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Abstract

Phagophobia is a disorder characterized by a conditioned excessive fear of eating and is initiated by an event such as vomiting or choking. During childhood, vomiting often occurs as a result of infection or overeating, and painful experiences bring about maladaptive eating behavior like food refusal. There have been few reports of phagophobia, and patients have sometimes been misdiagnosed with anorexia nervosa (AN). The objective of this study was to elucidate the psycho-pathology and current treatment of patients with phagophobia by analyzing case studies. We describe 6 cases with phagophobia. Patients with strong obsessions were refractory to treatment, indicating that evaluation of premorbid personality is crucial to the prognosis. It is important to classify this disorder according to psycho-pathology into "post-traumatic type" and "gain-from-illness type" to make a treatment plan. A solution focused approach is also effective for patients and their family. Paying close attention to these conditions and to the diagnostic concept referred as "phagophobia" is useful in achieving these aims.

KEYWORDS: phagophobia, functional dysphagia, eating disorder, premorbid character, solution focused approach

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Original Article

A Study of Psycho-pathology and Treatment of Children with Phagophobia

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Phagophobia is a disorder characterized by a conditioned excessive fear of eating and is initiated by an event such as vomiting or choking. During childhood, vomiting often occurs as a result of infection or overeating, and painful experiences bring about maladaptive eating behavior like food refusal. There have been few reports of phagophobia, and patients have sometimes been misdiagnosed with anorexia nervosa (AN). The objective of this study was to elucidate the psycho-pathology and current treatment of patients with phagophobia by analyzing case studies. We describe 6 cases with phagophobia. Patients with strong obsessions were refractory to treatment, indicating that evaluation of premorbid personality is crucial to the prognosis. It is important to classify this disorder according to psycho-pathology into "post-traumatic type" and "gain-from-illness type" to make a treatment plan. A solution focused approach is also effective for patients and their family. Paying close attention to these conditions and to the diagnostic concept referred as "phagophobia" is useful in achieving these aims.

Key words: phagophobia, functional dysphagia, eating disorder, premorbid character, solution focused approach

We saw many children presenting with a chief complaint of food refusal and weight loss. The most common diagnosis for these children is anorexia nervosa (AN). Many recent studies have reported an increase in the number of child patients with AN. The characteristics of AN are eating behavior problems, obesity phobia, impairment of physical cognition, and amenorrhea, according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth

Edition, Text Revision (DSM-IV-TR) of the American Psychiatric Association [1]. However, some patients do recognize that they are underweight and do not fit the diagnostic criteria for AN. In particular, children who begin to exhibit food refusal as the result of an event such as vomiting or choking understand that treatment is necessary, and thus manifest a pathology differing from that of AN. "Phagophobia" thus appears to be the diagnosis best expressing the characteristics of this pathology. We describe herein 6 cases with phagophobia. There have been few reports of phagophobia, and patients have sometimes been misdiagnosed with AN. The objective of the present

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study was to elucidate the psycho-pathology of and current therapy for phagophobia by analyzing case studies.

Subjects and Methods

Subjects. Subjects provided informed consent to participate in this study. There were 6 patients with phagophobia in 314 outpatients, who visited the pediatric psychosomatic clinic at Okayama University Hospital during 5 years from April 1999 to March 2004. Phagophobia was defined as a refusal to eat for more than 1 month due to a conditioned excessive fear of eating, initiated by an event such as vomiting or choking, and resulting in a physical or psychosocial disorder. Phagophobia was diagnosed after the exclusion of food refusal secondary to organic or psychiatric disorders. Patients included in the study were those who exhibited a level of fear indicated for specific phobia (other types) of DSM-IV-TR.

Methods. Clinical records of the 6 patients were used to determine premorbid personality, psycho-pathology, treatment course, and prognosis. This study was carried out carefully, considering the obligation to maintain patient privacy and protect their rights.

Of the premorbid personality types, particular attention was given to the obsessive type. The DSM-IV-TR does not permit diagnosis of personality disorders in childhood. We therefore designated as a "deviation" any personality trait. It was noted by multiple individuals or in multiple settings. The patients had deviant character and appeared obstinate to family members and others, with this behavior being evident by comparison with other children of the same age.

