

# Choking phobia: full remission following behavior therapy

## Fobia de deglutição: remissão com terapia comportamental

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### Abstract

**Objective:** A phobic behavior pattern is learned by classical and operant conditioning mechanisms. The present article reviews the main determinants of choking phobia etiology and describes the behavior therapy of an adult patient. **Method:** Psychoeducation, functional analysis, and graded exposure to aversive stimuli were used to treat the patient, after extensive psychiatric and psychological assessment. Ingesta and anxiety levels were measured along treatment and at follow-up. **Results:** A multiple assessment baseline design was used to demonstrate the complete remission of symptoms after seven sessions, each of them exposing the patient to a different group of foods. **Conclusion:** Psychoeducation and exposure were critical components of a successful choking phobia treatment.

**Descriptors:** Choking phobia; Exposure therapy; Multiple baseline assessment design; Psychoeducation; Therapeutic relationship

### Resumo

**Objetivo:** O padrão comportamental da fobia é adquirido com base no condicionamento clássico e mecanismos operantes de aprendizagem. Este artigo faz uma revisão dos principais determinantes da etiologia da fobia de deglutição e descreve o tratamento da terapia comportamental em uma paciente adulta. **Método:** Foram usadas psicoeducação, análise funcional e gradativa exposição a estímulos aversivos no tratamento da paciente, depois de uma extensiva avaliação psiquiátrica e psicológica. Níveis de ingestão e ansiedade foram medidos ao longo de todo o tratamento e no follow-up. **Resultados:** Para demonstrar a completa remissão dos sintomas, após sete sessões de exposição a diferentes grupos de alimentos foi usado um delineamento de linha de base de avaliações múltiplas. **Conclusão:** Terapia de exposição e psicoeducação foram componentes que contribuíram de modo crítico para a obtenção de resultados positivos ao tratamento.

**Descritores:** Fobia de deglutição; Terapia de exposição; Delineamento de linha de base de avaliações múltiplas; Psicoeducação; Relação terapêutica

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## Introduction

Choking phobia was described by Chorpita, Vitali and Barlow as a condition characterized by intense fear of choking accompanied by avoidance of swallowing solid food, drinking and taking pills in the absence of anatomical or physiological abnormalities.<sup>1</sup> Patients may present a significant weight loss, about which they usually feel uncomfortable.

It is uncommon for choking episodes to precipitate pathological fear. Usually, panic attacks are the leading cause of fear conditioning. This occurs due to the presence of panic symptoms, like breathing difficulties, choking sensations and muscle tension during meals.

Fear respondents are elicited by the phobic stimuli and the patient learns to emit avoidance or escape behaviors as an attempt to reduce a hypothetical risk of choking. These escape and avoidance behaviors are characterized by a quantitative and qualitative restriction of food intake, as well as concerns about food texture, size of bite, and topographical changes in the eating response (head posture, muscle tension etc.). Patients start to eat slowly, thus leading to social dysfunction as patients prefer to avoid situations in which they are expected to eat at a faster pace.

There are no epidemiological data about choking phobia, due to the small number of cases reported in the literature. In 2001, De Lucas-Taracena and Ibarra reported 29 cases and, in a second literature review, performed five years later by the same group, an additional 12 new cases were reported.<sup>2,3</sup>

Regarding treatment, Solyom and Sookman published the first report about psychogenic dysphagia treatment.<sup>4</sup> They used aversive control techniques (electrical shock in the finger, which would be interrupted contingent upon the sign of a swallowing response), relaxation training and overt desensitization, among other procedures.

Alprazolam was tested by Greenberg, Stern and Weilburg in panic disorder patients with choking phobia.<sup>5</sup>

In 1994, McNally demonstrated that exposure based therapy (EBT) was successful in the treatment of choking phobia in an adult patient.<sup>6</sup>

Wielenska reported two successfully treated cases of choking phobia by means of associating different behavior therapy (BT) techniques (psychoeducation, discrimination of bodily states, relaxation training and exposure to fear stimuli).<sup>7</sup>

In the past, our research unit (AMBAN) assessed and treated eight cases of choking phobia (in preparation). There was a complete remission of symptoms, except for one patient who didn't accept BT. Given the lack of experimental control in the case series reported in the literature,<sup>1</sup> including our own, in present case, we opted for a multiple baseline assessment design to evaluate the efficacy of a BT program for a new choking phobia patient. In such design, problem behaviors are measured several times throughout the treatment, both before and after a series of planned therapeutic interventions.

