Nutritional Management in Home Care: Including Eating Disorder and Dysphagia Assessments*1

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Assessment of Malnutrition in the Elderly

Malnutrition is a condition that generally develops when one's intake of protein and calories is chronically lower than the consumption. There are many nutritional assessment methods such as the Subjective Global Assessment (SGA) and the Mini Nutritional Assessment® (MNA®), which are discussed in another text book.[1] In this article we mainly focus on the challenges of nutritional assessment in home care.

The first step of nutritional assessment is to obtain the accurate amount of food intake. The patient him/herself or the family members may claim that the patient has eaten enough; however, the amount of food the patient has actually ingested is often questionable. In some situations, elderly patients may frequently spill or drop food, or family members may think that the elderly require only a small meal portion. The caloric intake and nutrition of an elderly patient may become imbalanced. The entire family may also have a habit of consuming an unbalanced diet. All of these diet issues must be approached with caution. It is important to conduct interviews to specifically ask questions regarding the type and quantity of food consumed by the patient and maintain records of all meals consumed. Although it may be difficult in a home care environment, it is recommended to weigh (in grams) food intake portions on a scale for more accurate records.

A simple method of nutritional assessment is regular monitoring of body weight. Understandably, regular blood tests should be conducted to evaluate albumin or total protein, blood urea nitrogen, creatinine, and electrolyte levels as well as anemic conditions. Physicians should also remember that malnutrition may be a hidden cause of pressure ulcers, repeated fever, aggravation of dementia, muscle weakness, or reduced activity levels. Physicians should also recognize that electrolyte abnormalities among the elderly can be caused by the excessive use of laxatives due to constipation, diarrhea, extremely low-salt diet, excessive intake of vegetable juices or nutritional supplements, or administration of herbal medicines or over-the-counter drugs. Furthermore, malnutrition can be caused by a reduced food intake due to dysphagia (described in detail below), which should be considered for nutritional assessment.

Assessment and Tests for Dysphagia[2]

The common symptoms of dysphagia patients are described in **Table 1**. The two main methods for assessing dysphagia are screening and detailed examinations; evaluations using questionnaires (**Table 2**) and clinical observations are more reasonable and easier for general physicians and nurses. Patients who eat regular meals or softened vegetables are asked to mark their answers on a questionnaire. Patients are considered as being "problematic" or having "no major problem" if they answer A or B, respectively, to any of the questions. The main points to observe during eating are summarized in **Table 3**. Please note that these are only examples

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Table 1 Main symptoms for suspecting and diagnosing dysphagia

Choking: When and what kinds of food the patient chokes?
Cough: Does the patient cough more frequently during and/or after a meal or at nighttime?
Sputum (its character and amount): Does the sputum contain food residue, or is there an increase in the amount of sputum after the patient starts to eat?
Sensation of residual food or abnormal sensation (in pharynx): Does the patient experience an abnormal sensation (e.g., residual food) in the pharynx or other areas?
Sense of swallowing difficulty: Does the patient feel a different swallowing difficulty sensation with different food items?
Voice: Does the patient's voice change after a meal (i.e., hoarse voice)?
Loss of appetite: Dysphagia can cause choking or breathing difficulty, causing the patient to become hesitant in eating.
Change in diet: Does the patient select foods that are easy to swallow?
Longer mealtime: The patient continues chewing for an extended period without swallowing the food or takes extra time to swallow.
Changes in eating pattern: The patient eats while looking up, switches between soups and other dishes in an alternating fashion, or drops food from his/her mouth.
Fatigue during meals: Does the patient experience hypoxemia associated with eating?
Oral care problems: The patient may have extensive dental plaque or residual foods; bad breath may be associated with the oral stage of swallowing (during which a bolus moves from the oral cavity to the pharynx).