Phagophobia was classified into 2 types (Table 1): post-traumatic type (persistent symptoms caused by conditioned fear resulting from traumatic experience); and gain-from-illness type (symptoms persist due to gain from illness). These classifications were based on 2 types of functional dysphagia that have been reported [2]: conditioned dysphagia (conditioned dysphagia following a traumatic episode) and conversion dysphagia.

Results

The characteristics of 6 subjects, classified

Table 1 Variation of phagophobia

Post-traumatic type	A conditioned fear of eating maintains their symptoms
	An experience of gagging/choking/vomiting causes psychic trauma
	Cognitive and adjustment abilities affect prognosis
Gain-from-illness type	A gain from illness maintains their symptoms
	Conversion symptoms allow the patient to avoid conflicts
	Ability to resolve conflicts affects prognosis

according to premorbid personality and psycho-pathology, are shown in Tables 2–3.

Incidence of patients with Phagophobia.

We had 6 patients with phagophobia of 314 outpatients. Forty-six patients (14.6%) complained of eating behavior problems, including food refusal (dysphagia, appetite loss, etc.), and weight loss or poor weight gain. Of these, 22 patients (47.8%) were diagnosed with AN, 6 (13.0%) were with phagophobia, 3 (6.5%) with psychogenic vomiting, 2 (4.3%) with functional dysphagia, and 13 (28.3%) with other disorders. Although bias was introduced by the fact that the Department of Psychiatry in our hospital predominantly treats AN of adolescence, 13.0% of patients who presented with maladaptive eating problems were diagnosed with phagophobia.

Premorbid personality. Cases 1 and 2 had no premorbid behavioral deviations. Cases 3 and 4 exhibited obsessionality and fearfulness, and began to exhibit nervous habits. Cases 5 and 6 were highly impulsive and demonstrated low tolerance for frustration. Although the experiences of patients with vomiting were similar, cases 3 and 4 experienced more intense fear and were considered refractory to treatment due to differences in their ability to cope with stress as a result of their premorbid personalities.

Treatment course. After we diagnosed the patients with phagophobia, we explained to them and their families that treatment would enable the patient to eat. If the patient was markedly undernutrition, priority was given to physical management. Hospitalization was therefore necessary in all except case 1. "Finding exceptions to the problem" (i.e., look for circumstances in which the patient was able to eat), which is one of techniques of the solution focused

Table 2 The Patients with phagophobia

Patient No.	Patient character				Symptoms		Family character			Type of phagophobia
	Age (years)	Sex (M=Male, F=Female)	Premorbid eating habits	Premorbid character	Trigger event	Chief complaint	Single Parent	Family problems	Forcing the patient to eat	
1	5	F	none	easygoing	vomiting from eating too much	fear of vomiting difficulty of swallowing	—	none	+	Post-traumatic
2	15	F	none	easygoing	vomiting from acute gastroenteritis	fear of vomiting nausea after eating	+	father died sister with mental retardation	+	Post-traumatic
3	8	F	small appetite picky eating	neurosis obsessive fearful	looking her mother vomiting	fear of vomiting difficulty of swallowing nausea after eating	—	none	+	Post-traumatic
4	10	F	small appetite diet therapy due to atopic dermatitis	neurosis obsessive fearful	vomiting from acute gastroenteritis	fear of vomiting difficulty of swallowing appetite loss	—	lack of friendship in school	+	Post-traumatic
5	11	M	none	impulsive immature hyperkinetic	vomiting from chemotherapy	fear of vomiting appetite loss	+	mother's new boyfriend	+	Gain-from-illness
6	10	F	none	impulsive immature	vomiting from acute gastroenteritis	fear of vomiting nausea and heartburn after eating	—	lack of friendship in school	+	Gain-from-illness

approach (SFA), was effective in all cases. If the disorder was not cured with initial treatment, the type-specific approach proved effective. For the post-traumatic type, behaviors for coping with the fear associated with eating (*i.e.*, abdominal breathing, drawing, *etc.*) were practiced. For the gain-from-illness type, symptoms were downplayed, other forms of self-expression were encouraged, and manipulation of the patient's environment was needed.

Prognosis. All but cases 3 and 4 were cured within 6 months. However secondary problems such as refusal to attend school emerged in 3 cases (cases 3, 4, and 6).

