

### Olfactory Reference Syndrome as a Subtype of Body Dysmorphic Disorder

**To the Editor:** Olfactory reference syndrome (ORS) is a putative psychiatric condition whose main symptom is a belief that one emits an offensive body odor that is often noted by other people.<sup>1</sup> Although early authors suggested that mental disorders such as schizophrenia, affective disorders, somatoform disorders, and temporal lobe epilepsy should be excluded before a diagnosis of ORS is made,<sup>2</sup> other researchers have concluded that this condition may occur as a consequence of different neuropsychiatric conditions.<sup>3,4</sup>

Even though some authors<sup>1</sup> have suggested that all of their ORS patients were hallucinating, the core of the illness is regarded as delusional in *DSM-IV-TR*, particularly because several patients describe the odor graphically, with secondary illusional or hallucinatory misinterpretations.<sup>4</sup> To further complicate the issue, Pryse-Phillips<sup>1</sup> ORS patients reported frequent use of deodorant or excessive washing (82%) and unnecessary changing of clothes (68%). Therefore, it is sometimes unclear whether an individual complaining of an “imagined odor” has a hallucinatory or delusional disorder or, in fact, an obsessive-compulsive spectrum disorder.<sup>4-6</sup>

In this report, our goal was to contribute to the literature by providing a “snapshot” of a number of cases of ORS under treatment in several Brazilian university centers, all systematically evaluated with an assessment package specifically designed to capture the diverse psychopathology and personal history of ORS patients.

**Method.** Researchers at 7 university psychiatric services that comprise the Brazilian Research Consortium on Obsessive-Compulsive Spectrum Disorders<sup>7</sup> were asked to identify and evaluate patients with ORS under treatment in their clinics with an assessment package that included (1) the Olfactory Reference Inventory-Revised, a semistructured interview designed to capture diverse aspects of the psychopathologic and personal history of ORS patients (available from the authors on request); (2) the Yale-Brown Obsessive Compulsive Scale Modified for Olfactory Reference Syndrome (YBOCS-ORS), a 12-item semistructured clinician-rated instrument designed to rate severity of ORS (available from the authors on request); and (3) the Structured Clinical Interview for *DSM-IV* Axis I Disorders.<sup>8</sup> Declaration of Helsinki guidelines were followed, and the research was conducted from December 2004 to December 2006.

**Results.** We identified 14 patients with ORS (Table 1). Patients with ORS believe they have a physical problem and often seek evaluation and treatment with nonpsychiatric physicians.<sup>4,9-12</sup> In our sample, patients with ORS reported having been seen by a mean  $\pm$  SD of  $4.5 \pm 2.8$  different nonpsychiatric medical doctors. Indeed, individuals with ORS sought psychiatric treatment a mean of  $13.6 \pm 10.4$  years after the onset of subthreshold symptoms. This finding indicates that it is important to educate physicians on the main features of ORS to facilitate early recognition and avoid unwarranted delays in the treatment of this disorder.

It has been suggested that a single imaginary odor usually predominates as the focus of major concern in patients with ORS.<sup>13</sup> In fact, while the most frequent complaint of our ORS sample involved an unpleasant odor of sweat (71.4%;  $n = 10$ ) emanating from the patient's armpits (57.1%;  $n = 8$ ), the majority of the patients reported a significant concern over 2 or more independent unpleasant body odors, a phenomenon that mirrors that found with regard to physical defects in body dysmorphic disorder (BDD).<sup>14</sup> Also, some of our patients with ORS reported olfactory

experiences that changed in content (28.6%;  $n = 4$ ) and/or in origin (14.3%;  $n = 2$ ) over time.

Perhaps because of our selection methods, researchers categorized the olfactory experience as an obsession or overvalued idea in most cases (64.3%;  $n = 9$ ). Only 21.4% of our sample was characterized as delusional, thus suggesting that it may be inappropriate to classify ORS as a delusional disorder. Further, all patients displayed compulsive rituals, especially excessive washing (64.3%;  $n = 9$ ); use of exaggerated amounts of deodorant, soap, cologne, or powder (64.3%;  $n = 9$ ); frequent clothes changing or laundering (57.1%;  $n = 8$ ); and persistent reassurance seeking (57.1%;  $n = 8$ ). The mean YBOCS-ORS total score (possible range, 0–40) was  $27.7 \pm 6.1$  (severe). Accordingly, obsessive-compulsive symptoms were often present in the cases previously reported in the literature.<sup>1,11,15-19</sup>

