



# Oral Rehabilitation in a patient on Antidepressants - Case Report

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## Abstract

Major depressive disorder affects millions of adults worldwide. It impacts most activities of daily living, including oral hygiene practices and use of dental resources. Recent studies have highlighted the association between depression and oral health behaviors and oral health status. Biological mechanisms include the association between depression and the inhibition of immune function, as well as the discovery of the association between anti-depressant medication and the growth of specific bacteria.

**Key words:** Oral, Rehabilitation, Antidepressants

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## Introduction

Patients treated with antidepressant drugs may experience a dry mouth. Other drugs associated with dry mouth include antihistamines, anticholinergics, antihypertensives and antipsychotics. These drugs may cause salivary gland hypofunction, or may alter the threshold for the perception of dry mouth or they may do

both.<sup>1</sup> Older patients appear to be more at risk of a drug-induced dry mouth, with greater salivary gland hypofunction, compared to younger adults. Among the antidepressant drugs, tricyclic antidepressants are associated with a higher incidence of dry mouth than selective serotonin reuptake inhibitors (SSRIs). In a study of parotid gland salivary flow rates,



patients taking tricyclic antidepressants had a 58% reduction in flow rates compared with untreated controls, while the flow rate was reduced by 32% with SSRIs.<sup>2, 3</sup> For the dental professional, orofacial manifestations of depression as well as the effects of the pharmacological management of depression warrant consideration. Dentally, clients with depression have higher incidences of tooth loss and non-use of oral health services, and may have poorer oral hygiene resulting in increased incidence of caries and periodontal diseases. The combination of neglect and disinterest, in conjunction with adverse effects from their medications, may result in rampant caries. Those presenting to the practice may also have craniofacial pain conditions including atypical facial pain ("neuralgia"), burning sensation of the oral mucosa (often on the tongue) or some temporomandibular joint disorder. Whether the onset of these conditions resulted in depression or whether clients without depression more readily develop these conditions is unclear. It has been suggested that the pain may arise from stress-induced disruption of the HPA axis, a mechanism previously implicated as the cause of both depression and inflammatory joint disease. Other oral findings include dysgeusia, stomatitis, and glossitis.<sup>4-7</sup>

### Case report

The 28-year-old female patient sought treatment at the dental department due to the main issue of a missing lower right first molar. After a comprehensive medical examination, it was determined that the patient was experiencing depression and insomnia. As a result, she was currently prescribed Zolpidem to treat these disorders. This information was vital to take into account in the comprehensive therapeutic approach. During the initial stage of treatment, precise diagnostic casts were carefully created, and a thorough treatment plan was formulated. Significant emphasis was placed on assessing the occlusion, and it was determined that a surgical intervention was required. The use of dental implants was chosen as the optimum treatment for replacing

the missing lower right first molar. The procedure was successfully performed on tooth number 36.A 5 × 13 mm endo-osseous implant was chosen after careful treatment planning. After administering a 2% lidocaine injection containing 1:80,000 anaesthetic agent to the location where the central incisor is missing, a full-thickness incision was made on the palate and the flap was lifted. The bone width was determined to be 8mm, and in accordance with the manufacturer's guidelines for implant placement, an ostectomy was drilled using the surgical template. Subsequently, a threaded implant with a rough surface, which had parallel sides, was inserted. It attained primary stability at a force of 35N. A healing abutment (Figure.3) was then positioned on the top of the implant, and the surgical incision was closed using silk 3.0 sutures. The maxillary transitional denture was adjusted to fit the healing process and the healing cap. The healing cap, namely the Hi-Tec HC3 gingival former from Life Care Device Private Limited in Israel, was firmly attached to the implant. The patient was prescribed the appropriate antibiotic, amoxicillin 500 mg, to be taken three times daily for a duration of 7 days. Additionally, an analgesic, ibuprofen 800 mg, was recommended to be used every 4 to 6 hours as needed for pain relief. Post-operative instructions were also provided to the patient. The patient underwent surgery and was seen one week later for suture removal. After six weeks, the healing abutment was taken out and replaced with an imprint coping. Then, a Poly Vinyl Siloxane open-tray impression was used to accurately record the position of the implant. The imprint coping was extracted and replaced with a healing abutment. Additionally, the shade was documented. Subsequently, the case was forwarded to the laboratory to undergo the production of a temporary crown and custom abutment. The patient underwent an eight-week healing period, after which the healing abutment was extracted and replaced with a personalized abutment. A radiograph was taken to verify the proper placement of the abutment.