Presentation of cases. The chief complaint in all cases was a fear of vomiting. When urged to eat, patients experienced intense fear and exhibited reactive behaviors (screaming, angry outbursts, long silences, *etc.*) and complained of various gastrointesti-

nal symptoms such as nausea, heartburn, and abdominal bloating. We describe below case reports of 3 typical patients. To protect patient's privacy, details of the cases have been altered to an extent that does not detract from the substance of the article.

1. No deviation of premorbid personality, post-traumatic type.

Case 1: 5-year-old girl, kindergarten.

Premorbid personality: No marked deviation.

History of present illness: After vomiting due to overeating, the patient became fearful of vomiting and her appetite decreased. Over a period of 4 months, her weight decreased by 2.0 kg. At the first visit, she was 111.4 cm tall, weighed 18.9 kg, and displayed an obesity index of -4.1% .

Measures taken by the family: Her father was inconsistent, and he tried to prompt her to eat through admonishments and scolding. The patient

Table 3 Therapy and prognosis of patients with phagophobia

Patient No.	Therapy				Psychotherapy			Outcome	
	peripheral transfusion	Inpatient	Tube feeding	IVH	Solution focused approach	Practice stress management	environmental manipulation	Duration of treatment (Y = Year, M = Month)	Prognosis
1	—	—	—	—	+	+ (walking, taking bath)	—	6 M	Cure
2	+	+	—	—	+	—	—	4 M	Cure
3	+	+	+	+	+	+ (self relaxation, dancing)	+	4Y	Improve
4	+	+	—	—	+	+ (self relaxation, drawing)	+	1Y 6 M	Cure
5	—	+	—	+	+	+ (self relaxation, chewing some sweets)	+	5 M	Cure
6	+	+	—	—	+	—	+	3 M	Cure

became increasingly nervous and unable to eat.

Treatment course (6 months): We explained to her parents that the child was temporarily experiencing a fear of eating after vomiting. We asked them to find exceptions to the problem. The parents switched from trying to force her to eat to seeking circumstances in which she could eat. As a result, her parent's responses changed, the patient's anxiety levels decreased, and her food intake increased. When she was feeling bad or troubled, she also began to take measures to cope with these feelings. She realized that taking a bath or going for a walk was effective. While she was engaged in these coping measures, she received praise from her parents, creating a virtuous circle. The patient's weight began to increase, and symptoms did not recur within 6 months.

2. Deviation of premorbid personality, post-traumatic type.

Case 3: 8-year-old girl, 2nd grade of elementary school.

Premorbid personality: Anxious and scared of various things, including animals, loud noises, and water. The patient exhibited separation anxiety and was reluctant to go to kindergarten. She also exhibited strong obsessions and angrily accused others of failing to keep promises. We suspected that her diagnosis was Asperger's disorder, but she did not fit the criteria because her language development was normal, no impairment of communication was observed, and no restricted interest or stereotyped behavior was apparent.

History of present illness: After experiencing about of vomiting and diarrhea at 3 years old, she worried whether she would vomit whenever she felt poorly. In the 1st grade of elementary school, she began to have difficulty swallowing saliva. After seeing her mother vomit in 2nd grade, she began chewing and spitting out food. Over a 6-month period, her weight decreased by 3.0 kg, and she began to refuse to attend school. At the first visit to our clinic, she

was 131.2 cm tall, weighed 21.2 kg, and displayed an obesity index of -29.3% . Although she was able to put large amounts of food in her mouth, she was unable to swallow it, and became nauseated if even small amounts of food were in her stomach.

Measures taken by family: Because her family urged the patient to eat, she would panic out of fear. She began to eat alone and could only take food that she herself had prepared.

Treatment course (over 4 years, ongoing): We explained phagophobia to her parents and asked them to find circumstances in which she could eat. Her activity, however, was very poor and it was difficult to find exceptions to the problem. The patient's weight decreased to 19.0 kg and her obesity index to -36.7% . She was hospitalized with severe dehydration. No abnormalities were seen on magnetic resonance imaging (MRI) of the head and neck, examination of the ear, nose and throat, or upper gastrointestinal endoscope. The patient was fed by intravenous hyperalimentation (IVH) during her first hospitalization (9 months), and by tube feeding during her second hospitalization (4 months). During the second hospitalization, she became aware that she could swallow saliva when she relaxed. We explained her mind and body relationship and suggested that if she gradually practiced swallowing, her stomach would become accustomed to it. She underwent desensitization therapy that began with abdominal breathing and small amounts of food that increased stepwise. She also began dancing before meals in order to relax. The fact that the coping measures that she herself devised increased food swallowing gave her confidence. After 2 years, she began to attend school occasionally, and she was able to resume school attendance in 6th grade. As of the time of writing, she is 141.9 cm tall, weighs 26.0 kg, and has an obesity index of -27.8% . She is currently receiving anti-anxiety medication and undergoing follow-up.

