Pivotal Paper

Tube Feeding in Patients With Dementia: Where Are We?

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Dementia is a common diagnosis and accounts for significant morbidity and mortality. In the United States, the practice of medicine commonly dictated that dementia patients with dysphagia should receive a feeding tube. A review of the evidence in 1999 was completed to understand the validity of the premise of an improvement in a dementia patient's survival, quality of life, malnutrition, and comorbid diseases with tube feeding. The available literature reviewed was sparse. The retrospective and prospective observational studies noted no improvement in the above-mentioned outcomes in dementia patients with the use of tube feeding. Interestingly, a recent retrospective review denoted that dementia patients had no worse survival than patients with other diseases receiving a feeding tube and tube feedings. A prospective study comparing tube feeding to hand feeding in the dementia population is sorely needed. (*Nutr Clin Pract.* 2009;24:214-216)

Keywords: dementia; enteral nutrition

Prevailing Beliefs

Feeding tubes and their use in the elderly population have accelerated over the past 2 decades. In those patients with dementia and difficulty, or lack of desire to eat, feeding tubes have been placed with increasing frequency. Finucane and colleagues, in the paper "Tube Feeding in Patients With Advanced Dementia: A Review of the Evidence," published in the Journal of the American Medical Association in 1999, called this practice into question.[1]

Pivotal papers are defined as those that change the direction of a practice in medicine or create a breakthrough discovery. In general, we determine that these papers are "trend setters" and refer back to them to understand our current practice situations. These papers are often deemed "historical." It is hard to think of a paper from 1999 as historical, but the paper by Finucane et al[1] was such a paper.

Unique Scientific Contribution

Finucane et al[1] noted that patients with advanced dementia commonly develop difficulty eating, usually at the point that they become bedridden and dependent in all activities of daily living. In the United States, the response to this problem was the placement of feeding tubes, usually percutaneous endoscopic gastrostomy (PEG) tubes. In many states, transfer of patients from a hospital setting to a nursing home setting in the face of decreased oral intake required a feeding tube so that adequate nutrition could be delivered. The authors in the Finucane paper noted that their personal experience demonstrated that slow hand feeding may be an alternative to PEG tube feedings in patients with dementia and swallowing disorders. They wondered whether the literature supported evidence that PEG tubes were helpful in the dementia patient population. They proceeded to search MEDLINE from 1966 to 1999. They discovered that no tube feeding vs oral feeding trials in patients with advanced dementia existed. Historically, PEG tubes were developed as a procedure in 1980; the use of surgical gastrostomy or surgical jejunostomy tubes or a nasogastric tube for feeding would have preceded 1980.[2]

In the pivotal article by Finucane and colleagues,[1] specific questions were addressed using the literature and focusing on the patient population with dementia and dysphagia. This paper concluded the following:

1. Tube feedings did not reduce the risk of oral secretion or regurgitated gastric content aspiration. They noted that in a nonrandomized, prospective study, patients with oropharyngeal dysphagia fed orally had significantly fewer aspiration events than those fed by a tube.[3]
2. Tube feedings did not improve malnutrition as defined by biomarkers (eg, serum albumin concentration) in dementia patients.
3. Survival of tube-fed dementia patients was not greater than those handfed.[4]
4. Pressure ulcers were not improved by tube feeding.[5]
5. Tube feeding did not reduce the risk of developing infections.
6. Tube feeding demonstrated no definitive improvement in functional status.[6]
7. No data existed regarding improvement in patient comfort with tube feeding.

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Tube Feeding in Patients With Advanced Dementia

A Review of the Evidence

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Patients with advanced dementia frequently develop eating difficulties and weight loss. Enteral feeding tubes are often used in this situation, yet benefits and risks of this therapy are unclear. We searched MEDLINE, 1966 through March 1999, to identify data about whether tube feeding in patients with advanced dementia can prevent aspiration pneumonia, prolong survival, reduce the risk of pressure sores or infections, improve function, or provide palliation. We found no published randomized trials that compare tube feeding with oral feeding. We found no data to suggest that tube feeding improves any of these clinically important outcomes and some data to suggest that it does not. Further, risks are substantial. The widespread practice of tube feeding should be carefully reconsidered, and we believe that for severely demented patients the practice should be discouraged on clinical grounds.

