



Manifestations and Management of Oral Complications in Transplant Recipients

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Advances in innovative surgical technique and immunology have enabled many organ and haematopoietic cell (bone marrow) transplant recipients to resume normal life. The likelihood of dental surgeons having the opportunity to manage transplant recipients is increasing. The common oral manifestations & management of complications related to tissue transplant are reviewed.

The indications for tissue transplantation are extensive. In this discussion, the focus will be on oral complications related to the transplant of major organs and haematopoietic cells. The need for transplantation in these situations is often related to end-stage organ failure and haematological neoplasms. A major concern following successful transplantation will be the prevention of not just graft rejection by the host but also graft-versus-host disease (GVHD). Despite sophisticated blood, genetic marker and tissue typing, allogenic transplant is still fraught with complications. Therefore medications are commonly used for suppressing the recipient's immune system, and the new donor immune system in haematopoietic cell transplant (HCT) - also commonly called bone marrow transplant, to prevent GVHD.

Most immunosuppressive medications are nonspecific and have systemic side effects. Examples of commonly used medications for immunosuppression are corticosteroids, cyclosporine, azathioprine, tacrolimus, sirolimus, and myophenolate etc. Cytotoxic agents and total body irradiation are also used in conditioning bone marrow prior to HCT.

Cyclosporin is well known to be associated with gingival hyperplasia. Severe gingival hyperplasia is managed by gingivectomy followed by rigorous oral hygiene measures. The systemic side effects of immunosuppression related to the use of such medications will not be further discussed. Oral complications in transplant recipients often present as opportunistic infections or mucosal lesions. These can be broadly classified as:

1. Infective conditions.
2. GVHD.
3. Neoplasms.
4. Miscellaneous: mucositis, recurrent ulcerations, soft tissue overgrowth, salivary gland dysfunction etc.

Signs of infection in transplant patients may be muted or exaggerated depending on the patient's immunocompetence. Bacterial infections, including dentoalveolar abscess, while usually localised, may

soon show signs of systemic involvement in immunocompromised patients. They should be treated by prompt and appropriate empirical antibiotics, modified according to results of culture and sensitivity tests. Apart from periodontal and caries related dental infections, viral infections are a common problem in immunosuppressed patients. Herpes simplex virus (HSV) is one of the commonest pathogens, presenting as recurrent herpes labialis or intraoral herpes. Other common viral infections include herpes zoster and EBV infections. Oral hairy leukoplakia had been reported in transplant patients who are HIV negative.¹ While viral infections in normal patients require usually symptomatic treatment, early diagnosis and prompt treatment with appropriate antiviral agents are required in immunosuppressed patients. Fungal infections in this group of patients range from common Candidiasis to deep fungal infections. Fungal infections like aspergillosis, histoplasmosis and zygomycosis, which rarely affect immuno-competent patients can occur in transplant recipients. Deep fungal infections involving the upper respiratory tract and the paranasal sinuses can be fatal in severely neutropenic patients. Rhinocerebral zygomycosis is a destructive fungal infection of the midface and the nasal passages in severely immunocompromised patients, due to members of *Mucor* or *Rhizopus* of the phylum Zygomycota. Correction of predisposing conditions, surgical debridement and systemic antifungal treatment are needed.

GVHD is a complication following HCT. This occurs when acquired immunocompetent T lymphocytes from the graft attack the host cells of the graft recipient. GVHD affects the oral cavity, the entire gastrointestinal system, the skin and the liver. The mucosal reaction of GVHD is very similar to that of lichen planus. In severe cases, the mucosa of the oral cavity and the lips can be seriously eroded with ulceration and crusting (Figs. 1, 2). Biopsy is often required to confirm the diagnosis and to rule out malignancies. Management of such conditions is often difficult. It often requires modification of the immuno-suppression regimen. Oral symptoms can be relieved with benzydamine mouthrinse and topical steroids. Prevention of secondary bacterial infection in cases of extensive oral ulcerations can be achieved by using tetracycline mouthrinse and is often beneficial. Tetracycline mouthrinse can be prepared by dissolving the powder from a 250mg capsule in 10 to 20 cc of water. The patient is then advised to hold the mixture in the mouth for one to two minutes. Severe cases of oral ulceration may require intralesional or systemic steroids (Figs. 3,4).

The use of topical azathioprine has been reported with some success. However, topical azathioprine is not available in HK.²

In addition to GVHD, recipients of allogenic HCT may develop gingival and other mucosal soft tissue fibroepithelial polyp overgrowth, especially in patients on cyclosporine. As there is a potential danger of malignant transformation, such tissues should be excised and subjected to histopathology study (Fig. 5).

Because of immunosuppression, transplant patients are at risk of developing lymphoid & epithelial neoplasms. Lymphoma and Kaposi's sarcoma can present in the oral cavity. Squamous cell carcinomas can affect the lips.

Management of oral complications in transplant recipients requires collaboration of the oral and maxillofacial surgeon with the patient's physicians, surgeons or clinical oncologist. The oral surgeon plays an important role in the early diagnosis of such complications. Antimicrobial treatment and biopsy should not be delayed as fatal consequence can occur even in opportunistic infections, while malignancies should be recognised and treated early.



Fig. 1 Severe GVHD affecting the skin and oral mucosal surface with generalised ulceration and crusting of this patient who had received bone marrow transplant for leukaemia.



Fig. 2 Generalised mucositis and multiple ulcers involving the tongue borders and dorsum, and corner of mouth.



Fig. 3 Lower lip ulcer in a patient with GVHD following bone marrow transplant for leukaemia.



Fig. 4 Healing of the ulcer following topical steroid and intralesional injection of triamcinolone acetonide.



Fig. 5 Hyperplastic tissue growth on the tongue dorsum in GVHD following bone marrow transplant. Histopathological examination of the excision specimen confirmed squamous cell carcinoma.

References

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