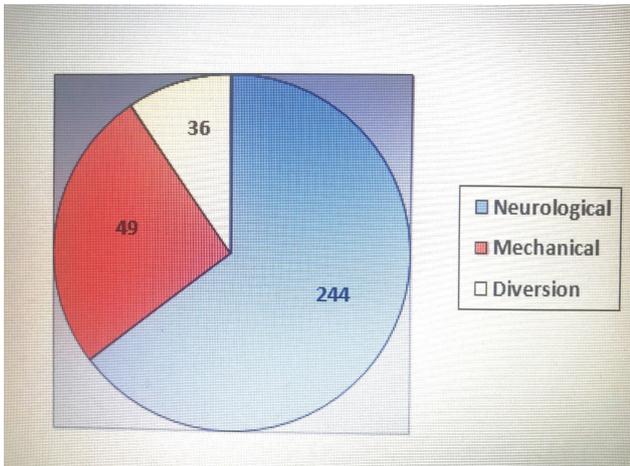


Figure 1. Indications

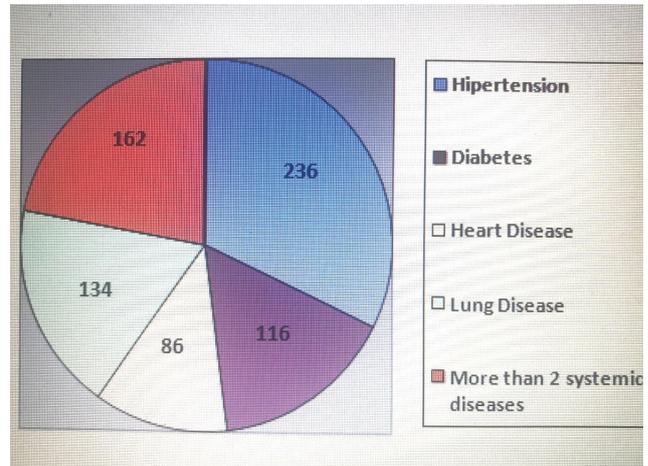


Figure 2. Additional diseases

Discussion

Gastrostomy is performed due to life expectancy in patients who cannot meet the need for oral enteral nutrition for a long period (4-6 weeks) (7,8,9). In this method, a low success rate of up to 76% has been reported due to reasons such as whether the upper gastrointestinal system is open for the procedure to be performed and the transillumination of the scope light is insufficient (10). The two most commonly used methods in peg catheter placement have been described in the literature as pull and push. In a retrospective analysis comparing these techniques, the short-term minor complications with 46% in push technique have been indicated as 12% in pull technique and no difference has been determined in the long-term major complications(11). Nowadays, the most well-known and widely used is a pull method. All peg catheter insertion procedures in our study have been performed by this method. In our study, the fact that the total of the short-term complications as 16% corresponds closely to the ratio in this study. In a retrospective study of 642 diseases, the rate of wound infection has been

reported to be 3.5% (12). In this study, the fact that the rate of 8,4% in our study is higher than that of our study has been interpreted in that this study has been conducted by an gastroenterology clinic. We believe that our rate which is higher than wound infection rates reported in the literature is due to the patients in whom peg catheter has been opened for surgical diversion in our clinic. Of the 18 patients in whom peg catheter has been opened for diversion, 3 are observed to have wound infection and this rate corresponds to a high rate of 16%. Besides, we believe that the fact that the mean age in this study is 64.2 years and the patients in our study consist of an older group (73.4) is also effective. Also in our study supporting this view, it is observed that the complication rate has increased significantly in patients over 60 years of age (p = 0.038). In a series of 113 diseases, the minor complication rate has been determined to be higher after peg catheter placement in patients over 60 years of age(13). In addition, it has been observed that how much high level of the tube detection noted in the reports of peg placement procedure is significantly correlated with wound infection. The fact that this condition may be due to the severe wound infec-

tion in persons with subcutaneous adipose tissue has been evaluated. It is known that leakages from the edge of the gastrostomy tube are an important problem that disrupts the comfort of patients, and these leakages are likely to cause wound infection. In our study, it is observed that leakages from the edge of the tube are lower than the rates between 10-20% reported in the literature (14,15). As it is known, the tube leakages often cause the level of the tube detection to go forward. We believe that routinely recording the level of the tube in the procedure report and informing the patient's caregivers and relatives about this issue in our clinic reduces the leakages from the edge of the tube.

As a result, the peg catheter placement procedure in a general surgical clinic is performed in patients with surgical or medical diseases in accordance with the complication and success rates in the literature. In this study, wound infection and leakages from the edge of the tube have been observed to be closely related to tube detection and it has been determined that the frequency of complications has increased in patients over 60 years of age.

Conflicts of interest: There are no conflicts of interest.

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