An optimal level of experimental control would be achieved provided the following requirements were met:

- 1) required reduction in anxiety and avoidance behaviors towards a certain group of foods is contingent to exposure to that group,
- 2) required similar improvement after exposure to every other food group, until a complete remission of symptoms related to all kinds of food is obtained.

## Objective

The objective of the present study is to report on an experimental design allowing for a more precise assessment of a choking phobia treatment and the effect of each discrete exposure session.

## Method

### 1. Case study

#### 1) Patient

J, a 36 year-old married female, Business Administration graduate was referred to our unit to undergo BT. Phobic symptoms had started in Japan in 2000, after experiencing a choking incident with a plum kernel. She then progressively began limiting her intake of various food items by avoiding items she considered to be dangerous. Sometime later, while visiting relatives in Brazil, she experienced a second choking episode, which evoked aversive memories and aggravated her avoidant behavior. Although she lost 15 kilos in the following year, she failed to seek treatment.

J returned to Japan in 2001, where she gained only 5 kilos, as she continued to avoid the ingestion of food containing pieces of bone, seeds and kernel. She returned to Brazil in 2006, where family members and friends would tell her stories about people who had choked, thus aggravating her phobic avoidance and prompting her to seek professional help.

At this point, J had completely banished certain kinds of food from her diet, started to eat very small bites, which she would chew up to 80 times before swallowing them. She refrained from eating at social events because her meals would take as long as three hours.

The patient developed agoraphobic symptoms, such as avoiding tunnels and airplane bathrooms, finding herself unaccompanied inside elevators, immersing her head in a pool or letting water flow freely on her face. These avoidance behaviors were motivated by fear of choking, suffocation and death.

Inquired by a therapist, J reported that she wasn't happy with her lifestyle and marital relationship. When the first choking episode occurred, she had been working long hours on rotating shifts in so that weekends had become the only opportunity for she and her husband to be together as a couple. She had been routinely deprived of family and social contact. Although she did recognize her suffering and the unfulfilled expectations concerning her marital life, J didn't specifically complain about this.

#### 2) Procedure

The diagnosis evaluation consisted of Structured Clinical Interview for DSM-IV-TR Axis I Disorders-Patient Edition (SCID - I/P), version 2.0.<sup>8</sup>

Symptom severity assessments were held before and after treatment, in which the Clinical Global Impression (CGI),<sup>9</sup> the Hamilton Anxiety Scale (HAM-A)<sup>10</sup> and the Hamilton Depression Rating Scale (HAM-D)<sup>11</sup> scales were applied by an independent assessment expert.

The Patient signed the required informed consent forms.

Sessions 1-3: they consisted in data gathering to allow for the identification of behavioral problems and control variables, and for the establishment of a therapeutic alliance.

Session 4: the purpose was to provide psychoeducation, thus increasing adherence. J started to understand the dysfunctional aspects of her behavior i.e., poor communication skills and excessive rule control, and how these contributed to her anxiety. She understood that her avoidance behavior conditioning resulted from an interaction among her lack of coping skills, a stressful lifestyle and the choking episodes. J recognized that phobic avoidance was only useful in the short-term.

Therapeutic objectives were defined and exposure exercises were planned to give J the opportunity to improve her symptoms.

Sessions 5-12: they consisted in exposure to several food items. Before trying them, J was taught how to practice slow breathing and muscle relaxation. The patient was told to gradually increase bite sizes and reduce the number of times she chewed at each bite. As

homework assignment, J was expected to also eat at home every item that had been reintroduced in her diet during sessions. J was also asked to record her scores on the Subjective Units of Distress scale (SUDs),<sup>12</sup> both before and after assignments, and this allowed for future comparisons.

Follow-up sessions: follow-up interviews were conducted at weeks 18 and 47.

**Results**

The present case included psychiatric and psychological assessments, the gathering of retrospective data to retrace the history of phobia acquisition and the implementation of BT techniques. We would like to emphasize the contribution of aversive experiences to the development of phobic symptoms during a stressful life period.