Significantly, the patient conveyed contentment with the results of the treatment over the subsequent sessions. The effective incorporation of dental implant therapy not only resolved the functional issue of the absent molar but also had a good impact on the patient's overall state of health. The dental team's comprehensive approach, taking into

account both the oral and psychological elements of the patient's health, was crucial in attaining the positive result. This case highlights the significance of conducting a thorough evaluation and creating a customized treatment plan to achieve effective and patient-focused dental therapies.



**Extra oral Examination: Occlusal Evaluation – Static: Intraoral Examination:**





**Occlusal Evaluation – Dynamic**

Right working



Non Working



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**Occlusal Evaluation – Dynamic**



Left WorkingNon-Working

**Occlusal Evaluation – Dynamic (Anterior Guidance)**



Periodontal Charting: Maxilla

Probing Depth	0	0	0	6	4	9	5	6	4	4	3	4	1	2	3	0	2	3	3	2	3	3	2	3	2	3	1	4	2	2	3	0	0	0	2	5	5	3	2							
Recession																																														
Attachment level	0	0	0	1	5	5	5	4	4	4	3	4	4	2	3	8	2	3	3	2	5	3	2	3	2	3	3	2	3	1	4	5	2	3	0	0	0	8	2	5	5	3	5			
Masticatory Mucosa				4			6			5		3		3		3		3		3		3		3		5											5		5							
Plaque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Lingual</b>				32		31		30		29		28		27		26		25		24		23		22		21		20		19		18		17												
<b>Buccal</b>																																														
Plaque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Masticatory Mucosa					3		3			3		2		4		5		5		4		3		3																						
Attachment level				3	3	2	3	4	2	3	3	2	3	2	1	3	2	3	3	2	3	2	3	2	3	2	2	3	2	3	0	0	0	2	3	4	5									
Recession																																														
Probing Depth				3	3	2	3	4	3	3	3	2	3	2	1	3	2	3	3	2	3	2	3	2	3	2	2	3	2	3	0	0	0	2	3	4	5									

Probing Depth	4	3	6	6	3	5	5	2	4	4	2	4	4	2	4	4	2	3																													
Recession																																															
Attachment level	4	3	6	6	3	5	5	2	4	4	2	4	4	2	4	4	2	3																													
Masticatory Mucosa	7			7			5		5		5		7				3		4		3		7		5		5		5		5		7														
Plaque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
<b>Buccal</b>																																															
<b>Lingual</b>				1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16													
Plaque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Attachment level	4	4	7	7	5	5	5	3	4	3	3	4	3	4	4	3	4	0	0	0	5	3	4	3	3	4	3	3	4	3	4	4	2	4	4	3	5	5	3	4	4	4	5	4	5		
Recession																																															
Probing Depth	4	4	7	7	5	5	5	3	4	3	3	4	3	4	4	3	4	0	0	0	5	3	4	3	3	4	3	3	4	3	4	4	2	4	4	3	5	5	3	4	4	4	5	4	5		

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Periodontal Charting: Mandible  
 Post-Operative Evaluation:





