Percutaneous endoscopic gastrostomy (PEG), in elderly patients with dementia and anorexia.

Medical and ethical issues regarding placement

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BACKGROUND AND AIMS: *Ethical and medico-legal issues reviews of Percutaneous Endoscopic Gastrostomy (PEG) placement in elderly patients is an important topic of international medical literature. PEG is often inappropriately placed in patients with not spontaneous oral feeding intake, cause of unrealistic expectations. We performed a critical review of the literature for placement of PEG in geriatric patients.*
METHODS: *A literature review was performed about the positioning of the PEG in geriatric patients with dementia and severe anorexia. This assessment has served to develop an algorithm that would be able to provide adequate indications for PEG placement in this patient population.*
RESULTS: *We obtained appropriate indications about PEG placement, below: 1) Esophageal obstructions (like esophageal or neck cancer) 2) neurological deficits correlated dysphagia (like ictus sequelae) 3) refusal to swallow without concomitant terminal illness (like protracted pseudo dementia caused by severe depression) 4) chronic gastric decompression in patients with benign/malignant obstruction who do not wish or can't have a nasogastric tube placed.*
CONCLUSIONS: *When compared with controls matched for age, elderly patients with cognitive impairment who have feeding gastrostomy do not demonstrate improved survival.*

KEY WORDS: Anorexia, Dementia, Elderly, Percutaneous Endoscopic Gastrostomy

Introduction

Since its introduction in 1980, the percutaneous endoscopic gastrostomy (PEG) resulted a secure method for the long-term nutritional intake [1,2]. The decision to recommend a percutaneous endoscopic gastrostomy (PEG) is a topic of considerable interest in the medical literature.

The indications for PEG includes inability to eat because of severe stroke, dysphagia secondary to neurological diseases, anoxic encephalopathy, or cancer of the head and neck [3]. Nowadays, nutrition via gastrostomy is increasingly used to improve caloric intake for patients with cognitive impairment, when oral intake results inadequate.
there are few data in literature on the survival benefits or performance status improvement, in this subgroup of patients after placement of PEG. Many studies on survival after PEG included patients with cancer, severe stroke and brain injury, making survival statistics interpretation hard [3-6]. This prospective study was designed to evaluate the ethical and medico-legal issues of PEG placement in elderly patients with compromised cognitive status.

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Methods

Peg Placement Indications

Appropriate indications for PEG placement are: esophageal obstruction (esophageal cancer), dysphagia without obstruction (post cerebrovascular accident outcomes), refuse to swallow without evidence of concomitant terminal illness (pseudo dementia caused by protracted severe depression) [7-8]. If no physiological benefit is expected with placement of a PEG (anorexia - cachexia syndrome), health care is under no obligation to perform the surgery. This principle is applied even if the intervention improves the physiological state, but has no effect on quality of life (permanent vegetative state) [9,10]. The assessment of the outcome of PEG in inpatients and outpatients according to criteria of morbidity, mortality and survival, in patients hospitalized with documented mental disorder (dementia / delirium), and an acute medical illness with malnutrition, showed a mortality to 30-day of 29%. This data supports the conclusion that patients with acute diseases are at increased risk of significant adverse events, and placement of the PEG should be postponed until stabilization of the underlying disease.

Ethical Issues

As with all medical treatments, the decision to place a PEG must be determined on the basis that that provide a real benefit to the patient [11]. Often, treating doctors feel compelled to offer the placement of PEG because they believe that are legally / morally obliged to provide artificial nutrition and hydration (ANH). As with other medical treatments, determine the appropriateness of the ANH for a particular patient, it is based on the evaluation of achievement of the objectives of the treatment and evaluation of risks and benefits. The ethical obligation to provide ANH is based on the need of medical appropriateness, and the potential benefit to the patient. As with any other medical treatment, the determination of the appropriateness of PEG placement and subsequent ANH for a particular patient is of primary importance. In all cases, doctors are not obliged to provide or continue ANH unless the benefit is provided. ANH is considered a medical treatment so ethically like any other life support as ventilatory support, dialysis, antibiotics, etc. [12-13] PEG use in geriatric population hospitalized in nursing homes is a controversial issue, and often complicated by the lack of information and misinformation. The number of PEG procedures increased from 61,000 in 1989 to 216,000 in 2000, making PEG the second most common indication for endoscopy of the upper gastrointestinal tract [14]. From 1997 to 2010, the incidence of PEG increased from 0.1 to 3.8/10^5 population and incidence of PEG among aged patients increased from 0.9 to 19.0/10^5 population. Compared 1997-2004 to 2005-2010 periods, the percentage of cerebrovascular diseases decreased and esophageal cancer increased in the later period. PEG was mainly performed in male patients and at medical centers. Medical costs, Charlson Comorbidity Index (CCI) scores, and post-PEG mortality rates were higher in the 2005-2010 period than in the 1997–2004 period [15]. Unfortunately, most patients can't achieve any significant improvement of the nutritional status or of the subjective health status after placement of PEG. Some studies have shown a 30-day mortality of 23.9 % in this population group [15]. There is no clear benefit in the long term both in weight gain than in markers of nutritional status (albumin, prealbumin). One of the first prospective studies performed by evaluating the indication, benefits, and complications of PEG in geriatric patients, aged between 65 and 95 years, found that the nutritional response was effective in maintaining body weight up to 6 months, beyond which there was a trend toward weight loss. A recent retrospective study using US nationwide inpatient sample who had received PEG, show a mortality of 6% with 0.2% occurring in the first 7 days and 2% occurring in the first 14 days [17]. Survival in patients with more than 60 days, at least 70% had no significant nutritional improvements, functional and health status. So even if the PEG feeding can probably be done safely in chronically ill there is no evidence of significantly improve nutritional status or functional parameters. Improving the feeding quality in patients with dementia (including the training of personnel, more tasteful food, etc.), could often get nutritional benefits that eliminate the need of PEG placement

