

Oral factors associated with delusional halitosis: a report of 3 cases and review of the literature

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ABSTRACT

Objective: To emphasize the relevance of patient's associated oral predisposing factor(s) in the evaluation, counselling and treatment of delusional halitosis.

Method: Delusional halitosis was diagnosed using the standard halitosis questionnaire, clinical examination, halimeter assessment and mental health assessment were done.

Results: Three cases of delusional halitosis were diagnosed with associated carious teeth, bitter taste and seepage of saliva from around an upper single tooth denture as the oral predisposing factors for the condition. Two of the patients benefited from anti-anxiety medication, counselling and behavioural therapy.

Conclusion: The role of dentists in the management of delusional halitosis is emphasized. The oral factors linked as triggers for delusional halitosis in this study were useful for counselling the patients on the possible cause of their oral malodour, which was followed up with behavioural therapy. Dental practitioners interested in assisting patients with psychosomatic tendencies need to be trained in cognitive behavioural therapy. Instead of a referral to mental health specialists, we recommend a joint clinic where the therapy sessions are in a dental setting.

KEY WORDS: counselling, delusion, dentist, halitosis, oral-factor

INTRODUCTION

The oral cavity is an ideal breeding ground for microorganisms and most bad breath sufferers have a localized cause of malodour in the dark, wet and warm oral cavity¹ in 90% of cases of genuine halitosis while systemic (extra-oral) origin comprises roughly the remaining 10% of cases.^{2,3,4} The causes of bad breath can be multiple and aetiologic culprits may shift over time.⁵ The tongue with its malodorous colony of bacteria, shed epithelial cells and decayed food is the primary odour host of all sites in the body.⁶ The surfaces of diseased gingiva and the film-coated palate, teeth, tonsils/adenoids, throat, and sinuses, as well as ear infections directly impart malodour to the exhaled air.⁵ This results from strongly odiferous oral substances known as volatile sulphur compounds produced by a combination of ingredients such as gram-negative anaerobic bacteria and sloughed epithelial cells break down. This degradation process involves the release of gases

dimethyl sulphide, hydrogen sulphide, dimethyl disulphide, and methyl mercaptan.

Some patients with delusional halitosis claim that oral and/or extraoral condition or previous dental treatment may have been the cause of their bad breath.⁷ Previous study from this centre showed significant correlation of patients associated oral factors (bitter taste, oral deposits, carious tooth and previous dental treatment amongst others) as the triggering event, which could predispose those individuals who may have underlying psychosomatic tendencies to developing delusional halitosis. Similarly, it has been reported that triggering events, facilitated by feeling of anxiety or depression could result in the hearing of voices, which was strongly associated with formation of delusion in children.⁸

We report three cases of delusional halitosis with an associated oral factor as the triggering event for the condition, to emphasize the relevance of patient's associated oral predisposing factor(s) in the evaluation, counselling and treatment of this condition.

CASE REPORT

Case 1:

A male student who presented about 20 years ago in the Department of Oral Surgery and Pathology,

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University of Benin Teaching Hospital, with a complaint of bad breath of 4 years and 6 months duration; which made him reluctant to attend lectures and group discussions for fear of offending others with his oral malodour. He claimed that he perceived the bad breath more when talking; hence he often hesitated to talk with people or avoided close contact with people. He associated holes (cavities) in the teeth in his upper and lower jaws as the cause of the malodour. There was history of sensitivity to thermal changes but no pain on mastication. The patient had visited other dentists before visiting our clinic.

Clinical examination of the patient revealed no unpleasant breath odour and the oral hygiene was good. Dental caries was confined to the dentine on teeth 14 and 46, which was confirmed by periapical radiographs. The patient was referred for filling of the teeth and routine scaling and polishing. He had scaling and polishing done but refused filling of his teeth. A week later, the patient was counselled based on the findings of his clinico-radiological examination and with literature support. The patient's condition did not improve and he kept insisting on extraction of the carious teeth, because he had read that dental caries was one of the causes of bad breath. A diagnosis of delusional halitosis was made and the patient was referred to the mental health specialists, but he absconded only to write us expressing how he felt after extracting the teeth in an unspecified dental clinic. In the letter he called 'an epistle' he wrote as quoted; "I went against the orthodox and there came true the paradox. I sent the nasty twins to bin, replaced one and did win". He went on to say "my madness is cured, the mystery of mysteries was solved, the puzzling question was resolved, and lo! at last new days have come, for I have overcome".

