Percutaneous Endoscopic Gastrostomy Does Not Prolong Survival in Patients With Dementia

Lynne M. Murphy, MSN, RN, CNSN; Timothy O. Lipman, MD

**Background:** Artificial feeding by a percutaneous endoscopic gastrostomy (PEG) tube in patients with dementia has increased since the introduction of the endoscopic method of tube placement. Few studies have documented survival benefit from this intervention. This report reviews our experience with PEG tube placement for feeding patients with dementia.

**Methods:** All consultations for PEG tube placement were evaluated by a certified nutrition support nurse (L.M.M.) in consultation with a member of the gastroenterology physician staff (T.O.L.) for 24 months. Evaluation included the attainment of a brief medical history, a physical examination, and a review of comorbid conditions, laboratory variables for nutrition status, and bleeding risk. Interviews with patients or surrogates were conducted, including an explanation of the risks and benefits of PEG tube placement. A Kaplan-Meier survival curve was used to compare the median survival between patients with dementia who received a PEG tube and patients with dementia in whom PEG tube placement was refused.

**Results:** We received 41 consultations for PEG tube placement in patients with dementia. Percutaneous endoscopic gastrostomy was performed in 23 patients; 18 patients met the medical criteria for PEG tube placement, but surrogates refused placement. The median survival for the 23 patients who underwent PEG was 59 days; the median survival for the 18 patients who did not undergo PEG was 60 days.

**Conclusion:** There seems to be no survival benefit in patients with dementia who receive artificial feeding by a PEG tube.

Arch Intern Med. 2003;163:1351-1353

**PERCUTANEOUS** endoscopic gastrostomy (PEG) is used widely for gastrointestinal tract access to provide artificial feeding. A retrospective cohort study\(^1\) of 81,105 Medicare beneficiaries revealed an in-hospital mortality of 15.3% for all those who underwent gastrostomy. A similar Department of Veterans Affairs study\(^2\) reported an in-hospital mortality of 23.5% in 7,369 patients with PEG tubes. Percutaneous endoscopic gastrostomy tube placement frequently is requested to address problems of advanced dementia. These patients present with difficulty eating or swallowing, decreased consciousness, and weight loss.\(^3\) Despite lack of evidence to support the use of artificial nutrition by tube in patients with severe dementia,\(^4\) it is assumed that the alternative—no artificial feeding—is worse. Three studies have attempted to compare outcome in similar patients with and without gastric artificial feeding. One of these reports\(^5\) found a modest prolongation of life in nursing home patients with swallowing disorders who received a feeding tube compared with similar patients not receiving a feeding tube. Conversely, a similar study\(^6\) found a worse outcome in nursing home patients who received a feeding tube compared with those who did not. A third study\(^7\) found no difference in survival. Because the patients in the previously mentioned studies were considered similar only because of similar findings on a Health Care Financing Administration–required minimum data set form, it is not clear whether any study was truly comparing equivalent patients.

To determine whether gastric feeding provided by a PEG tube prolongs life in patients with dementia, we retrospectively reviewed a 2-year experience in comparable patients with dementia who either underwent or did not undergo PEG.

**METHODS**

Since 1997, all consultations for PEG tube placement have been evaluated by a certified nutrition support nurse (L.M.M.) under the supervision of a member of the gastroenterology attending staff (T.O.L.). Evaluation includes the attainment of a brief medical history, a physical examination, and a review of comorbid conditions, nutrition-associated labo-
Kaplan-Meier survival curve comparing the group that underwent percutaneous endoscopic gastrostomy (PEG) with the group that did not undergo PEG. Based on the log-rank statistic ($P = .37$, $df = 1$), the findings were not statistically significant.

Our findings support the hypothesis that there is no survival benefit to the placement of a PEG tube for artificial feeding in patients with advanced dementia. All patients would have been candidates for PEG tube placement, but the procedure was refused in 18 (44%). Thus, in a similar cohort of patients, PEG or no PEG did not enhance survival.

Our complication rate of 4.3% in those who underwent PEG does not differ from those in other literature reports.

More reports question the utility of PEG tube placement in patients with dementia; the 1-month mortality is as high as 54%. Little benefit from PEG has been established for any variable studied—aspiration pneumonia, nutrition status, pressure sores, functional status, patient comfort, or survival.

