

CASE REPORT

Management of A Patient With Post Radiation Oral Candidiasis: Case Report And Review

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ABSTRACT

Introduction: Radiation and chemotherapy play an important role in the treatment and management of patients with head, neck and face cancers. The oral complication of the management of head, neck and face cancers are responsible for morbidity and mortality.

Case Report: This case report presents management of oral candidiasis in a patient with post radiation therapy with anti-fungal. The outcomes that were considered in the present case were: alleviation of the burning sensation, regression of the lesion and long term follow up for recurrence of the lesion

Conclusion: Oral candidiasis is the most common debilitating side effect of the radiation therapy. About 27% of the patients undergoing Radiotherapy present with evidence of oral candidiasis. Oral physicians serve a vital role in the prevention and management of short and long term oral complications of cancer therapy.

Keywords: Fluconazole, Oral Candidiasis, Radiation therapy.

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INTRODUCTION

Surgery, chemotherapy and radiotherapy are the options for treatment of head and neck cancers. Each modality is associated with a number of considerations related to treatment of the cancer and quality of life of the patient.¹ Radiotherapy is one of the treatment modalities frequently used in the management of Head and Neck tumors. However, a lot of other complications are associated with the treatment.²

The oral complications of Head Neck and Face (HNF) radiation therapy result from radiation injury to salivary glands, oral mucosa and taste buds, oral musculature, alveolar bone and skin.³

As clinicians, we should aim to prevent or reduce the unpleasant and debilitating effects associated with radiotherapy, to promote maintenance of good oral health and well being post radiotherapy.

Chemotherapeutic agents are administered as an adjunct to radiotherapy. Patients treated with multimodality chemotherapy and radiotherapy maybe at greater risk for oral mucositis and secondary oral infections such as candidiasis. The oral complications of therapy for HNF cancer can significantly impair quality of life.

A multidisciplinary and holistic approach is mandated in the management of patients undergoing HNF radiotherapy.

CASE HISTORY

A 66 year old male patient reported to the department of Oral Medicine and Radiology with the chief complaint of burning sensation over the tongue since 7 to 8 days. Patient was apparently asymptomatic about 7 to 8 days back when he first experienced burning sensation over the dorsal surface of tongue. The burning sensation has gradually increased in intensity since advent and is relieved on drinking water.

Patient was diagnosed with Non-Hodgkin's Lymphoma of the pharyngeal part of the tongue about seven months back (Fig.1-a). He had undergone radiation and chemotherapy for the same. Chemotherapy comprised a total 6 cycles from January 2014 to June 2014. Radiation therapy comprising a total of 22 cycles starting from June 2014 to July 2014 was also given. A pre-radiotherapy dental assessment was done in May 2014 following which extraction and root canal treatment was performed. The patient was then referred back to the radiation oncologist for radiotherapy. Patient reported with the chief complaint of burning sensation over the dorsal surface of tongue 2-3 months post radiation therapy. No abnormality detected in general and extra-oral examination with the exception of presence of pallor in the lower palpebral conjunctiva (Fig 1-b).

Clinical examination of the patient showed diffuse, white partially scrappable plaque on the dorsal surface of tongue (Fig.2). Visual Analogue Score (VAS) was recorded at 10. Based on the clinical findings a provisional diagnosis of Acute Pseudomembranous Candidiasis of the Tongue (Oral thrush) secondary to radiation therapy was given. Investigations including routine haemogram (Hb, DLC, TLC), HbsAg, HIV were carried out. The patient tested negative for HIV and HbsAg.

Using tongue blade, the scrappable component of the lesion was scrapped off and the smear put on the slide and sent for histopathological examination (Fig.3)

Histopathological examination was performed using Hematoxylin and eosin (H and E) and PAS staining which confirmed the presence of candidal hyphae (Fig.4). Hence a final diagnosis of Acute Pseudomembranous Candidiasis of the tongue secondary to radiation therapy was made. The patient was also referred to the Hematologist for the management of anemia as the haemoglobin count was 9.8 gm%.

The patient was managed with a combination of anesthetic gel (dologel) for symptomatic relief and a systemic anti-fungal drug. Fluconazole 200mg was prescribed once a day for a period of 28 days. The patient was instructed to apply the anesthetic gel 4-5 times on the affected area daily before having food. Patient was then recalled

after 14 days. On day 14, patient reported for the first follow up. There was decrease in the burning sensation VAS recorded at 8. There was partial regression of the lesion (Fig.5-A). The patient was advised to continue with the medication and re called after 2 weeks.