Major depressive disorder (MDD) and obsessive-compulsive disorder (OCD) were the most common comorbid psychiatric conditions, described in 71.4% ( $n = 10$ ) and 50.0% ( $n = 7$ ) of our patients, respectively. The remarkably high prevalence of MDD is consistent with previous reports of patients with ORS.<sup>4,20</sup> It must be noted that MDD and OCD were found to be the most common comorbid psychiatric disorders among patients with BDD from different cultures,<sup>14,21</sup> thus suggesting that ORS may be a variant of BDD. Unfortunately, because we did not collect data on the age at onset of every psychiatric disorder presented by our patients, we were unable to determine whether the disorders were primary or secondary conditions.

Almost all patients reported a fear of causing disgust (92.9%;  $n = 13$ ), a phenomenon that has been described as a central feature of the so-called “congrite reaction,” ie, a deeply ashamed, embarrassed, self-abasing, and sensitive reaction to the patient's own odor.<sup>1</sup> Indeed, as Phillips et al<sup>13</sup> suggested, the syndrome is sometimes defined in terms that emphasize the fear of offending others—for example, “an anxious fear or conviction that one emits bad odors that offend other persons.”<sup>22</sup> The resulting anxiety leads to dysfunctional avoidant behaviors in the social realm, including sitting far from others or moving as little as possible to avoid spreading the supposed odor.<sup>11,19,22</sup> In our sample, avoidance behaviors were rated at least as severe in 57.1% of the cases, a phenomenon also known to occur in BDD.

The suffering resulting from ORS has been reported to lead to suicidal ideation,<sup>4,11</sup> suicidal behavior,<sup>10,17,23,24</sup> and even completed suicide.<sup>25</sup> Lifetime suicidal ideation was reported by 64.3% ( $n = 9$ ) of our ORS patients, and past suicidal behavior was endorsed by 21.4% ( $n = 3$ ). These rates of suicidal ideation and behavior were closer to those reported by North American (78% and 28%, respectively)<sup>26</sup> and British outpatients with BDD (24% with a history of suicidal behavior)<sup>27</sup> and higher than those exhibited by Pryse-Phillips' ORS patients, who described either suicidal ideation or suicidal behavior in 43% of cases.<sup>1</sup> Although we were unable to establish whether these symptoms could be specifically ascribed to ORS, we suggest that the latter condition could at the very minimum foster the morbidity among our patients.

Since ORS often goes undiagnosed in different clinical settings, there is a need for better recognition of this disorder. This would enable clinicians to provide appropriate clinical monitoring and treatment of these high-risk patients.<sup>13</sup>

Although available data on treatment are still limited, published case series support the use of a serotonin reuptake inhibitor (SRI), as a beneficial effect was reported in 10 of 15 (67%) cases.<sup>13</sup> Accordingly, all of our patients with ORS were treated naturally with an SRI, either alone or in association with an antipsychotic (35.7%;  $n = 5$ ). Furthermore, we found that 6 of 7 ORS

Table 1. Summary of the Characteristics Exhibited by Olfactory Reference Syndrome Patients in the Study

Patient	Age (y)/ Sex	Age at Onset (y)	Triggering Factors	No. of Nonpsychiatric Doctors Seen	Types of Nonpsychiatric Doctors Seen	Content of the Odor	Comorbidity (SCID)	Age at First Psychiatric Treatment (y)	Drug Treatment	ORS Response
1	31/M	20	Comment by others	10	Gastroenterologist, otolaryngologist, proctologist, allergist Dermatologist, general practitioner	Feces	MDD	21	SRI/antipsychotic	Partial
2	28/M	23	NA	3	Dermatologist, general practitioner	"Bad breath," sweat, and "fetid odors"	Dysthymia	23	Antipsychotic	Absent
3	70/F	66	NA	NA	NA	"Sour smell"	OCD; social phobia; delusional disorder, somatic type	66	SRI	Complete
4	26/M	22	NA	4	Gastroenterologist, otolaryngologist, neurologist, pulmonologist general practitioner, acupuncturist	"Sewage"	MDD	22	SRI	Absent
5	52/F	34	Comment by others	5	Dermatologist, pediatrician, endocrinologist General practitioner	"Rotten animals and dog food"	MDD, BDD	34	SRI/antipsychotic	Partial
6	20/F	16	Rain	2	Pediatrician, endocrinologist	Sweat	OCD	17	SRI	Partial
7	24/F	21	Rain	1	General practitioner	"Stinky feet"	MDD, OCD, social phobia	21	SRI	Complete
8	31/M	19	NA	None	None	Sweat, "stinky feet," and flatulence	MDD, OCD, social phobia, autism	18	SRI	Complete
9	50/F	19	NA	NA	NA	Feces and sweat	OCD, social phobia, hypochondriasis	NA	SRI	Partial
10	29/M	17	NA	None	None	Sweat, "stinky feet," and urine	MDD, OCD	26	SRI	Absent
11	42/F	33	Childbirth	6	Dermatologist	Sweat	MDD, social phobia	33	SRI/benzodiazepine/ antipsychotic	Partial
12	36/F	31	NA	NA	NA	"Bad breath," sweat, and cigarette	MDD, OCD	35	SRI/benzodiazepine	Partial
13	58/M	51	NA	5	Dermatologist, general practitioner	"Bad breath," sweat, "fetid odor," "sewage," "stinky feet," and "sour"	MDD, social phobia	58	SRI	Absent
14	27/F	25	Comment by others	5	Gastroenterologist, dermatologist, general practitioner	Feces, sweat, and urine	MDD	25	SRI/antipsychotic	Absent