3. Deviation of premorbid personality, gain-from-illness type.

Case 5: 11-year-old boy, 5th grade of elementary school.

Premorbid personality: The patient was gentle, but had been raised in a permissive fashion and sometimes behaved selfish. At school, he was hyperactive and highly impulsive, and he displayed problematic behaviors such as classroom disruption and bullying.

History of present illness: When he was 10-years-old, the patient underwent surgery for resection of a brain tumor, followed by radio- and chemotherapy. During therapy, he began to vomit frequently, despite receiving anti-emetic medication. Vomiting persisted after treatment was completed. The patient refused food for fear of vomiting. Over a 6-month period, his weight decreased by 5.0 kg. He was 131.2 cm tall, weighed 21.2 kg, and displayed an obesity index of -18.5% .

Measures taken by family: His mother saw the patient on an irregular basis, due to taking care of his sister and meeting her boyfriend. When he was vomiting, his mother stayed longer by his bedside.

Treatment course (5 months): Cranial MRI and an upper gastrointestinal endoscope excluded organic disease. The affection of radio- and chemotherapy was also excluded because of an atypical onset period. The mother was concerned about a recurrence of the brain tumor, although she was relieved at the examination results. We explained her son's condition as phagophobia and asked the mother about circumstances in which he was prone to vomiting. She recalled that he often vomited in her absence, and suggested that he may be lonely. We suggested that she spend time with her son on a regular basis.

The mother and nursing staff decided that the patient would be given attention not when symptoms occurred, but instead when he was able to suppress symptoms. The patient decided to try measures such as chewing gum or putting something sweet in his mouth. The fact that his weight increased as a result of his method gave him confidence. His mother praised him for his efforts, creating a virtuous circle. His weight increased to 25.0 kg, with an obesity index of -10.0% , and he was discharged. After resuming school attendance, he exhibited favorable group adjustment and no problematic behaviors. No recurrence of phagophobia occurred, but the patient died 2 years later due to a recurrence of the primary disease (brain tumor).

Discussion

Diagnosis of patients with maladaptive eating problems.

Disorders associated with eating represent some of the most common problem behaviors in children, although there have been few reports of

these disorders except for AN [2, 3]. The diagnostic criteria are still confused, and Shapiro [4] has reported that phagophobia is frequently misdiagnosed. In this study, 3 cases were misdiagnosed with AN by the primary physician. Consequently, the patients and their family were pessimistic about the prognosis. To assist in diagnosis, we have provided a diagnostic map (Fig. 1).

Phagophobia is distinguished from AN by the absence of an impairment of physical cognition. Patients with phagophobia fear eating, while patients with AN fear the results of eating such as weight increases and changes in body type. The primary

object of fear thus differs significantly between these 2 types of disorders. Patients with phagophobia are cooperative regarding treatment, while those with AN are not.

Tadanori [5] described that the diagnostic criterion for establishment of functional dysphagia (FD) is a case in which a child who presents with a chief complaint of being unable to swallow water or solids has exhibited dysphagia for more than 2 weeks with no apparent organic changes to the gastrointestinal tract, and in which psychosocial factors are thought to be contributing. The difference between phagophobia and FD is that patients with phagophobia learn to fear not