On day 28 at the second follow up, there was marked decrease in the burning sensation VAS was recorded at 5 and partial regression of lesion (Fig.5-B). The patient was advised to reduce the frequency of anesthetic gel application to 2-3 times daily before meals.

Third follow up was at day 42. 75% regression of the lesion was evident (Fig.5-C). Burning sensation reduced VAS was recorded at 3. Patient was then recalled after 14 days for follow up.

Day 56 at the fourth follow up there was complete regression of the lesion (Fig.5-D). VAS score recorded at 0. The patient was prescribed Fluconazole 100mg once a day for 14 days as maintenance dose and was advised to apply the anesthetic gel as and when required. The patient is recalled once every month and is under continuous monitoring for any recurrence of the lesion. Table-1, shows the details of management strategy and follow up.

DISCUSSION

Radiotherapy of the head and neck region causes radiation injury to the salivary glands, oral musculature, alveolar bone, oral mucosa and taste buds. They are clinically manifested by xerostomia, oral mucositis, dental caries, accelerated periodontal disease, taste loss, oral infection, trismus and radiation dermatitis. Some of these effects are acute and reversible (mucositis, taste loss, oral infections and xerostomia) while others are chronic (xerostomia, dental caries, accelerated periodontal disease, trismus and osteoradionecrosis). Oral mucositis and secondary oral infections like candidiasis are commonly seen in patients who are treated with multimodality chemotherapy and radiation therapy.³ Short and long term side effects are always associated with the treatment for cancer which significantly deteriorate the quality of life. A common and clinically significant acute oral side effect of medical disorders and their treatments (medications, chemotherapy, radiothe-

	Follow up 1	Follow up 2	Follow up 3	Follow up 4
Day	14	28	42	56
VAS Score	8	5	3	0
Regression of lesion	Partial regression 20 %	Regression 45 %	Regression 75 %	Regression 100 %
Management Strategy	Tab. Flucan 200 mg 1-0-0 x 14 days. Dologel - to be applied on the affected areas 4- 5 times daily before eating food.	Tab. Flucan 200 mg 1-0-0 x 14 days Dologel – to be applied 2-3 times daily before meals	Tab. Flucan 200 mg 1-0-0 x 14 days Dologel - to be applied twice daily before meals.	Tab. Flucan 100 mg 1-0-0 x 14 days Dologel --- SOS

Table-1: Shows the details of management strategy and follow up

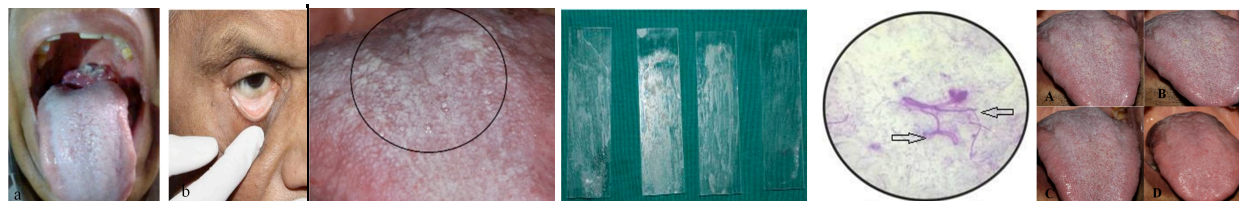


Figure-1: a- shows Non-Hodgkin's Lymphoma of the pharyngeal part of tongue, b- Photograph shows presence of pallor; **Figure-2:** Scrappable component of the lesion; **Figure-3:** Slide with smear layer/scrappings; **Figure-4:** Microphotograph of H & E and PAS stained smear shows desquamated epithelial cells, debris. Candida is seen in both yeast and hyphae forms; **Figure-5:** A-1st Follow up after 14 days, B- 2nd Follow up after 28 days, C-3rd Follow up after 42 days, D- 4th Follow up after 56 days.