JAMA. 1999;282:1365-1370 www.jama.com

PATIENTS WITH ADVANCED DEmentia commonly develop difficulty eating, often when they become bedridden and dependent in all activities of daily living. They may resist or be indifferent to food, fail to manage the food bolus properly once it is in the mouth (oral phase dysphagia), or aspirate when swallowing (pharyngeal phase dysphagia). Enteral tube feeding is intended to prevent aspiration pneumonia, forestall malnutrition and its sequelae, including death by starvation, and provide comfort. We reviewed data about whether any type of tube feeding can accomplish these goals in this group of patients. Studies limited to patients with cancer, burns, trauma, dysphagic stroke, mechanical obstruction, critical illness, pediatric patients, or patients receiving ventilatory assistance were not considered. We did not include discussion of ethical issues, since our focus was on clinical evidence.

We searched MEDLINE from 1966 through March 1999 and found no relevant randomized clinical trials comparing tube feeding with oral feeding in the severely demented. Thus, a meta-analysis was not possible; rather, we have presented a summary of the data available. In each section, we describe how articles were identified and summarize the findings. Our goal is to present the relevant data in a way that is useful to clinicians, patients, families, and perhaps policy makers.

For editorial comment see 1380.

DOES TUBE FEEDING PREVENT ASPIRATION PNEUMONIA?

Aspiration pneumonia is often an imprecise diagnosis both conceptually and clinically. Mendelson[1] described a group of parturient women who underwent ether anesthesia and vomited and aspirated gastric contents. All developed tachypnea, wheezing, rales, and cyanosis and all recovered uneventfully in a few days. Some authors use "aspiration pneumonia" to refer to this syndrome, a pneumonitis that follows aspiration and resolves spontaneously without antibiotics.[2] The term is also used to describe pulmonary infection due to misdirection of contaminated pharyngeal contents, especially oral secretions, into the airway. This syndrome is usually insidious in onset, associated with fever, and when a microbiologic diagnosis can be made, polymicrobial. Infection probably results when normally nonpathogenic organisms arrive in high enough inoculum to overcome host defenses.

Tube feeding cannot be expected to prevent aspiration of oral secretions, and no data show that it can reduce the risk from regurgitated gastric contents. In fact, in children[3] and in animal models,[4] gastrostomy tube placement may reduce lower esophageal sphinc-

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Validation

PEG tube placement today occurs for a variety of diseases. This includes but is not limited to stroke with dysphagia, esophageal obstruction from malignancy, or severe esophageal motility disorders such as achalasia, head and neck malignancy, and severe neurologic injury affecting swallowing such as noted in amyotrophic lateral sclerosis. With many of these medical indications, there is reasonable data to support the requirement or need for PEG tube placement. However, the use of PEG tube for feedings in dementia is much more controversial. Life expectancy in this patient population is often limited as dementia alone shortens life expectancy.[7]

To date, some retrospective and prospective observational studies have concluded that there is no survival improvement in dementia patients receiving a PEG tube compared with those who did not receive a PEG tube.[8,9] However, PEG tubes continue to be placed routinely in this population. Reasons include perceived required intensity of family or nursing in routine oral feeding, concerns about weight loss and dehydration, and cultural and religious values of patients and families. In addition, the current retrospective and prospective observational studies suffer from design flaws and often include a mixed patient population, making absolute conclusions for clinical practice difficult to obtain. Intriguingly, a recent retrospective study evaluated PEG tube placement in patients with severe cognitive impairment (SCI) or dementia vs those receiving PEG tubes for other medical reasons. There was no statistical difference in survival between the 2 groups.[10] Median survival of patients with dementia or SCI was 53 days compared with 78 days in patients without these diagnoses ($P = .85$). Age (odds ratio [OR] = 1.1; 95% confidence interval [CI]: 1.04-1.12) and serum albumin level (OR = 0.43; 95% CI: 0.22-0.84) were associated with 30-day mortality, whereas gender (OR = 1.2; 95% CI: 0.47-2.90), Charleston Co-Morbidity Index (OR = 1.1; 95% CI: 0.86-1.32), and presence of PEG-related complications (OR = 1.6; 95% CI: 0.36-6.76) were not.

