Use of tube feeding to prevent aspiration pneumonia

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Authors' objectives
To assess the incidence of aspiration pneumonia and mortality in patients with neurogenic dysphagia receiving tube feeding.

Searching
MEDLINE was searched from 1991 to 1995 using the keywords 'enteral nutrition', 'deglutition disorders' and 'aspiration pneumonia'. Further references were obtained by reviewing bibliographies of retrieved articles and by contacting experts.

Study selection
Study designs of evaluations included in the review
Retrospective cohort studies, prospective cohort studies, and randomised controlled trials (RCTs) were included.

Specific interventions included in the review
Enteral feeding tubes (no distinction was made between tube types) were compared with oral feeding.

Participants included in the review
Patients with neurogenic dysphagia were the primary focus, but other patients were also included.

Outcomes assessed in the review
The outcomes assessed were aspiration pneumonia and mortality.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection. Articles were included if they were published in the English language, included patients with neurogenic causes of dysphagia, and reported aspiration pneumonia or mortality as outcomes in enterally-fed patients. Studies that enrolled only unconscious patients, or those on ventilators or in surgical or intensive care units, were excluded.

Assessment of study quality
The authors do not state that they assessed validity.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Methods of synthesis
How were the studies combined?
The studies were combined by a narrative review where the studies were presented in tabular format. For the 19 studies where follow-up and incidence of aspiration pneumonia could be determined, the results were also presented graphically.

How were differences between studies investigated?
The studies were presented in tables according to whether they were composed of patients with neurogenic dysphagia only, or whether they included a mix of patients (including those with neurogenic dysphagia).
Results of the review
Forty-one studies in total (n=3,204) were included: 22 retrospective cohort studies, 14 prospective cohort studies, 1 RCT and 4 other observational studies (no information given on whether prospective or retrospective).

Higher rates of aspiration pneumonia were found in tube-fed patients than non tube-fed patients (rates ranged from 58 to 67% versus 14 to 17% for tube-fed and non tube-fed, respectively). Where tubes were placed primarily for nutritional support, several patients developed aspiration pneumonia for the first time (rates ranged from 7 to 29%) and many with a history of aspiration continued to aspirate (rates ranged from 11 to 62%). Mortality in patients with neurogenic dysphagia, who were tube-fed, ranged from 5% at 17 days to 63% at 6 months.

Authors' conclusions
The use of feeding tubes is widespread, but no data show that they reduce the risk of aspiration pneumonia in neurogenic dysphagia. There are data to the contrary, and the burdens of feeding tube placement can be severe. For almost all conscious patients we suggest a dedicated attempt at feeding by hand. We would generally reserve the offer of enteral tube feeding as prophylaxis against aspiration and pneumonia, to those who have developed recurrent pneumonia despite our best efforts, those whose coughing during meals is extremely uncomfortable, and those who are acutely ill with impaired consciousness.

CRD commentary
No information is given on the methods of this review, including whether any quality assessment of the included studies was performed. The studies appear very heterogeneous with different lengths of follow-up, settings and definitions of aspiration pneumonia (different definitions are used in different papers).

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.