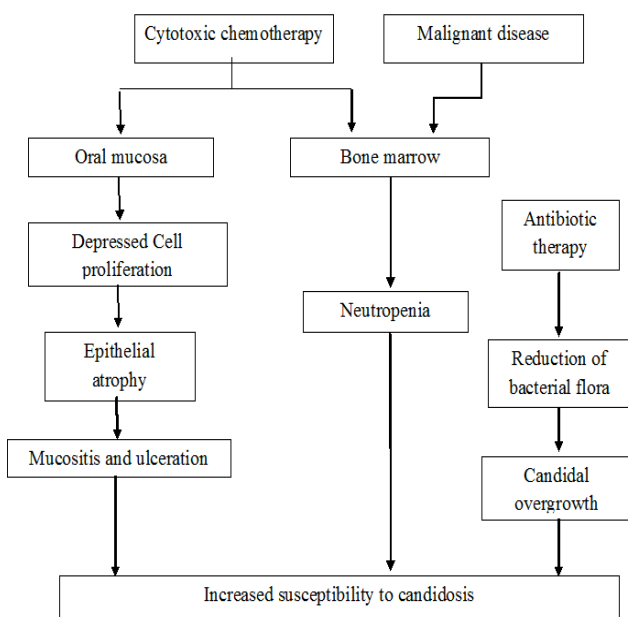


Table-2: The possible mechanisms by which cytotoxic/chemotherapy may aggravate oral candidiasis.⁵

rapy) is the disruption in the function and integrity of the oral mucous membranes and related structures (salivary glands, taste buds, periodontium). Oral mucositis and secondary oral infections like candidiasis are commonly seen in patients who are treated with multimodality chemotherapy and radiation therapy.³ Short and long term side effects are always associated with the treatment for cancer which significantly

deteriorate the quality of life. A common and clinically significant acute oral side effect of medical disorders and their treatments (medications, chemotherapy and radiotherapy) is the disruption in the function and integrity of the oral mucous membranes and related structures (salivary glands, taste buds, periodontium). These disease and treatment-induced complications may produce oral discomfort and pain, impaired nutritional intake, delays in drug administration, increased hospital stays and costs, and in some patients even life-threatening infections (septicemias and bacteremias). A common complication is oral candidiasis that produces morbidity and, under certain circumstances, increased mortality. *Candida albicans* is the most common fungal pathogen.⁴

Candida colonization tends to increase throughout the course of the treatment and is increased in the presence of xerostomia in beneficial impact on the severity of mucositis and radiation therapy interruptions in the study group of patients.⁷ Oropharyngeal candidiasis (OPC) is a frequent complication of cancer therapy. 27% of patients undergoing RT reported with the evidence of OPC. It may be present as a pseudomembranous candidiasis (thrush), with thick white plaques that are scrapped off or as

generalized erythema and burning sensation or discomfort.³ Table 2 shows: The possible mechanisms by which cytotoxic/ chemotherapy may aggravate oral candidiasis.⁵ Localized oral candidiasis is managed initially with local treatment confined to the site of involvement before systemic antifungal drugs are administered. Polyene antibiotics have been the initial choice of antifungals. The azoles have been developed more recently and ketoconazole, intraconazole, and fluconazole are used to treat patients with systemic fungal infections. Fluconazole, one of the newer azoles available for systemic use, has been shown to be effective in the treatment of OPC and is considered a well-tolerated and useful medication.

The azoles are fungistatic and interfere with the synthesis of ergosterol. Fluconazole is water soluble and has excellent bioavailability with low protein binding.⁶ O. Nicolatou-Galitis et al. conducted a study to evaluate the effect of fluconazole antifungal prophylaxis on the severity of mucositis and candidiasis in head and neck cancer patients receiving radiotherapy. The study results showed that there was a significant beneficial impact on the severity of mucositis and radiation therapy interruptions in the study group of patients.⁷

EMERGENING TRENDS

It is critically important to identify patients at high risk for oral or systemic dissemination of candidiasis. Clinical investigations are required to assess major (e.g., level of immunosuppression, genetic predisposition, candidal carrier status) and minor (e.g., salivary hypofunction, presence of removable prostheses, diet) risk factors for specific patient populations that will help develop guidelines for prophylaxis and treatment of oral fungal infections.⁴ In the preventive and supportive therapy for candidiasis, probiotics is a fascinating new area.⁸

CONCLUSION

With the steady rise in the incidence of the head and neck malignancies and with the advent of newer management modalities there is increased morbidity associated with the treatment.

Although there is an increased survival rate, there are certain debilitating oral conditions secondary to the treatment provided. The oral complications of mucositis, oral candidiasis, xerostomia may accompany the treatment. As clinicians, we should aim to prevent, reduce or relieve the unpleasant and debilitating effects associated with radiotherapy to promote maintenance of good oral health and well being post radiotherapy.

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