Future Consideration

Attention to a dementia patient's overall global health status can have significant impact on the decision of whether to place a PEG tube. Teno et al[11] noted that in 1999, 18.1% of patients with severe dementia received a feeding tube. There was significant state-to-state variation, with 3.8% of patients in Nebraska and 41.8% of patients in the District of Columbia having a feeding tube placed. This demonstrates the confusion about the practice of feeding tube placement in patients with dementia and difficulty eating. More important, for each 10% increase in the number of "do not resuscitate" (DNR) orders, there was a concurrent 4.5% drop in feeding tube placement requests.

Clinical decision making between the patient, family, and physician should be consistent with legal and ethical principles. The endoscopist, if asked to place a PEG tube, should be knowledgeable about the outcomes in different patient populations following PEG tube placement. The endoscopist also should actively participate in informed consent, describing the procedure, identifying the potential risks, listing alternative therapy and treatment options, and then carefully answering questions from the patient and/or family. Treatment strategies should reflect the preferences and values of the patient. Patient autonomy is paramount. When the patient's wishes are known or can be elicited through a surrogate health proxy, they should be followed. It is important to recognize that decisions may be based on cultural, personal, family, spiritual, and religious beliefs and may not always be supported by scientific facts.

The bottom line is that no prospective, randomized trial of PEG tube placement vs alternate feeding (eg, hand feeding) in patients with dementia and/or severe cognitive impairment has been performed to evaluate differences in mortality and quality of life. This study has been proposed by the author of this pivotal paper to the National Institute of Aging. Only with a true prospective, randomized trial can this divisive question be finally answered.

References

1. Finucane T, Christmas C, Travis K. Tube feeding in patients with advanced dementia: a review of the evidence. *JAMA*. 1999;282:1365-1380.
2. Gauderer MW, Ponsky JL, Izant RJ Jr. Gastrostomy without laparotomy: a percutaneous endoscopic technique. *J Pediatr Surg*. 1980;15:872-875.
3. Feinberg MJ, Knebl J, Tully J. Prandial aspiration and pneumonia in an elderly population followed over 3 years. *Dysphagia*. 1996;11:104-109.
4. Franzoni S, Frisoni JB, Boffelli S, Rozzini R, Trabucchi M. Good nutritional oral intake is associated with equal survival in demented and nondemented very old patients. *J Am Geriatr* Soc. 1996;44:1366-1370.
5. Berlowitz DR, Brandeis GH, Anderson J, Brand HK. Predictors of pressure ulcer healing among long-term care residents. *J Am Geriatr Soc*. 1997;45:30-34.
6. Kaw M, Seka G. Long-term follow-up of consequences of percutaneous endoscopic gastrostomy (PEG) tubes in nursing home patients. *Dig Dis Sci*. 1994;39:738-743.
7. Wolfson C, Wolfson DB, Asgharian M, et al. A reevaluation of duration of survival after the onset of dementia. *N Engl J Med*. 2001;344:1111-1116.
8. Meier DE, Ahronheim JC, Morris J, Baskin-Lyons S, Morrison RS. High short-term mortality in hospitalized patients with advanced dementia: lack of benefit of tube feeding. *Arch Intern Med*. 2001;161:594-599.
9. Murphy LM, Lipman TO. Percutaneous endoscopic gastrostomy does not prolong survival in patients with dementia. *Arch Intern Med*. 2003;163:1351-1353.
10. Gaines DI, Durkalski V, Delegge MH. Dementia and cognitive impairment are not associated with earlier mortality after percutaneous endoscopic gastrostomy. *JPEN J Parenter Enteral Nutr*. 2009;33:62-66.
11. Teno JM, Mor V, DeSilva D, Kambumoto G, Roy J, Wetle T. Use of feeding tubes in nursing home residents with severe cognitive impairment. *JAMA*. 2002;287:3211-3212.