### Discussion

The prevalence of depression is given as 6% in the USA and that of late-life depression just over 13%. The probability of an individual suffering from depression once in his or her lifetime is given as 20-25% for women and 7-12% for men. As depressive patients are often treated with medication as well as various therapeutic approaches, these figures correlate closely with the sales figures of prescription drugs. In 1999 and 2000, three and four antidepressants respectively were on the list of the fifty most prescribed medicines in the USA. In view of this widespread use, it is therefore not surprising that antidepressants can be involved in pharmacological interactions.<sup>7-10</sup> Psychotropic drugs are agents used to treat psychiatric disorders. They include sedative-anxiolytics, antipsychotics, antidepressants, and the antimanic agents. While these drugs all act in some manner to alter the activity of neurotransmitters, psychiatric illness cannot be explained entirely on biochemical defects. Indeed, one cannot overlook the importance of psychological and social factors in both the pathophysiology of mental illness, and its response to specific pharmacotherapeutic agents.<sup>11</sup> A 28-year-old female patient reported with missing mandibular right first molar. On medical examination, the patient was found to be affected with depression and Insomnia, and was on Zolpidem for the management of the same. Diagnostic casts were made and treatment planning was done. Occlusion was

evaluated and surgical treatment was planned. Dental implant therapy was done in relation to 36. Radiographic evaluation was carried out on follow-up and periodontal health was evaluated. Patient was satisfied with the treatment. Poornachitra P et al, in a previous document, presented practical algorithm for the management of Dental Patients with Mental Health Problems in Special Care Dentistry. Due to a lack of clinical practice guidelines in the literature and the absence of guidelines issued by dental governing bodies, we attempted to consolidate the existing challenges and propose a model for managing psychiatric special needs patients. Based on the current evidence, authors recommended 'psychiatric dental consultation liaison' (PDCL) services as the acceptable framework for the management of dental patients with mental health problems in special care dentistry. PDCL services will favour both dentists and patients as it includes psychiatric consultation and interventions that will result in the positive execution of comprehensive dental treatment care.<sup>12</sup> Lambrecht JT et al identified adverse drug interactions between the antidepressants and medications commonly administered in dentistry in order to give practicing dentists an overview of the scientific literature. The literature search was performed using PubMed, Cochrane and the specific search items. The review (1984-2009) focused on medicines used in dental practice (vasoconstrictors, non-opioid

analgesics, non-steroidal anti-inflammatory drugs, antibiotics, antifungals and benzodiazepines). There are various drug interactions between antidepressants and medicines used in dentistry. When two or more drugs are co-administered, a drug interaction must always be anticipated though many of the interactions are potential problems, but do not seem to be real clinical issues. The probability of a drug interaction can be minimized by careful history-taking, skillful dose adjustment and safe administration of the therapeutic agent.<sup>13</sup> Hakam AE et al, investigated the association of different antidepressant classes with dental implant failure. The variables of implant failure, antidepressant use and classes (selective serotonin reuptake inhibitors [SSRI], serotonin-norepinephrine reuptake inhibitors [SNRI], tricyclic antidepressants [TCA], atypical antidepressants [AA], and monoamine oxidase inhibitors [MAOI]), age, sex, smoking, mild systemic diseases, and implant location were obtained from patients' records. Odds ratio (OR) and confidence interval (CI) of implant failure in patients taking different antidepressant classes, in relationship to non-antidepressant users, were estimated, and the influence of multiple variables on implant failure were investigated. A total of 771 patients and 1,820 implants were evaluated. The statistically significant predictors for implant failure included smoking (OR = 5.221), use of antidepressants (OR = 4.285), posterior maxilla location (OR = 2.911), mild systemic disease (OR = 2.648), and age (OR = 1.037) (P <0.05). The frequency of implant failure was 33.3% in TCA users, 31.3% in SNRI users, 6.3% in SSRI users, 5.2% in atypical antidepressant users, and 3.9% in non-users. Significant associations were observed between the use of SNRI and TCA and implant failure. Users of antidepressants were at higher risk of implant failure than non-users.<sup>14</sup>

### Conclusion

Individuals with mental illness are often at an increased risk for developing oral health problems. Special precaution should be given in

such patients while planning for oral rehabilitant.

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