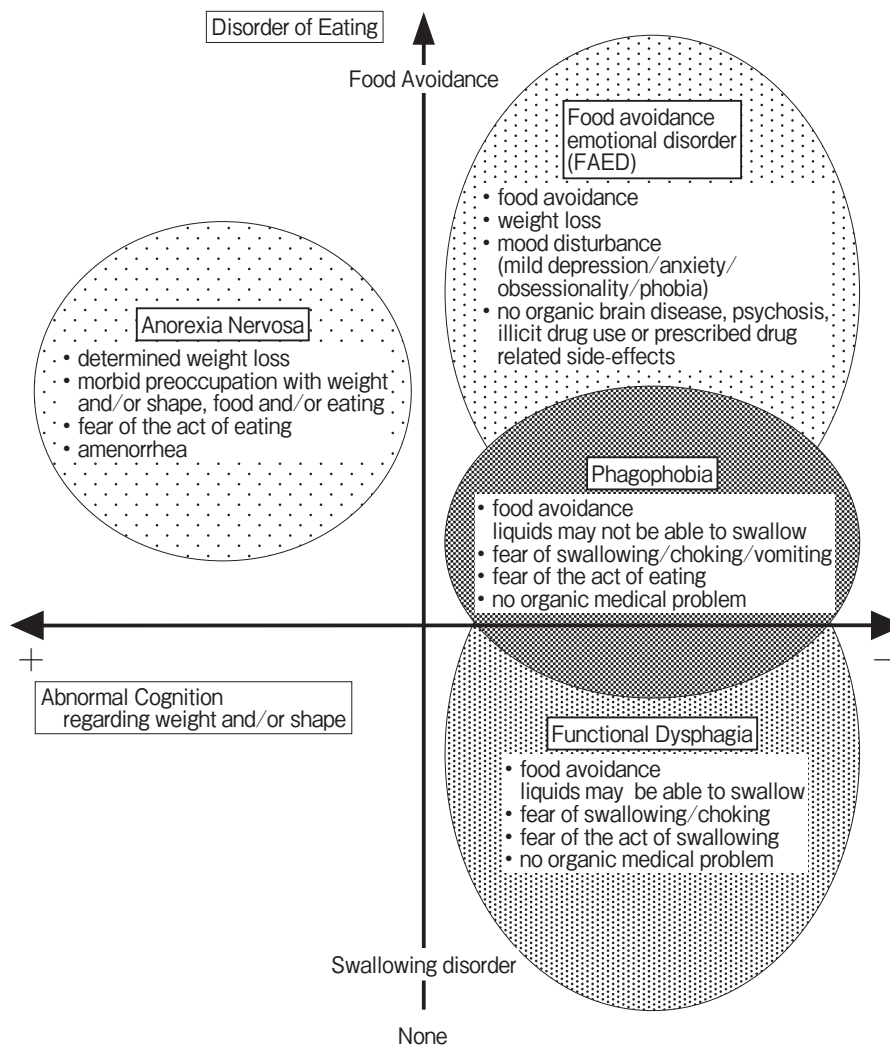


Fig. 1 Diagnostic map for patients with food avoidance and disorder of swallowing.

only swallowing, but also the entry of food into their stomach. Consequently, they experience a variety of symptoms such as nausea, heartburn, and abdominal bloating. Patients with FD, on the other hand, predominantly complain of difficulty swallowing. As liquids are easier to swallow than solids, many patients with FD are able to consume liquids and few cases of FD become severe [5, 6]. With phagophobia, the types of food that can be eaten vary depending on the level of fear, and therefore the severity of symptoms also varies. In cases 1, 3, and 4, the patients complained of being unable to swallow solids, liquids, and even saliva. Therefore phagophobia and FD can be considered to exist on a continuum.

Higgs [7] has proposed the classification of food avoidance emotional disorder (FAED) as an intermediate emotional disorder between AN and emotional disorders without food refusal. As an emotional disorder, the condition is characterized by food refusal, eating little food or picky eating that persists for more than 1 month, and an absence of the impaired physical cognition seen with eating disorders. Characteristics of the emotional disorder include anxiety, depression, obsessions/compulsions, and fear [8]. Phagophobia can thus be considered a type of FAED in which fear is the principal characteristic.

Consequently, patients with maladaptive eating problems have different backgrounds, though the therapist must pay attention to diagnosis and must be mindful of the existence of the disease groups mentioned in this article.

