

## Editorial

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# A Double-Edged Sword and Swinging Pendulum: The Evolving Role of Percutaneous Endoscopic Gastrostomy Tubes in Patients with Advanced Dementia

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Percutaneous Endoscopic Gastrostomy (PEG) tubes have been increasingly utilized in recent decades accompanying the rise in prevalence of disorders that require long-term non-oral enteral feeding such as Cerebrovascular accident (CVA), head and neck cancer and most notably advanced dementia.<sup>1,2</sup> The population of patients with dementia is expected to increase worldwide due to shifts in aging demographics leading to an estimate of 81 million people with this condition by 2040.<sup>3</sup>

A commonly encountered challenge in adults with advanced dementia is the development of difficulty with mastication and swallowing leading to weight loss, malnutrition and risk of aspiration pneumonia.<sup>4,5</sup> One long-term intervention to manage such malnutrition and risk of aspiration is the provision of enteral feeding through a percutaneous endoscopic gastrostomy (PEG) tube given the proposed nutritional, medication administration, and quality of life benefits.<sup>6</sup> However such benefits are controversial given lack of randomized controlled data as well as conflicting evidence regarding the prevalence of complications of PEG tubes compared to the actual benefit received with respect to morbidity and mortality from malnutrition and dysphagia. Multiple studies have revealed that PEG tubes in nursing home residents with advanced dementia do not in fact improve survival, nor prevent or help heal decubitus ulcers in this group of patients.<sup>7-10</sup> Additionally, risks of aspiration are not eliminated by PEG tube placement.<sup>11,12</sup> Finally, PEG tube insertion is associated with procedure-related complications such as bleeding, wound infection, aspiration events, tube leakage and dislodgment, buried-bumper syndrome, necrotizing fasciitis and peritonitis.<sup>1,13-15</sup> Of note, certain factors have been shown to predict the occurrence of complications following PEG insertion including low body mass index, malignancy, low serum albumin and neurologic diseases.<sup>16</sup>

To date, data informing PEG tube placement in adults with advanced dementia elderly is based off of retrospective studies, case series and reviews. A systematic review in 1999 explored the impact of enteral nutrition in patients with advanced dementia and found no improvements in the rates of aspiration, pressures sores or mortality and concluded that enteral feeding in patients with dementia should be strongly discouraged.<sup>17</sup> Furthermore, it had been shown that patients with dementia have increased mortality and aspiration events following PEG tube placement compared to other populations of patients with swallowing disorders.<sup>18,19</sup> A systematic review in 2001 showed that there was no evidence of increased survival in patients receiving enteral tube feeding while none of the studies examined Quality of Life (QoL).<sup>20</sup> This group recommended caution in decisions regarding enteral nutrition and PEG placement in patients with dementia given the lack of data supporting clinical benefit. More recently, a Cochrane review from 2009 reported no decrease in mortality among adults with

advanced dementia given enteral feeding and concluded that there is insufficient evidence to recommend enteral tube feeding in such patients.<sup>21</sup> In this review, no randomized controlled trials were identified; however 7 observational studies were analyzed. Finally, another recent systematic review from 2014 showed no improved long-term survival in patients with advanced dementia who underwent PEG tube insertion secondary to dysphagia compared to comparable patients without PEG placement.<sup>22</sup>

Unpublished data from our group examined the role PEG tube placement in patients with dementia and found a significant increase in short-term and long term mortality at 1, 6 and 12 months, and increased re-admission rate, compared with patients whom had PEG tubes placed for indications other than advanced dementia. Another study by Sanders, et al. found higher mortality rates at 1 month and 1 year following PEG tube insertion in adults with dementia.<sup>23</sup>

The European Society of Parenteral and Enteral Nutrition (ESPEN)<sup>24</sup> recommend the use of short-term enteral tube nutrition in patients with mild or moderate dementia if malnutrition is predominantly the cause of a reversible condition. Reversible conditions include secondary concurrent illnesses such as depression, infection, sedative medications, or poor oral health. ESPEN does not recommend the use of enteral tube feeding in the terminal phase of dementia, although acknowledge decisions are unique for each patient and should take into consideration each person's prognosis and values.

While the practice of PEG tube placement and use for patients with advanced dementia has longstanding precedent and is still widespread given the aforementioned theoretical benefits, there is currently insufficient evidence to recommend that enteral tube feeding is beneficial in this population. Furthermore, there is growing data which suggests that PEG tubes are associated with increased morbidity and mortality in adults with advanced dementia further swinging the pendulum away from their use. Thus, while decisions regarding PEG tube insertion must be made on an individualized basis incorporating patient values and preferences, caution should be taken before proceeding with this intervention that carries with it significant risk without clearly matched benefit.

#### CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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