Geriatric-Onset Olfactory Reference Syndrome Successfully Treated with Duloxetine and Memantine

To the Editor: Olfactory reference syndrome (ORS) is a psychiatric condition characterized by a persistent preoccupation with the false belief that the individual emits a foul or offensive body odor. It is commonly accompanied by ideas or delusions of reference, olfactory hallucinations, and repetitive behaviors.[1] The nosologic status of ORS remains actively debated.[2] *DSM-5* describes ORS as a variant of *taijin kyofusho* and classifies it under "other specified obsessive-compulsive and related disorders."[3] Separate diagnostic criteria have been proposed for ORS.[4]

Case report. Ms A was a 66-year-old African-American woman with a psychiatric history of *DSM-5* major depressive disorder, unspecified anxiety disorder, and major cognitive disorder (dementia). She was admitted to an inpatient geropsychiatric unit after getting lost, and she endorsed feeling depressed with passive suicidal thoughts.

Ms A was preoccupied with the belief that she had a terrible odor that repulsed and sickened others. She described the smell as rotting and "worse than death." At various times, she attributed the odor to different things: past sins, punishment from God, and declining self-care. She felt that she would rather die than continue to live in this manner. She attributed all her depressive symptoms as secondary to the foul odor. Her beliefs regarding the odor were judged to be of delusional severity. She reported hallucinations of no other sensory modality. She had been living at a nursing home for the past 3 months, and she had left the nursing home against medical advice. The perceived odor had started around the time she went to live in the nursing home, and she believed that other nursing home residents continuously talked about her odor behind her back. Her current episode of depression started after the onset of the olfactory symptoms per her report; her family could neither confirm nor deny the temporal sequence of events given their relative noninvolvement at the time.

Although Ms A had experienced depressive episodes in the past, she had never experienced olfactory hallucinations, or any other psychotic symptoms, in her life before. She had been on treatment with paroxetine 40 mg/d and mirtazapine 30 mg/d given her history of depression, but despite compliance, she continued to experience olfactory and depressive symptoms. Her electrocardiogram on admission revealed a QTc interval of 580 msec, and cardiology consultation recommended against the use of antipsychotics and other QTc-prolonging psychotropics.

She was started on duloxetine (given its low propensity for QTc prolongation) for her depressive and olfactory symptoms, and it was titrated up to 40 mg/d during her hospital stay. After discussion with Ms A and her family, she was also started on memantine 5 mg/d for dementia, which was increased to 10 mg/d at discharge. She scored 22/30 on the Montreal Cognitive Assessment,[5] and an occupational therapist recommended around-the-clock supervision for her to live in the community. Computed tomography of the head without contrast revealed no intracranial pathology aside from extensive bilateral nonspecific white matter changes. Magnetic resonance imaging of the brain could not be obtained due to the presence of cardiac pacemaker. Ms A gradually grew less and less preoccupied with the odor, and by week 3 of her hospital stay she reported complete resolution of the perceived odor, significant improvement in depressed mood, hopefulness about the future, and no death wish. Her brother began the process for guardianship, and she was discharged to a nursing home.

This case report is notable given the geriatric onset, comorbidity with dementia, and response to a combination of duloxetine and memantine. To the best of our knowledge, this is the first case report of olfactory reference syndrome successfully treated with a serotonin-norepinephrine reuptake inhibitor and memantine, individually or in combination. The literature on ORS is sparse and is generally limited to case reports. The age at onset in the majority of cases is less than 20 years.[6] ORS has been reported in some geriatric patients in the context of depression.[7] In about 40% of cases, there is a comorbidity with anxiety or depression.[6] The condition responds better to psychotherapy and antidepressants compared to antipsychotics.[6] Many case reports have described the use of selective serotonin reuptake inhibitors[6,8] (including paroxetine[9]) as well as atypical antipsychotics.[6,8] Memantine has been demonstrated to be beneficial for obsessive-compulsive disorder (OCD),[10] and given that ORS may be an OCD-related disorder, it is quite possible that in this case it was memantine alone, or its combination with duloxetine, that resulted in improvement, although the dose used was low.

One could object that the case may represent major depression with psychotic features rather than ORS. While admitting that question is difficult to settle definitively, we consider it to be primarily ORS for the following reasons: ORS is highly comorbid with depression, and they are not mutually exclusive; the clinical picture met the proposed criteria for ORS; the patient was primarily preoccupied with olfaction and reported depression as secondary; and she had prior history of depression with no psychotic or olfactory symptoms.

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