Case Report

Olfactory Reference Syndrome: Diagnostic Criteria and Differential Diagnosis

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Abstract:

Olfactory reference syndrome (ORS) has been defined as a psychiatric condition characterized by persistent preoccupation about body odour accompanied by shame, embarrassment, significant distress, avoidance behaviour and social isolation. ORS has however not been included in the Diagnostic and Statistical Manual of Mental Disorders (4th edition) (DSM-IV) and, given that its primary symptoms may be found in various other disorders, differential diagnosis can be problematic. Using an illustrative case of ORS, we propose diagnostic criteria for ORS. We also argue that ORS represents a unique cluster of symptoms that can be delineated as a separate diagnostic entity, and that ORS falls on a spectrum of social anxiety disorders that includes social anxiety disorder, taijin kyofusho, and body dysmorphic disorder. **(J Postgrad Med 2003;49:328-31)**

Key Words: Olfactory reference syndrome, Differential diagnosis, Social anxiety spectrum, Obsessive-compulsive spectrum, Psychotic disorder, Major depression.

Psychiatric patients sometimes present with persistent olfactory concerns or preoccupation with personal odour.[1-4] The term "olfactory reference syndrome" (ORS) has been introduced to differentiate primary olfactory concerns from those seen as a consequence of other disorders such as schizophrenia, depression or temporal lobe epilepsy.[2] Whether ORS truly is a unique disorder, or merely a part of the symptomatology of other psychiatric conditions, remains controversial.[5] ORS is not included in the DSM-IV[6] as a separate category. Arguably, the principal symptomatology of ORS has sufficient overlap with several established anxiety or somatic disorders that a new diagnostic category is not warranted. Conversely, although ORS may have phenomenological overlap with existing DSM-IV disorders, it has also been noted that most patients with primary ORS are young men without concurrent psychiatric disorders.[2]

"Olfactory reference syndrome" is characterized by persistent preoccupation with one's body odour; it is not included in current psychiatric nomenclatures.

In this paper we present a case study (a compilation of different patients with similar symptomatology) to illustrate the diagnostic process when olfactory concerns are prominent. Based on these considerations, diagnostic criteria for ORS are proposed, and other disorders that can be differentiated from ORS, are reviewed.

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Case History

A 22-year-old male who had a 'Western' cultural background, presented with the conviction that he had malodorous breath (halitosis) and a foul body odour emanating from his armpits, feet, and anal region. This persistent preoccupation had begun in early adolescence, but the intensity had increased significantly over the past 7 months. The halitosis complaint was presented as his main concern. In addition, collateral reports from his parents confirmed excessive washing and frequent changing of clothes. His embarrassment about the perceived halitosis gradually caused increasing social withdrawal and isolation and also resulted in depressive symptoms. Upon questioning, he indicated that he was not generally hypersensitive to odours and at times could acknowledge the excessiveness of his preoccupation with halitosis / body odour and the resulting avoidant behaviour. No history of classical obsessions, compulsions, hallucinations, delusional thinking or substance abuse was reported. He remained convinced that the halitosis persisted, despite reassurance to the contrary by his physician and close family members.

Clomipramine (150 mg daily) prescribed for 12 weeks had little effect. After a dosage increase to 250 mg daily, the patient reported improvement in his preoccupation and that his depressive symptoms had decreased. Cognitive-behavioural therapy was attempted. Despite some progress, he expressed relief when his father advised him to get better "on his own" and he consequently terminated all psychotherapy within 4 weeks. Telephonic follow-up 3 months later revealed that the symptoms remained significantly improved.

Discussion

Diagnosis of ORS

The symptoms reported by our patient are consistent with other cases of ORS presented in the literature.[2,3,5] Perhaps the closest DSM-IV diagnosis would be body dysmorphic disorder (BDD), although by definition BDD is characterised by a preoccupation with physical features rather than body odour.[6] On the other hand, the social anxiety and avoidance of interpersonal interaction also warrant consideration of a diagnosis of social anxiety disorder (SAD). However, in our patient's case, the fear of social situations was entirely secondary to concerns about body odour, and this primary focus on bodily symptoms is more reminiscent of BDD. At the time of presentation, our patient also qualified for a diagnosis of major depression but that appeared secondary to his olfactory concerns.