Nevertheless, despite a bleak prognosis for survival in patients with advanced dementia undergoing PEG, the alternative—no feeding—would seem worse. Surrogate decision makers are often presented with a bleak choice—agree to PEG or “let your loved one starve to death.” Ideally, to determine whether PEG-based artificial feeding enhances survival, a prospective, controlled, randomized study would have to be performed. However, such a study would be questioned ethically, and it is highly unlikely that a sufficient number of volunteers would agree to be randomized to PEG or no PEG tube insertion. We are then left with trying to ascertain benefit using indirect means. Three studies evaluating information from Health Care Financing Administration—required data in nursing homes have come to disparate conclusions—artificial nutrition by tube enhances, worsens, or does not alter survival in nursing home residents with chewing and swallowing disorders. However, in all of these studies, it is not clear that the nursing home residents studied had dementia or even underwent PEG tube feeding. Furthermore, it is quite plausible that the groups were not comparable, with sicker patients receiving feeding tubes. If sicker patients receive feeding tubes, then it is not possible to determine whether feeding tube or PEG tube placement enhances survival. Meier et al determined that the median survival in a cohort of patients examined for palliative care and undergoing PEG tube placement during a short-term hospitalization did not differ from patients in the same cohort who left the hospital without undergoing PEG (median survival, 195 vs 189 days; $P = .90$). However, it is not clear from the data why patients did or did not undergo PEG tube placement.

The evidence against PEG tube placement for artificial feeding in patients with dementia is substantial. Hospice literature suggests that avoiding artificial nutrition and allowing the patient to consume food and fluids ad lib may enhance comfort. We need to separate the need for the nurturing aspect of food from the provision of artificial nutrition. The provision of artificial nutrition may enhance comfort. We need to separate the need for the nurturing aspect of food from the provision of artificial nutrition.
patient with dementia may need physical or chemical restraint to avoid self-extubation. The act of patient restraint also has been identified as a risk factor for pressure ulcers. Furthermore, physical restraint may be seen as a violation of the patient’s right to dignity.

The limitations of our study include the small sample size, the lack of a prospective randomized approach, an all-male sample, and the inability to generalize the results to all patients with dementia. In addition, we do not have clinical information for the 2 groups of patients documenting similarity. However, the patients were similar in that all had advanced dementia, we were requested to place PEG tubes to facilitate hospital discharge, and we would have placed the PEG tube in all patients for whom we were consulted if we had surrogate permission. The difference between the groups was in the refusal of PEG tube placement by the patients (based on advance directives) or their surrogates (based on a careful and thorough explanation of potential risks and benefits).

In summary, in patients with advanced dementia and dysphagia, placement of a PEG tube neither enhances survival nor prevents death by starvation. This does not mean that patients with dementia should not have the right to receive artificial feeding via PEG tube placement. However, this intervention should be undertaken only after full discussion and understanding of the risk and lack of the following benefits: comfort, treatment and prevention of pressure sores, prevention of aspiration, and enhancement of survival.

Accepted for publication September 5, 2002.

Corresponding author: Timothy O. Lipman, MD, Gastroenterology/Hepatology/Nutrition Section (151W), Veterans Affairs Medical Center, 50 Irving St NW, Washington, DC 20422 (e-mail: timothy.lipman@med.va.gov).

REFERENCES

that one limitation of prospective, randomized data is a selection bias in which outcomes are preordained. Thus, the results may very well be valid but are not necessarily generalizable for the population studied.

A subsequent analysis of a subgroup of patients in this trial known to have ischemic heart disease demonstrated an inversion of the survival curves, so that the liberally transfused patient had better survival rates (albeit not statistically significant, since the trial was not powered to detect a difference in this subgroup). With the current ease and safety with which anemia can be treated, we would suggest that waiting for data only from prospective, randomized studies before establishing or revising clinical care guidelines may not be in the best interests of all patients, particularly those at risk.

As we hope readers are aware, the Archives publisher made a serious error in changing Goodnough from first to second author in our commentary published in the June 23 issue; the Archives has published a correction, and we also note this correction in this exchange of letters.

Lawrence T. Goodnough, MD
St Louis, Mo
Robert W. DuBois, MD
Allen R. Nissenson, MD
Los Angeles, Calif


Correction

Error in Figure. In the Original Investigation by Murphy and Lipman titled “Percutaneous Endoscopic Gastrostomy Does Not Prolong Survival in Patients With Dementia,” published in the June 9 issue of the Archives (2003; 163:1351-1353), an error occurred in the Figure on page 1352. In that figure, the lines in the figure key were reversed. The patients who underwent percutaneous endoscopic gastrostomy (PEG) (n = 23) should have been indicated by the dashed line, and the patients who did not undergo PEG (n = 18) should have been indicated by the solid line. The journal regrets the error.