Psycho-pathology of phagophobia. During childhood, vomiting often occurs as a result of infection or overeating, and painful experiences cause transient fear. Although the conditions of the patients were physically serious, all cases that we encountered except cases 3 and 4 were cured within 6 months. Premorbid personalities in cases 3 and 4 were obsessive. Kim [9] has reported that FD and organic dysphagia display no difference with respect to frequency of complicating psychological problems in adults. However, children with complicating psychological problems are reportedly prone to the formation of inappropriate eating behaviors [10]. Okuma [11] has described that obsessive children are unable to eat or relax while eating unless the food is in a specific shape. Based on these findings, we concluded that patients with obsessive premorbid personalities tend

to be refractory to treatment.

The role of family is also important. Lynn [12] has reported 3 cases with food phobia and significant psychological stressors were also noted in each family. As indicated in Table 2, domestic discord was present in cases 3–6. Inadequate communication in the family directly affects mealtime circumstances and increases family tension. It was setting the stage for the disorder. In addition, all of the families that had forced their child to eat had made the symptoms more severe. The children engaged in avoidance behaviors in response to fear, and refused to eat in an effort to maintain psychological stability. The family urged them to eat increased patient anxiety, resulting in the emergence of gastrointestinal tract symptoms. These symptoms further increased the patient's anxiety about their bodies, in turn exacerbating their fear and creating a vicious circle. The severity of the preexisting family discords and the subsequent reaction of the family were the factors that influenced the severity of the disorder.

To understand the psycho-pathology of phagophobia, it is also important that it be classified into 2 types. The post-traumatic type is acute onset and the core of symptoms is phobia. The gain-illness type also has some trigger, but the core of symptoms is conversion, so improvement of symptoms requires circumstance manipulation.

Treatment strategy for Phagophobia (Fig. 2). The authors' views regarding appropriate treatment plans are indicated below (numbers of corresponding figures are indicated in brackets). We have described the approach for the patients and their family because the family plays a crucial role and cooperation of family members is essential.

When little deviation is observed in the premorbid personality and domestic discord is absent, as in cases 1 and 2, patients fall into the group described by Okuma [11]. They have normal childhood fears and require no psychiatric intervention. In such cases, the initial stage of treatment is effective and pediatric care can be adopted. However, in cases of strong obsession (deviated premorbid personality), as in cases 3 and 4, or cases of gain-from-illness type, as in cases 5 and 6, improvement is difficult and psychotherapy becomes necessary.

In the initial stage of treatment, we need to assess the patient's nutritional condition (1). In children, the