In the remainder of this discussion, we consider each of the differential diagnostic possibilities in greater detail. We conclude by offering diagnostic criteria that operationalise ORS as an independent disorder that may lie on the spectrum of social anxiety disorders.

Persistent preoccupation with body odour may be seen in a range of different psychiatric disorders, and such disorders must therefore be excluded in patients presenting with body odour concerns.

Differential diagnoses

i) Social anxiety disorder (SAD), avoidant personality disorder (APD) and *Taijin kyofusho:*

Patients with generalized SAD are anxious in many different social situations whereas patients with discrete SAD are fearful of one or two specific social situations (e.g. speaking in public or writing while being observed).[7] APD, on the other hand, is a pervasive pattern of social inhibition, feelings of inadequacy and hypersensitivity to negative evaluation.[7] Doubt exists whether APD is a clinically useful concept that is distinct from SAD,[8] or whether APD instead denotes a subgroup of patients with severe generalized SAD.[7] Mr X's social anxiety and avoidance were due to his olfactory concerns, warranting a diagnosis of ORS rather than SAD or APD. *Taijin kyofusho* or *taijin kyoufu* (TKS) is characterized by interpersonal sensitivity, with fear and avoidance of interpersonal situations.[6] The individual with TKS fears that his/her body or its functions, is offensive to other people in appearance or odour,[6,9] whereas in SAD the main focus of social fears is on embarrassing oneself. TKS cases where the focus is primarily on body odour can be conceptualized in terms of ORS. TKS has been reported primarily in the East[10] and has been characterized as 'culture-bound'.[11]

ii) Body dysmorphic disorder and hypochondriasis:

Some of the obsessive-compulsive spectrum disorders (OCSD) such as body dysmorphic disorder (BDD) and hypochondriasis have both obsessional and delusional variants. BDD is characterized by 'devastating' preoccupation with an imagined defect in appearance and marked distress over this supposed deformity.[6] Though the focus of patients with BDD is by definition on physical appearance, data exist on patients with BDD having obsessional concerns about odour.[12] Given the significant overlap between ORS and BDD, one can postulate that ORS is a variant of BDD and that the diagnostic criteria of BDD should be extended to include odour. In this conceptualization, BDD might fall on a spectrum of social anxiety disorders, in which symptoms clearly lead to social anxiety and avoidance.

Hypochondriasis, on the other hand, specifically requires a preoccupation with fears of having a serious disease based on the person's misinterpretation of bodily symptoms.[6] Even though our patient did have a preoccupation with an (imagined) physical symptom, he was not concerned about having an illness or about being unhealthy.

iii) Obsessive-compulsive disorder (OCD):

Most of the symptoms reported by our patient, met DSM-IV criteria for obsessions and compulsions and our patient might also be diagnosed as OCD with poor insight.[3] Nevertheless, our patient did not describe having any obsessions or compulsions other than those related to body odour or halitosis, whereas OCD patients tend to have multiple different kinds of symptoms over time.[13] Similarly, whereas avoidance of social situations on the basis of embarrassment associated with compulsive rituals is consistent with a diagnosis of OCD, avoidance based primarily on embarrassment or excessive fear of humiliation and rejection (because of olfactory concerns), would suggest a different diagnosis.[7]

iv) Major depression with social withdrawal:

Social withdrawal can also occur within the context of a major depressive episode. However, although patients with depression typically have a negative self-image and may avoid social situations,[6] this avoidance is usually not focused on concerns about body appearance, social situations or halitosis or body odour. Where depression and such symptoms co-exist, a careful chronological history may be particularly helpful. Interestingly, it has been suggested that mild to moderate de-

pression in patients with seasonal affective disorder may be associated with a more acute sense of smell whereas more severe (inpatient) depression is associated with lower olfactory sensitivity.[14] In our patient, psychiatric history indicated that the ORS, in fact, preceded depression and depression could be attributed to his extensive olfactory concerns (and not vice versa).

v) Psychotic disorders: delusional disorder (somatic type) and schizophrenia:
Delusions about personal odour (body odour and halitosis) can be described as an example of the somatic subtype of delusional disorder in the DSM-IV.[6] At times our patient maintained that his thoughts and behaviour were not unreasonable or excessive, and given this loss of insight, it is possible that his symptoms qualify as delusional. Nevertheless, the fact that his insight wavered would argue against the diagnosis of delusional disorder (somatic subtype).

