Complete Summary

GUIDELINE TITLE

American Gastroenterological Association medical position statement on management of oropharyngeal dysphagia.

BIBLIOGRAPHIC SOURCE(S)

American Gastroenterological Association medical position statement on management of oropharyngeal dysphagia. Gastroenterology 1999 Feb;116(2):452-4. [1 reference] PubMed

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SCOPE

DISEASE/CONDITION(S)

Oropharyngeal dysphagia

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Gastroenterology
Internal Medicine
Neurology
Oncology
Otolaryngology

Physical Medicine and Rehabilitation
Radiology
Surgery

INTENDED USERS

Physicians
Speech-Language Pathologists

GUIDELINE OBJECTIVE(S)

To make recommendations on the management of oropharyngeal dysphagia

TARGET POPULATION

Patients with oropharyngeal dysphagia

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Patient history
2. Physical examination, including systemic metabolic, and neurologic evaluation, and identification of pulmonary and nutritional sequelae
3. Laboratory tests, such as serological detection of acetylcholine receptor (AchR) antibodies, abnormalities in serum creatinine phosphokinase (CPK) levels
4. Imaging tests, such as electromyography, videofluoroscopic swallowing evaluation of oral and pharyngeal function (modified barium swallow), nasoendoscopy, manometry, manofluorography, direct or indirect laryngoscopy.
5. Histological examination

Treatment

1. Surgery, such as cricopharyngeal myotomy
2. Dilatation
3. Nonoral feeding
4. Tracheostomy
5. Diet modification (e.g., liquid diets)
6. Swallow therapy
7. Identification of syndromes or specific structural lesions amenable to pharmacotherapy, such as immunosuppressive therapy with steroids, azathioprine, or methotrexate for inflammatory myopathies; antineoplastic agents for tumors

MAJOR OUTCOMES CONSIDERED

- Results of diagnostic tests
- Subjective assessment of dysphagia severity
- Morbidity (aspiration, pneumonia, choking)

- Mortality

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Searching MEDLINE under the subject headings deglutition and deglutition disorders, as well as the key words deglutition, dysphagia, dysphagic, swallow, and choking, the number of citations identified exceeds 600 for each year since 1990. Thus, it was necessary to adopt a selective, as opposed to inclusive, approach to this literature. First, this was accomplished by outlining a systematic clinical approach to the dysphagic patient and then selecting key illustrative references to either highlight the logic of that approach or substantiate advocated interventions. Second, editorial emphasis was placed on critical analysis of more current and controversial concepts requiring a broader perspective of the literature.

NUMBER OF SOURCE DOCUMENTS

Five review articles and 15 original reports were used to examine the efficacy if myotomy in neurogenic dysphagia

Twelve original articles were used to examine the efficacy of swallowing therapy

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Level I evidence - Randomized controlled trials of high statistical power

Level II evidence - Randomized controlled trials with low statistical power

Level III evidence - Nonrandomized concurrent cohort comparisons

Level IV evidence - Nonrandomized historical cohort comparisons

Level V evidence - Case series without controls

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Recommendation Grades

Grade A - Recommendations stemming from level I evidence

Grade B - Recommendations stemming from level II evidence

Grade C - Recommendations stemming from level III, IV, or V evidence

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This document was approved by the Clinical Practice and Practice Economics Committee on May 17, 1998, and by the American Gastroenterological Association Governing Board on July 24, 1998.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the strength of the evidence (level I-V) and grades of recommendations are repeated at the end of the Major Recommendations field.

Clinical evaluation and management of oropharyngeal dysphagia lends itself to a polydisciplinary effort because of its inherent complexities:

1. Oropharyngeal dysphagia can be a manifestation of any of a multitude of systemic diseases, as opposed to a disease specific to the oropharynx.
2. Oropharyngeal dysphagia often results from a functional rather than mucosal or structural aberration, as is often the case with esophageal dysphagia.
3. Deglutition is a rapid, complex neuromuscular response that requires unique methodologies specifically tailored to its clinical evaluation.
4. Afflicted patients often present with accompanying neurological impairment limiting their ability to cooperate with their evaluation and therapy.

Given this broad array of considerations, it is impossible to develop a single strategy applicable to all potential clinical scenarios; however, certain principles do emerge, permitting the clinician to prioritize clinical objectives. Summarized below and in Algorithm 1 of the original guideline document is a brief outline of how to approach these objectives developed from a critical review of the medical literature on the management of oropharyngeal dysphagia.

1. Ascertain Whether Oropharyngeal Dysphagia is Likely and Identify the Likely Etiology

   Key at this stage are the history and physical examination. In obtaining the history, the clinician must:

   1. use symptom assessment to distinguish oropharyngeal dysphagia from globus, xerostomia, or esophageal dysphagia
   2. think broadly to facilitate identification of treatable systemic or metabolic disease
   3. identify possible drugs that may be contributing to dysfunction, e.g., anticholinergics, phenothiazines, botulinum toxin, penicillamine, metoclopramide, high doses of aminoglycosides, amiodarone, HMG-CoA reductase inhibitors, or procainamide

   The primary goals of the physical examination are to:

   4. identify features of potential underlying systemic or metabolic disorders
   5. identify evidence of and severity of neurological damage
   6. identify potential pulmonary and nutritional sequelae of dysphagia

   In a limited number of instances, the history and physical examination will mandate laboratory tests, imaging tests, or histological examinations for verification of underlying infectious (e.g., syphilis, candida), metabolic (e.g., Cushing's disease, thyrotoxicosis), or neuromuscular (e.g., myopathy, myasthenia, multiple sclerosis) conditions.