Abbreviations: F = female, M = male, MDD = major depressive disorder, NA = not available, OCD = obsessive-compulsive disorder, ORS = olfactory reference syndrome, SCID = Structured Clinical Interview for DSM-IV, SRI = serotonin reuptake inhibitor.

patients with OCD were rated as at least partial responders, while 4 of 7 patients without OCD were rated as nonresponders, thus suggesting that identifying the pattern of comorbidity of ORS patients may have considerable impact on treatment decisions, with good response to an SRI seen in patients with ORS plus OCD.

Our study has some significant limitations. First, we enrolled only a small convenience number of patients, who were assessed by different examiners with a limited number of instruments. Yet, one should take into consideration that this is a remarkably rare disorder that could only be investigated due to the existence of a national research consortium whose researchers exhibited quite satisfactory interrater reliability.<sup>7</sup> Second, the high prevalence of OCD-like features in our sample of patients with ORS could be ascribed to an ascertainment bias; that is, since these volunteers were recruited in university clinics specialized in OCD, it would be expected to find several cases with obsessive-compulsive symptoms. Nevertheless, it should be emphasized that comorbid OCD was much less common than comorbid MDD, as it was found in only half of the sample. Although we could not rule out the occurrence of ascertainment bias, the latter observation suggests that this phenomenon may not be as significant as initially thought.

To unveil the proper nosologic position of ORS, further clinical, follow-up, family, and psychobiological studies should carefully investigate the role of ORS, either as a subtype of another OCD spectrum disorder (eg, BDD) or as a specifier of OCD.

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Angélica M. Prazeres, PhD  
 Leonardo F. Fontenelle, MD  
 lfontenelle@gmail.com  
 Mauro V. Mendlowicz, MD  
 Maria A. de Mathis, PhD  
 Ygor A. Ferrão, MD  
 Nara Fabíola Costa de Brito, MD  
 Juliana B. Diniz, MD  
 Christina H. Gonzalez, MD  
 Lucas C. Quarantini, MD  
 Rogério P. Marrocos, MD  
 Eurípedes C. Miguel, MD

**Author affiliations:** Anxiety and Depression Research Program, Institute of Psychiatry, Universidade Federal do Rio de Janeiro (IPUB/UFRJ), Rio de Janeiro (Drs Prazeres, Fontenelle, and Mendlowicz); Department of Psychiatry and Mental Health, Institute of Community Health, Universidade Federal Fluminense (MSM/UFF), Niterói (Drs Fontenelle and Mendlowicz); Department of Psychiatry, University of São Paulo Medical School (FMUSP), São Paulo (Drs de Mathis, Ferrão, de Brito, Diniz, and Miguel); Department of Psychiatry and Medical Psychology, São Paulo Medical School, Universidade Federal de São Paulo (EPM-UNIFESP), São Paulo (Dr Gonzalez); University Hospital, Universidade Federal da Bahia (UFBA), Salvador (Dr Quarantini); Department of Psychiatry, Universidade Estadual de Londrina (UEL), Londrina (Dr Marrocos), Brazil. **Potential conflicts of interest:** None reported. **Funding/support:** This work was supported by a grant from the National Council for Scientific and Technological Development (CNPq/Brazil) (process number: 420.122/2005-2 – Instituto do Milênio).

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