Case 2:

A 26-year old female trader presented with 3 year history of bad breath associated with bitter taste. She claimed that people avoided her and turned their faces away when she spoke with them, and her condition was worse in the morning. She also claimed that her husband had confirmed to her that she had oral malodour. Extra-oral and intra-oral examination showed no abnormality and examination of exhaled breath did not indicate oral malodour. Halimeter assessment of the patient's mouth breath was 130 ppb (Using RH-17 Series Halimeter, Interscan, Chatsworth, CA with normal range of 80-140ppb), which was within normal range.⁷ She was administered the modified standard halitosis questionnaire. Analysis of the questionnaire showed that the patient associated bitter taste as the possible trigger factor for her condition and her psychological score was 7 (high score).^{7,9} She believed that the

condition had impaired her social interaction with her customers and her motivation to work (trading). The patient claimed that the condition had impaired her sexual intimacy with her husband and adversely altered her normal lifestyle.

Routine scaling and polishing was performed for the patient and she was placed on warm saline mouth rinse 6 times daily for 5 days. However, the patient was persistent in her claim that she had foul mouth breath that was not relieved by frequent mouth brushing and use of mouth rinses. At the next clinical visit a week later, the patient's husband was interviewed in her presence and he denied her claim that he also perceives her foul mouth breath. A diagnosis of delusional halitosis was made and the patient's consent was obtained to carry out mental health assessment using a questionnaire with mental health instruments (Box 1).¹⁰⁻¹⁴ Assessment of her personality using EPQ (Eysenck Personality Questionnaire) showed she was tough-minded, introverted and emotionally unstable. Index of Self Esteem Scale showed she had poor self-esteem. Her level of psychopathology as measured by SCL-90 (Symptom Distress Checklist - 90) revealed that she somatizes, with interpersonal sensitivity and was depressed. She also suffered from paranoid ideation. The patient's situation specific emotion and her predisposition to being anxious were high as indicated by STAI (Spielberger's State-Trait Anxiety Inventory). Clinically, she was mildly depressed.

The patient was counselled in a joint clinic with mental health experts a week later, on the need to visit the dentist 6-monthly for prophylactic dental cleaning and to perform twice-daily tooth brushing to reduce her perceived feeling of bitter taste and bad breath. She was also advised to interact freely with other people including her customers, and to resume normal sexual intimacy with her husband, because our findings showed that she had no evidence of oral malodour. The patient was placed on tablet diazepam 10mg at night for 2 weeks. In the follow up visit after 2 weeks, the patient appeared calm and admitted that she was less worried about her mouth breath, though she occasionally perceives offensive odour from her mouth. She claimed that there was some improvement in her social interaction and intimate relationship with her spouse, but the feeling of bitter taste had persisted. The patient was lost to follow up after 3 months.

Case 3:

A 30-year old male student who presented at the clinic with 10 years history of bad breath, associated with the seepage of saliva from around an upper single tooth denture (tooth 11). The patient claimed that

people particularly females turned away their faces when speaking with him and some even openly complained about his bad breath. Extra-oral and intra-oral examination however showed no abnormality. Clinical examination of exhaled breath did not indicate oral malodour. Halimeter measurement of the mouth breath was within normal range (65 ppb). The modified halitosis questionnaire was administered to the patient, but the patient did not suggest a third party to help confirm his presumed bad mouth breath. Analysis of the modified halitosis questionnaire showed that the patient associated seepage of saliva from an upper single tooth denture as the trigger factor for his oral malodour. His psychological score was 6 (high score). He suffered from psychosocial effects and emotional disturbance associated with the condition, with resultant isolation from females and poor motivation to continue with his academic career as a second semester final-year engineering student. A periapical radiological examination of the upper anterior alveolar ridge with the missing right upper central incisor tooth showed no tooth fragment in the suspected anterior part of his upper jaw bone. Routine scaling and polishing was performed for the patient and he was placed on warm saline mouth rinse 6 times daily for 5 days, but his complaint of bad breath was persistent.

A diagnosis of delusional halitosis was made and evaluation of the patient's mental health status with the assessment questionnaire was performed after obtaining the patient's consent. Psychological assessment of the patient revealed an individual who was extroverted, tough-minded, emotionally unstable and had poor self-esteem. The patient's high score on the psychological distress scale suggested that the patient manifested somatization, obsessive compulsiveness, anxiety, paranoid ideation, psychoticism and neuroticism. The patient's state anxiety level was also high though there was no manifestation of clinical depression.

During counselling in a joint clinic with mental health experts a week later, our findings of a high psychological score, absence of objective evidence of oral malodour, as well as absence of tooth fragment at the site of the upper single tooth denture was explained to the patient. He was made to understand that his perceived bad mouth breath was imaginary (psychological) and maybe linked with his perceived seepage of saliva from around his single tooth denture (as trigger factor). The adverse psychosocial effect and emotional disturbance of the condition that impaired the patient's social interaction with females and his poor motivation to pursue his academic career were discussed with the patient. He was advised to commence lectures and to make effort to relate freely with people including females, as our findings showed

that his breath was normal though he thought otherwise. The patient was placed on diazepam tablet 10mg at night for 2 weeks. On presentation 2 weeks later, the patient claimed that his condition had improved after our counselling session. He also claimed to have benefited from the medication prescribed for him. The patient was seen in a scheduled 1 month, 3 months, 6 months and yearly follow up appointments for 2 years. During the follow up period the patient completed his second semester examination, got a job and he is now married.