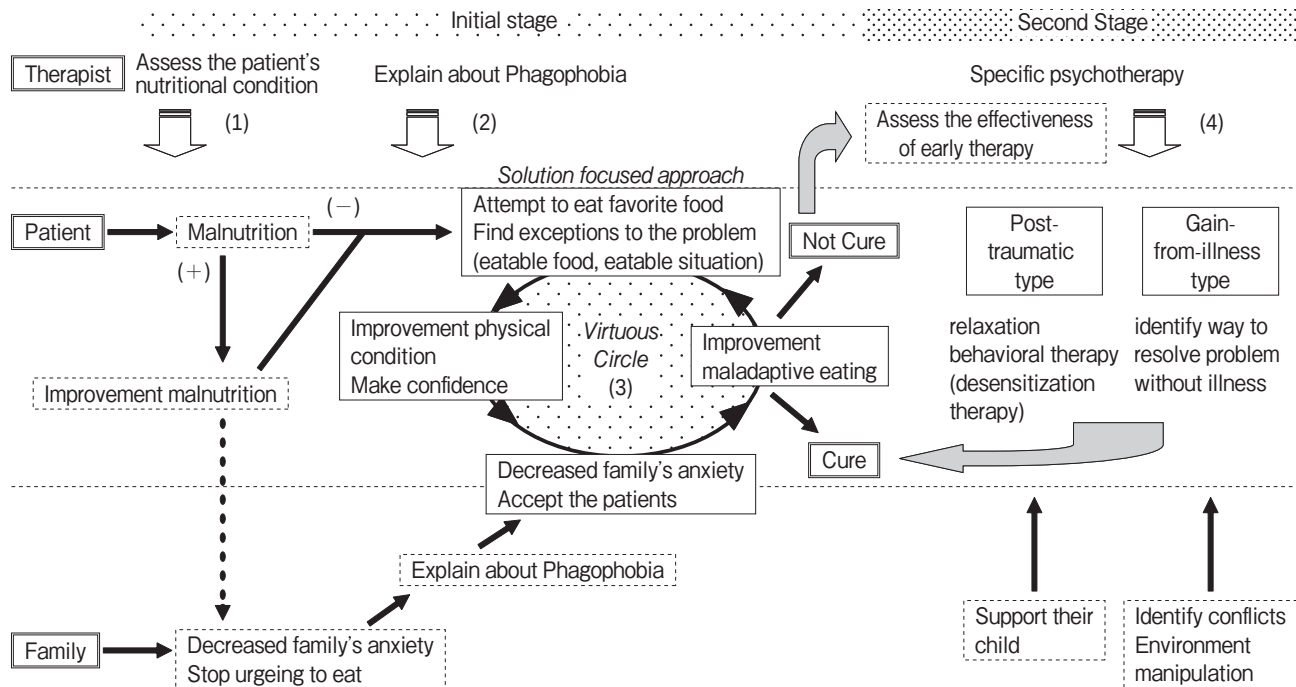


Fig. 2 Treatment Course. Therapeutic strategies for the patient and family with phagophobia.

malnutrition causes displeasure and increases tension between the parent and child. Weight gain and increased activity lead to motivation for treatment by the child and decreased family anxiety. To achieve a marked decrease in weight, forced nutrition such as IVH or tube feeding must be considered. Consequently, remedying malnutrition is a positive step in all cases.

The therapist then explains phagophobia while exhibiting sympathy for the anxiety of the patient and family (2). To reduce the anxiety levels of the patient, we require that the family not urge the patient to eat. If the family changes the response to acceptance, the patient will also resume eating small amounts of food. We then propose that the patient start eating his or her favorite foods. During this time, the therapist must explain beforehand that this behavior is not self-ish, is only temporary, and poses no nutritional threat.

In addition, the task of "finding exceptions to the problem" is presented as a challenge to the parents and children. This is one of the techniques of SFA,

which was developed by de Shazer *et al.* SFA asserts that clients already know what to do to solve the complaints; they just do not know that they know. Therapists help them construct for themselves a new use for knowledge they already have [13]. Emphasis is placed on the solution (circumstances in which eating is possible) rather than the problem (circumstances in which food is refused). This technique of intervention was found to be very useful in this study. The tension between the parent and child decreased, and the family became treatment facilitators. In mild cases, improvement can be seen at this stage, and a virtuous cycle was created (3).

In the second stage, after the effectiveness of early treatment is assessed, a type-specific approach is begun (4). In cases of post-traumatic-type disorder, control of fear is the key to treatment, so that cognitive behavior therapy and hypnotherapy are useful. Both of these are also effective in treating choking phobia and functional dysphagia [3, 14, 15]. Behavior therapy (desensitization therapy) was found to be effective in case 3, and Ciyiltepe [16] has

reported the success of a combination of behavior therapy and a dysphagia management program. Although application of such treatment in children depends on their language comprehension, we used to use nonverbal techniques. We explain the relationship between mind and body to the patient and teach them to employ self-relaxation techniques such as abdominal breathing, autogenic training, and playing to relax. The patient then finds a means of overcoming the problem autonomously, thus gaining confidence.

For the gain-from-illness type, symptoms serve to eliminate a temporary problem. In case 5, the symptom produced the effect that his mother visited him frequently. In case 6, the symptoms produced the effect that she avoided her friends. We found the conflicts in the patients and worked together to find a new solution. Environment manipulation was also important. We must assure that attention due to lack of eating does not result in other secondary gains from the disorder.

Culbert [2] has stated that treatment involves not only the application of techniques, but also psychological training, and that through the process of acquiring coping behaviors, patient gain mastery of themselves, providing an important increase in self-respect. In the present cases, patients worked together with their families to formulate coping measures, and successes achieved by patients in this process enhanced their confidence, leading to positive results.

Limitation of this study. This study was a retrospective study based on assessment of medical records. We discussed levels of deviation for premorbid personality based on patient and family information. We could not use tests of character to confirm the patient's personality, except for drawing test and egogram test. It is not enough to assess the personality objectively. We will continue to examine patients with phagophobia as we accumulate cases.

Conclusion. We have described herein 6 cases of phagophobia. In recent years the number of patients with eating behavior problems has increased, and phagophobia is a useful diagnostic concept.

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