2. Identify Structural Etiologies of Oropharyngeal Dysfunction

   The second aim of clinical evaluation is to identify surgically (or endoscopically) treatable structural abnormalities. Caution is required in interpretation of the functional significance of relatively common, and usually incidental, radiographic abnormalities such as cervical osteophytes or cricopharyngeal bars. Consistent grade C evidence (case series without

controls) supports the use of cricopharyngeal myotomy for treatment of Zenker's diverticulum and dilation for benign proximal esophageal webs or stenoses. These lesions, along with signs of neoplasm, infection, strictures, or diverticuli, each of which implies a specific therapy, are sought by careful radiographic and/or endoscopic examination of the oropharynx and proximal esophagus. Even when effective therapy does not exist for the underlying condition, it is a firmly held conviction among practitioners, and an expectation among patients, that provision of an accurate diagnosis and prognosis is an important medical goal.

3. Ascertain the Functional Integrity of the Oropharyngeal Swallow

Broad categories of swallow dysfunction are:

1. inability or excessive delay in initiation of the pharyngeal swallow
2. aspiration of ingestate
3. nasopharyngeal regurgitation
4. postswallow residue of ingestate within the pharyngeal cavity

The clinical investigation must evaluate these parameters of dysfunction because the morbidity of swallowing dysfunction, ranging from subjective dysphagia to dehydration, wasting, aspiration pneumonia, and even death, parallels the severity of dysfunction measured along these parameters. Characterization of the severity of all four categories of dysfunction enumerated above requires a videofluorographic or cineradiographic examination, commonly referred to as a modified barium swallow. Nasoendoscopy of the oropharynx, which might be done to evaluate for malignancy, can provide clues to a neurogenic/myogenic etiology of swallowing dysfunction (e.g., salivary pooling, cord paresis) but rarely will fully characterize the dysfunction. In some instances, especially with suspected incomplete upper esophageal sphincter (UES) relaxation or reduced upper esophageal sphincter opening, manometry, preferably combined concurrently with videofluoroscopy, may allow further delineation of the underlying mechanism of dysfunction and determination of the appropriateness of therapy (e.g., dilation or cricopharyngeal myotomy). However, at least in the case of neurogenic/myogenic dysphagia, such an approach has not yet been proven to influence outcome.

4. Evaluate the Risk of Aspiration Pneumonitis

At this point, the clinician must establish whether gastrostomy feeding should be instituted on the reasonable, but unproven, premise that gastrostomy feeding reduces the risk of aspiration pneumonia. This decision is made on the basis of videofluoroscopic analysis of the severity of swallowing dysfunction, the estimated likelihood that therapeutic maneuvers (tested during videofluoroscopy) will adequately compensate for observed dysfunction, the natural history and prognosis of the underlying disease process, and the patient's cognitive ability. In some instances, both because tube feeding does not necessarily eliminate the risk of aspiration pneumonia and because it is necessary to eliminate aspiration of oral secretions, surgical procedures aimed at minimizing aspiration (epiglottoplasty, partial or total

cricoid excision, laryngeal suspension, vocal fold medialization, glottic closure, laryngotracheal diversion, or laryngectomy) may be needed.

5. Determine if the Pattern of Dysphagia is Amenable to Therapy

   Once structural lesions have been excluded, data supporting surgical intervention (e.g., cricopharyngeal myotomy, laryngeal suspension) for management of oropharyngeal dysphagia are weak. Level C evidence (case series without controls or clear outcome measures) suggests an overall response rate from myotomy of approximately 60% in this class of patients, but benefit in an individual cannot be predicted with certainty. Without further, well-designed studies in clearly defined subsets of patients, the decision about myotomy will remain empirical, to be embarked on only after the patient has been informed of the risks and possible but unproven benefits. More commonly, the introduction of swallowing therapy is appropriate at this point. Current strategies of swallowing therapy are modification of diet, swallowing posture, or swallowing technique. Modifications of swallowing technique are intended to strengthen weak oropharyngeal muscle groups, thereby improving their speed and range of movement, and/or to selectively modify the mechanics of the swallow to facilitate bolus flow and minimize aspiration. Application of swallowing therapies depends on videofluoroscopic definition of the relevant mechanism of dysfunction and examination of the short-term effects of therapeutic strategies designed to eliminate or compensate for that dysfunction. The strongest recommendation that can be made pertains to diet modification, with efficacy studies showing reduced risk of airway penetration and of aspiration pneumonia. On these grounds, and considering the relatively low cost involved, routine introduction of dietary modifications in patients at risk for aspiration pneumonia is logical. The literature provides reasonable evidence of the biological plausibility of other modalities of swallowing therapy but minimal evidence for their efficacy. Although available data are inconclusive, swallowing therapy may be helpful in certain patients. We recommend that swallowing therapy be used methodically based on the convincing demonstration of biological plausibility of specific techniques, consistent low-grade evidence suggesting efficacy, low cost, and absence of risk. However, large-scale controlled trials are needed to clarify the utility of swallowing therapy.