DISCUSSION

The oral cavity is the major source of oral malodour and some patients also associate their delusion to oral factors, hence it is understandable when they seek treatment from the dentists. When patients suffering from delusional halitosis present to the dental practitioners for treatment, it is critical that the dentist should recognize the ethical responsibility on him / her to have a knowledge base and quality clinical assessment skill, as well as an effective communication / counselling and treatment techniques; to first try to resolve the bad breath problem of these patients, before referring or co-managing unresponsive cases with the mental health experts.⁷

In societies where mental illness is considered a taboo, patients suffering from delusional halitosis feel more comfortable talking to the dentists and consider mental health specialists 'aliens'. Therefore, the dentists because of their expertise in the management of oral conditions can educate the patients on the causes of halitosis which is followed up with behavioural therapy. It is therefore apposite for dental practitioners to be trained in cognitive behavioural therapy (CBT) or try 'self-help'- using a book, internet programme or computerized CBT, while recognizing the limit of their ability. The maxim should be to 'do your best and leave the rest'. Instead of a referral to mental health specialists, we recommend a joint clinic where the therapy sessions are in a dental setting. This is our practice which we think is congenial for our patient's treatment. Often times the patient is more disposed to seeing any member of the team alone after the joint sessions. When patients accept to see the mental health specialists alone after a session or more, we recognize this as a sign that the patient is willing to cooperate. This approach is not without its challenges and will require compromises from the care givers.

The cases presented showed progressive improvement in the protocol for the management of delusional halitosis in our centre. The possible trigger

(oral) factors for delusional halitosis were identified in these patients and a baseline for evaluation of the mental health characteristics of patients suffering from delusional halitosis in our environment was highlighted. The patients in this case report were confirmed to be suffering from delusional halitosis by excluding genuine and pseudo-halitosis.^{7,15,16} The diagnostic steps for the latter 2 cases were more elaborate when compared to that of the first case because the patient was seen when we lacked some of the instruments for diagnosis, such as, the standard halitosis and mental health questionnaires and halimeter. There was no objective assessment of the patient's mouth breath and no psychological assessment was performed for the first reported case. Whereas, in the latter 2 cases evaluation of their bad breath concerns was found to be associated with psychosomatic illness characterized by a high psychological score, an associated trigger factor and psychosocial effects, including adverse effects of the condition on the patients' occupation / career, sexual intimacy and normal lifestyle.⁹ None of the third party suggested by these patients agreed that the patients had oral malodour when interviewed. Analysis of their mental health status showed that the patients mostly had anxiety traits, with mild clinical depression observed in one of the cases. However, dentists are advised to be sensitive to ensure that warning signs of depression (moodiness, defiance, social isolation, substance abuse, and significant changes in sleep, eating and school work) are excluded before prescribing anti-anxiety medication to these patients.

The oral factor identified as the possible trigger for delusional halitosis in each patient was useful in counselling of the patient about the possible cause of their oral malodour. We observed that the patients had underlying psychosomatic tendencies (indicated by their high psychological scores), which may have led to the initiation of delusional halitosis, because of their unusual sensitivity to an associated trigger factor.⁷ Many patients suffering from delusional halitosis specifically relate the onset of their symptoms to oral factors. Thereafter, the patients may have maintained the delusional problem by relating their presumed aversive behaviour of other persons, such as covering their nose or turning their faces, as a confirmation that they had oral malodour. Similarly, it was reported¹⁷ that chronic facial pain patients who relate the onset of their symptoms to dental treatment may have initiated, exacerbated and maintained the problem of delusion by their actions. The first case reported had his teeth extracted. Previous report¹⁸ shows that some patients succeed in having medical procedures or surgery; however

the efficacy of such nonpsychiatric treatments is doubtful

Two of the patients appear to have benefited from treatment with anti-anxiety medication, though the complaint of bitter taste by one of the patient was persistent after follow up for 3 months. The most encouraging response was observed after 2 years of behavioural therapy, in the patient who suffered chronic bad breath with associated seepage of saliva from around a single tooth denture. We therefore suggest that repeated weekly contact for a month and monthly follow up for more than a year may be necessary to evaluate patients' response to treatment. Several reports^{19,20} describe behavioural treatment over weeks to months. Behavioural treatment has been found efficacious, but it may require months to years to habituate.

CONCLUSION

In conclusion, the role of dentists in the management of delusional halitosis is emphasized. The oral factors linked as triggers for delusional halitosis in this study were useful for counselling the patients on the possible cause of their oral malodour, which was followed up with behavioural therapy. Dental practitioners interested in assisting patients with psychosomatic tendencies need to be trained in cognitive behavioural therapy (CBT), while recognizing the limit of their ability. Instead of a referral to mental health specialists, we recommend a joint clinic where the therapy sessions are in a dental setting.

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