Unlike patients with schizophrenia, who would typically consider prolonged hallucinations as an 'imposed' phenomenon, our patient was able to view his symptoms as originating in his own mind. In addition, our patient showed no evidence of the other symptoms characteristic of schizophrenia.

Diagnostic criteria for ORS are proposed, and it is suggested that ORS falls in a spectrum of other disorders characterized by social fears.

vi) General medical conditions and substance induced disorders:
There are a number of medical conditions that may be associated with a typical, sometimes foul odour, e.g. oral infection, skin conditions and various systemic problems.[15,16] The presence of these conditions should be ruled out before a primary diagnosis of ORS can be made. Also, obsessive and delusional thoughts about odours may be the consequence of a number of neurological disorders or substances.[17] In particular, right hemisphere pathology and consequent alteration of smell perception may facilitate the development of concerns about body odour.[18,19] A recent line of research has suggested that some behavioural disturbances including obsessive-compulsive symptoms may develop following streptococcal infection via an autoimmune process in which antibodies directed against bacterial antigens cross-react with brain targets paediatric autoimmune neuropsychiatric disorders associated with streptococcal infection or PANDAS).[20] In the case of Mr X, there was no evidence for such underlying disorders, substance use or infections. Depending on the nature of the body odour symptoms, it may be useful to do special investigations, including structural brain imaging, thyroid and adrenal hormone levels, and gas- chromatographic analysis of body fluids (to ascertain whether odours are in fact in the normal range).

Treatment implications

The question arises whether making a diagnosis of ORS rather than of one of the other disorders considered above has any treatment implications. Given its apparently close relationship with the social anxiety spectrum disorders, it would seem reasonable to consider a selective serotonin reuptake inhibitor (SSRI) and cognitive-behavioural intervention for the treatment of ORS. Although the literature on the pharmacotherapy and psychotherapy of ORS is sparse, it provides some support for this line of thinking.[3,21]

Conclusion

ORS can be defined as a psychiatric disorder characterized by persistent preoccupation with body odour (including halitosis), accompanied by significant distress and/or functional impairment. When compared with the existing DSM-IV diagnoses, ORS is perhaps most reminiscent of BDD. There also appears to be a significant overlap with SAD and particularly with the Eastern form of social anxiety known as TKS. Like these disorders, which perhaps fall in a spectrum of social anxiety disorders, ORS may respond to treatment with SSRIs.

Nevertheless, ORS does not currently fall within the existing DSM-IV diagnostic categories. It is possible to put forward specific diagnostic criteria (DSM-style) for ORS (Table 1) and to argue that ORS represents a sufficiently unique cluster of symptoms for it ought to be delineated as a separate diagnos-

Table 1: Proposed Diagnostic Criteria for Olfactory Reference Syndrome

A. A preoccupation with imagined body odour (including halitosis) that persists despite reassurance.
B. At some point during the course of the disorder, the person has recognized that the preoccupation (obsession / compulsion) is excessive or unreasonable.
C. The symptoms cause clinically significant distress or impairment in social, occupational and/or other areas of functioning.
D. Does not occur solely during the course of another disorder (body dysmorphic disorder, hypochondriasis, social anxiety disorder, mood disorder and obsessive-compulsive disorder).
E. The disturbance is not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition (e.g. hyperthyroidism).

Specify if:
With poor insight: If, for most of the time during the current episode, the person does not recognize that the preoccupations (obsessions / compulsions) are excessive or unreasonable

tic entity. Such categorization may be helpful in encouraging further research on this set of symptoms.

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