Table 2 Contents of dysphagia screening questionnaire

Name _____ Age _____ M / F

Date of Birth (Year/Month/Day) _____ / _____ / _____

Height _____ cm Weight _____ kg

The following questions are related to how you swallow food (i.e., swallowing food from the mouth until it reaches the stomach). All questions are related to important symptoms. Please read each question carefully and mark your answer as A, B, or C. Please answer these questions based on your experiences during the last 2 or 3 years.

	1. Severe symptoms	2. Mild symptoms	3. No symptoms
1. Have you ever been diagnosed as having pneumonia?	Many times	Once	No
2. Do you feel you are becoming thin?	Obviously	Slightly	No
3. Do you ever have difficulty when you swallow?	Many times	Sometimes	No
4. Do you ever choke during a meal?	Many times	Sometimes	No
5. Do you ever choke when swallowing liquids?	Many times	Sometimes	No
6. Do you ever have difficulty with coughing up phlegm during or after a meal?	Many times	Sometimes	No
7. Do you ever have the feeling that food is getting stuck in your throat?	Many times	Sometimes	No
8. Does it take you longer to eat a meal than before?	Obviously	Slightly	No
9. Do you feel that it is getting difficult to eat solid foods?	Obviously	Slightly	No
10. Do you ever drop food from your mouth?	Many times	Sometimes	No
11. Do you ever have the feeling that food is remaining in your mouth?	Many times	Sometimes	No
12. Do you ever have the feeling of food or liquid going up into your throat from your stomach?	Many times	Sometimes	No
13. Do you ever have the feeling that food is getting stuck in your esophagus?	Many times	Sometimes	No
14. Do you ever have difficulty sleeping because of coughing during the night?	Many times	Sometimes	No
15. Do you feel that you are getting hoarse?	Obviously	Slightly	No

(Kawashima K et al. Dysphagia Screening Questionnaire.)

Table 3 Points to observe when the patient is eating

Objective/symptom	Points to observe	Potential primary conditions and disabilities
Food recognition	The patient is dazed or has restless eyes.	Impaired cognitive perception of food and distraction
Use of devices for eating	Food drops before reaching the mouth.	Paralysis, ataxia, apraxia, and agnosia
Meal contents	The patient avoids certain items.	Oral and/or pharyngeal stage problems, taste disorder, reduced saliva secretion, and oral disease
Dropping from the mouth	Food is dropped out of mouth.	Problems in taking and holding food into the mouth and paralysis in lips/cheeks
Mastication	Vertical movements of the lower jaw only; no rotational movements Inability to chew hard foods	Problem in the masseter muscle Caries, incompatible denture, periodontal disease, etc.
Before initiation of the swallowing reflex	Continued chewing without swallowing for a long time or takes effort to swallow Swallowing with neck extension	Problems in the oral and/or pharyngeal stage Problem in transporting food
Choking	Certain items (e.g., soups) cause choking. Choking occurs early during the meal. Choking occurs later during the meal.	Aspiration and pharyngeal residues Aspiration and carelessness Aspiration, pharyngeal residues, fatigue, muscle weakness, and gastroesophageal reflux
Cough	Coughs occur mainly during and/or after a meal.	Aspiration, pharyngeal residues, and gastroesophageal reflux
Voice	The voice changes during or after a meal.	Aspiration and pharyngeal residues
Mealtime	Each meal takes 30-45 minutes (or longer).	Cognitive stage disorder, problems in bringing food into the mouth, or transporting food from the mouth
Appetite	Appetite is lost during a meal.	Cognitive stage disorder, aspiration, pharyngeal residues, and reduced physical strength
Fatigue	Vitality is lost or feels tired during a meal.	Aspiration, pharyngeal residues, and reduced physical strength

of observations; it is fundamental to carefully listen to the patients and family members and observe the clinical setting. The 2 options of precise examination for dysphagia are videofluoroscopic and video-endoscopic evaluation of swallowing. Both tests are usually conducted at hospitals. However, video-endoscopic evaluations can also be conducted at home using a portable fiberscope, which has become popular among physicians.