Definitions:

Levels of Evidence

Level I evidence - Randomized controlled trials of high statistical power

Level II evidence - Randomized controlled trials with low statistical power

Level III evidence - Nonrandomized concurrent cohort comparisons

Level IV evidence - Nonrandomized historical cohort comparisons

Level V evidence - Case series without controls

Recommendation Grades

Grade A - Recommendations stemming from level I evidence

Grade B - Recommendations stemming from level II evidence

Grade C - Recommendations stemming from level III, IV, or V evidence

CLINICAL ALGORITHM(S)

An algorithm is provided in the original guideline document for the management of oropharyngeal dysphasia.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for selected recommendations (see "Major Recommendations").

The final recommendations are based on the highest levels of published evidence, when available. However, faced with the limitations of existing data, some of the ensuing treatise is based on expert opinion. In these instances, recommendations were based on combined weighing of evidence from the most rigorous studies available along with available indirect evidence such as:

1. biological plausibility based on observations from physiological studies
2. extrapolation from relevant studies even though they were not specifically designed to address the question at hand (e.g., uncontrolled studies, case series, natural history studies)
3. authors' opinions and opinions of experts in the field, which usually reflect current best practice

Five review articles and 15 original reports were used to examine the efficacy if myotomy in neurogenic dysphagia (see Table 4 of the technical report). None were controlled trails, and many did not specify outcome measures.

Twelve original articles were used to examine the efficacy of swallowing therapy (see Table 7 of the technical report). Only 5 of these were controlled trials, and 2 were randomized studies.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Oropharyngeal dysphagia has high morbidity, mortality, and cost. The consequences of oropharyngeal dysphagia are severe: dehydration, malnutrition, aspiration, choking, pneumonia, and death. Appropriate identification and characterization of oropharyngeal dysphagia may help to identify the underlying cause, allowing clinicians to provide optimal treatment.

Subgroups Most Likely to Benefit:

Cricopharyngeal myotomy is most efficacious when applied to patients with structural disorders that limit opening of the cricopharyngeus in association with preserved pharyngeal contractility. These conditions are met with postcricoid stenosis, webs, and Zenker's diverticulum. Simple dilatation can afford benefit of variable duration in Zenker's diverticulum, but myotomy is the essential element for successful long-term relief of dysphagia. Good or excellent responses can be expected in 80%-100% of Zenker's patients treated by transcervical myotomy combined with diverticulectomy or diverticulopexy.

POTENTIAL HARMS

- There are complications associated with surgical excision of cervical osteophytes, including vocal fold paralysis or paresis, vertebral disc prolapse, fistula, hematoma, infection, aspiration, and Horner´s syndrome.
- Cricopharyngeal myotomy carries the risk of operative mortality (average 1.8% among 15 studies).

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Of necessity, clinicians frequently practice according to a pattern based largely on what has worked in the past, rather than according to the best available clinically relevant research. The lack of high-level evidence supporting efficacy is not sufficient reason to abandon current best clinical practice. The experienced clinician uses a combination of clinical expertise and the best available evidence-based medicine because neither alone is sufficient to dictate decisions on treatment of individual patients.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1998 Jul 24 (reviewed 2001)

GUIDELINE DEVELOPER(S)

American Gastroenterological Association - Medical Specialty Society

SOURCE(S) OF FUNDING

American Gastroenterological Association

GUIDELINE COMMITTEE

American Gastroenterological Association Clinical Practice and Practice Economics Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

ENDORSER(S)

American Association for the Study of Liver Diseases - Private Nonprofit Research Organization
American College of Gastroenterology - Medical Specialty Society
American Society for Gastrointestinal Endoscopy - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

According to the guideline developer, the Clinical Practice Committee meets 3 times a year to review all American Gastroenterological Association guidelines. This review includes new literature searches of electronic databases followed by expert committee review of new evidence that has emerged since the original publication date.

This guideline has been reviewed by the developer and is still considered to be current as of Dec 2001.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Gastroenterological Association (AGA) Gastroenterology journal Web site.

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Cook IJ, Kahrilas PJ. AGA technical review on management of oropharyngeal dysphagia. Gastroenterology. 1999 Feb;116(2):455-78. [197 references].

  Electronic copies: Available from the American Gastroenterological Association (AGA) Gastroenterology journal Web site.

The following is also available:

- The American Gastroenterological Association standards for office-based gastrointestinal endoscopy services. Gastroenterology. 2001 Aug;121(2):440-443 [8 references].

  Electronic copies: Available from the American Gastroenterological Association (AGA) Gastroenterology journal Web site.

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on June 5, 2002. The information was verified by the guideline developer on July 12, 2002.

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