Discussion

PEG is a long-term enteral feeding method, well accepted, in patients unable to feed themselves, because of various pathologies. Often, it is performed to improve the caloric intake in elderly patients with cognitive impairment, with reduced oral intake and malnutrition. If feeding with gastrostomy in those patients improve survival or not, has not been evaluated prospectively.
Previous studies have included in the evaluation patients with tumors, brain injury, cardiopulmonary arrest, and severe stroke, each of which adversely affects survival.
A serum albumin level ≤ 2.9 g/dL, low lymphocyte count, and complications of malignant diseases may adversely affect 1 year survival [18]. Our study was designed to evaluate the survival of patients who have implanted a PEG, in cases of decreased nutritional intake, and compare their survival with that of older hospitalized patients (controls) who did not receive a PEG. Mortality in patients at the end of 6 months is 44%, compared with 26% for controls. The mean serum albumin in patients was lower than that in the control cohort. Even in the

absence of life-threatening diseases, the mortality rate was 44%. This high mortality in patients in controls matched for age and sex is probably a reflection of the basic neurological disease and functional impairment.
No improvement in performance status has been observed in survivors. The lack of prolonged survival and an improved performance status should be discussed with family members prior to a gastrostomy in elderly patients with dementia.

Conclusions

When compared with controls matched for age, elderly patients with cognitive impairment who have feeding gastrostomy do not demonstrate improved survival.
ANH is considered a medical treatment. Such as, the decision for or against treatment, should be made in a shared decision-making model with the patient or surrogates, evaluating the benefits and drawbacks of the specific treatment. Physicians should recognize the emotional nature of the topic of ANH, and evaluate it in terms of achievable medical objectives. The challenge of decision making is to facilitate communication, respecting the ethical principles of autonomy, and safeguard the vulnerable patients. Hopefully, by following the above principles, caregivers will have a better understanding of the decision-making process for the positioning of a PEG, facilitating greater communication between doctors and patients.

Riassunto

I problemi etici e medico-legali del posizionamento della gastrostomia endoscopica percutanea (PEG) nei pazienti anziani sono un argomento importante della letteratura medica internazionale. PEG è spesso posizionato in modo inappropriato in pazienti con assunzione di cibo orale non spontanea, causa di aspettative non realistiche. Abbiamo pertanto eseguito una revisione critica della letteratura sul tela dell'adozione della PEG nei pazienti geriatrici.
La revisione della letteratura è stata eseguita concentrandoci sul posizionamento del PEG in pazienti geriatrici con demenza e grave anoressia. Questa analisi è servita a sviluppare un algoritmo che sarebbe in grado di fornire indicazioni adeguate per il posizionamento di PEG in questa popolazione di pazienti.
Le indicazioni derivate da questo studio circa l'appropriatezza del posizionamento di PEG, riguardano:
1) ostruzioni esofagee (come il cancro esofageo o al collo); 2) deficit neurologico correlato disfagia (come sequele ictus); 3) rifiuto di deglutire senza malattia terminale concomitante (come pseudo demenza protratto causato da depressione grave); 4) decompressione gastrica cronica in pazienti con ostruzione benigna / maligna che non desiderano o non possono avere una sonda nasogastrica posizionata.
In conclusione, se confrontati con i controlli corrispondenti all'età, i pazienti anziani con disabilità cognitiva alimentati con la gastrostomia non hanno dimostrato una migliore sopravvivenza.