Dysphagia Management

The procedures that can be performed immediately to address minor dysphagia problems are shown in **Table 4**. Patients with a moderate or severe degree of dysphagia are generally treated in well-equipped hospitals.

Practical Factors Involved in Providing Swallowing Rehabilitation at Home

Providing swallowing rehabilitation at the patient's home involves his/her family, a service provider under the national long-term care insurance, medical institutions, and other various professions. Collaborations among all these members are essential,[3] and it is important to approach rehabilitation from the idea of community-based teamwork, i.e., community dysphagia management teams. Each dysphagia management team may consist of different members and roles, such as meal preparation including an easy-to-swallow diet[4] and staff who can provide swallowing rehabilitation, manpower to assist eating, and risk management. The requirements in a team can vary greatly among communities and institutions;

Table 4 Rehabilitation procedures on the scene

1. Ask the patient to focus on the act of swallowing
2. Ask the patient to hold his/her breath while swallowing (i.e., the patient must firmly hold his/her breath when swallowing)
3. Chin down (i.e., the patient should look down when swallowing)
4. Neck rotation (i.e., the patient should look down at his/her right or left when swallowing)
5. Change to a thickened liquid (*toromi*) or jelly diet
6. Drinking and eating in a reclining posture

therefore, the collection and organization of information regarding the capacity of each team is required. When collaborating, it is important that the team shares common treatment policies and goals, knowledge about the underlying disease (e.g., state of the disorder, prognosis, risks, and future approaches), and provide education to family members. Furthermore, the team should discuss and share information regarding the type of oral care provided, content of the meals, and methods applied to assist with eating. It is strongly recommended to use documents and pictures to specifically verify the care that the patient was provided.

Dysphagia Management Methods by the Degree of Severity

The key in educating and instructing patients with preliminary or a mild degree of dysphagia is detecting its signs, providing instructions early, and devising inexpensive and effortless methods. Patient instructions should include: (1) explanations about normal swallowing and dysphagia, (2) oral care, (3) swallowing exercises (the Fujishima Style swallowing exercise set),[3] (4) conscious focus on swallowing, (5) not lying down right after a meal, and (6) 10 rules to maintain eating ability for years.[3] Patients with a moderate or severe degree of dysphagia should ideally be diagnosed and treated at well-equipped hospitals.

However, the patient may need to be placed under home care if: (1) the patient's dementia will likely progress by staying at a hospital, (2) the patient is receiving end-of-life care, (3) the patient and/or family members are refusing to be admitted, or (4) home care is the only option because nearby hospitals cannot accept inpatients. Home care, on the other hand, may provide better outcomes because of several unique advantages, such as: (1) lack of pressure to vacate an inpatient bed, which will enable the patient to fully commit to rehabilitation; (2) familiarity of environment that allows the patient to demonstrate his/her best efforts; and (3) opportunity for care providers to become familiar with the patient's background, allowing them to provide attentive and personalized responses for each individual patient.

Key Points in Managing and Maintaining Eating Function

The key points in managing and maintaining eating function are to correctly understand the underlying diseases and disorders, and prevent pneumonia, dehydration, and malnutrition by applying knowledge and techniques regarding swallowing rehabilitation. The daily nutritional goals should be a calorie intake of 20-25 kcal/kg, fluid intake of ≥30 mL/kg, and protein intake of 60-70 g. Malnutrition and dehydration can exacerbate dysphagia, which in turn can worsen malnutrition, leading to a vicious cycle. Introducing fluid therapy, supplementary meals/snacks, and/or nutritional supplements[5] should be considered while patients are still in an early stage of dysphagia. There may be cases in which tube feeding should also be considered as an option.[6]

It is crucial that family members and the staff involved establish a close relationship so that they can report to and consult each other when a change is noticed and discuss any concerning issues that may arise.

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