BT procedures have produced habituation and remission of avoidance behaviors (Figure 1). A by-product of this was the application generalization of new coping skills to other stressful scenarios.

The patient’s session attendance rate was 100% of sessions and she fully cooperated by practicing exposure at the office and by performing her homework assignments. J’s adherence resulted from a combination of psychoeducation and the supportive and didactic nature of the therapeutic relationship. On previous occasions, her family and other health professionals had not succeeded in obtaining adherence because she had only been instructed to try certain foods at home. After psychoeducation, just a small amount of incentive was required to produce adherence. The result was a consistent behavioral change after one exposure session for each group of food.

Figure 1 summarizes the multiple baseline treatment outcomes, i.e. express the distress associated with eating versus exposure (number of portions eaten) at each session, thus supporting the hypothesis that exposure was a crucial component. Contact with different food items resulted in habituation to the aversive stimuli introduced in each session. Before exposure, there was complete avoidance and high anxiety levels. After sessions, anxiety ratings dropped to zero and avoidance was replaced by proper eating at home, practicing first alone, then, at social gatherings.

Therapeutic gains were sustained at follow-up with full remission

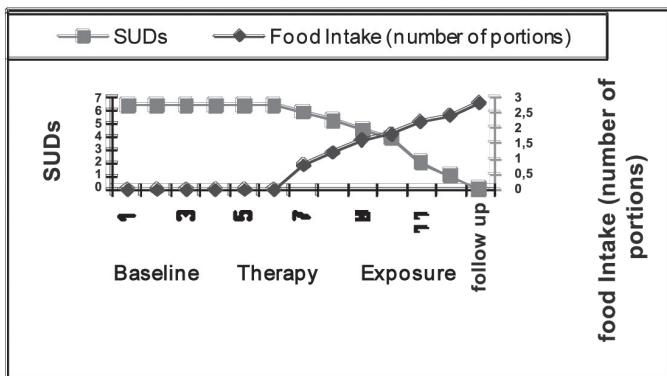
of symptoms. Appetite, food availability, nutritional needs and preferences assumed control over her behavior. The risk of choking in the presence of significant others was no longer a control variable.

At the second follow-up interview, she reported absence of avoidance and that the couple had started enjoying thirty-minute meals together. Each bite was chewed a maximum of 30 times. She gained six kilos. Social gatherings became pleasant occasions.

**Discussion**

Our hypothesis is that the two choking incidents, allied with an aversive lifestyle, formed a large class of equivalent aversive stimuli, of which several food items also became a part. Although plausible, this explanation needs to be submitted to further research. As psychoeducation shed light on the complex relationship that existed within her different life contexts, the patient learned to discriminate between past and present aversive contexts, and this contributed to the disruption of the generalization of aversive stimuli.

The present article provides a functional analysis of a choking phobia case and a quasi-experimental evaluation of the efficacy of a behavioral intervention, which embraced the functional analysis of an anxiety behavior pattern, psychoeducation, exposure therapy and homework assignments. Additional research is needed to assess the relevance of each treatment component, identify the mechanisms of behavior change and achieve a better understanding of the acquisition of choking phobia.



**Figure 1 - Mean values of distress and food intake (number of portions)**  
 SUDs: Subjective units of distress scale,<sup>12</sup> associated with food intake.

## Disclosures

Writing group member	Employment	Research grant <sup>1</sup>	Other research grant or medical continuous education <sup>2</sup>	Speaker's honoraria	Ownership interest	Consultant/ Advisory board	Other <sup>3</sup>
Silvia Scemes	Amban Projesq HC	-	-	-	-	-	-
Regina Christina Wielenska	Amban HC	-	-	-	-	-	-
Mariângela Gentil Savoia	Amban HC Caism Santa Casa	-	-	-	-	-	-
Marcio Bernik	Amban HC	-	-	-	-	-	-

\* Modest

\*\* Significant

\*\*\* Significant. Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.

Note: Amban = Anxiety Disorders Treatment Unit, HC = Hospital das Clínicas da Universidade de São Paulo, Caism = Centro de Atenção Integral à Saúde Mental da Santa Casa de São Paulo.

For more information, see Instructions for authors.

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