References

1. Gaauderer MWL, Ponsky JL, Izant RJ Jr.: *Gastrostomy without laparotomy: A percutaneous endoscopic technique*. J Pediatr Surg, 1980; 15:872-75.

2. Larson DE, Fleming CR, Ott BJ, et al.: *Percutaneous endoscopic gastrostomy: Simplified access to enteral nutrition*. Mayo Clinic Proc, 1983; 58:103-07.

3. Rahnemal-Azar AA, Rahnemaiazar AA, Naghshizadian R, et al.: *Percutaneous endoscopic gastrostomy: Indications, technique, complications and management*. World J Gastroenterol, 2014; 20(24):7739-751.

4. Kalkan C, Kartal AC, Karakaya F, et al.: *Utility of three prognostic risk scores in predicting outcomes in elderly non-malignant patients after percutaneous gastrostomy*. J Nutr Health Aging, 2017; 21(10):1344-348.

5. Cortes-Flores AO, Alvarez-Villasenor Adel S, Fuentes-Orozco C, et al.: *Long-term outcome after percutaneous endoscopic gastrostomy in geriatric Mexican patients*. Geriatr Gerontol Int, 2015; 15(1):19-26.

6. Lee C, Im JP, Kim JW, et al.*: Risk factors for complications and mortality of percutaneous endoscopic gastrostomy: A multicenter, retrospective study*. Surg Endosc, 2013; 27(10):3806-815.

7. Nicholson FB, Korman MG, Richardson MA, et al.: *Percutaneous endoscopic gastrostomy: A review of indications, complications and outcome*. J Gastroenterol Hepatol, 2000; 15(1):21-5.

8. Grilo A, Santos CA, Fonseca J: *Percutaneous endoscopic gastrostomy for nutritional palliation of upper esophageal cancer unsuitable for esophageal stenting.* Arq Gastroenterol, 2012; 49(3):227-31.

9. Nair S: *Hypoalbumenemia is a poor predictor of survival after PEG in elderly patients with dementia.* Am J Gastroenterol, 2000; 95:133-46. Arq Gastroentero, 2012; 49(3):227-31.

10. Lim YJ: *Outcomes and safety issues related to percutaneous endoscopic gastrostomy in neurodegenerative diseases.* Clin Endosc, 2017; 50(3):213-14.

11. Kruse A, Misiewicz JJ, Rokkas T, et al.: *Recommendations of the ESGE workshop on the Ethics of Percutaneous Endoscopic Gastrostomy (PEG) Placement for Nutritional Support.* First European Symposium on Ethics in Gastroenterology and Digestive Endoscopy, Kos, Greece, 2003. Endoscopy, 2003; 35(9):778-80.

12. Sartori S, Trevisani L*: Cost analysis of long term feeding by percutaneous endoscopic gastrostomy in cancer patients in Italian health district.* Support Care Cancer, 1996; 4:21-6.

13. Hull M, Rawlings J: *Audit of outcome of long term enteral nutrition by percutaneous endoscopic gastrostomy*. Lancet, 1993; 341:869-72.

14. Mendiratta P, Tilford JM, Prodhan P, et al.: *Trends in percutaneous endoscopic gastrostomy placement in the elderly from 1993 to 2003.* Am J Alzheimers Dis Other Demen, 2012; 27:609-13.

15. Wei-Kuo C, Kuen-Tze L, Chen- Liang T, et al.: *Trends regard-*

ing percutaneous endoscopic gastrostomy. A nationwide population-based study from 1997 to 2010. Medicine (Baltimore), 2016; 95(24): e3910.

16. Arora G, Rockey D, Gupta S: *High In-hospital mortality after percutaneous endoscopic gastrostomy: Results of a nationwide population-based study*. Clin Gastroenterol Hepatol, 2013; 11(11):1437-444.

17. Chaundhry R, Batra S, Mancillas OL, et al.: *In-hospital mortality with use of percutaneous endoscopic gastrostomy in traumatic brain injury patients: results of a nationwide population-based study.* Neurocrit Care, 2017; 26(2):232-38.

18. Sivero L, Magno L, Galloro G, Quarto G, Benassai G, Luglio G, Formisano C: *Percutaneous gastrojejunostomy (PEG-J) for Levodopa/Carbidopa Intestinal Gel administration in Parkinson disease*: *Our institutional experience*. Chirurgia, 2013; 26(3): 211-12.

19. Tominaga N, Shimoda R, Iwakiri R, et al.: L*ow serum albumin level is risk factor for patients with percutaneous endoscopic gastrostomy*. Intern Med, 2010; 49(21):2283-883.