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Black Hairy Tongue in Acute Myeloid Leukaemia (AML)

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ABSTRACT: The term hairy tongue is used to describe an abnormal coating on the top (dorsal) surface of the tongue. It is a relatively common, temporary and harmless condition that occurs in as much as 13% of the world population.It is suggested that this condition can occur in patients with poor oral hygiene, tobacco use, excessive alcohol intake, and chronic dry mouth. There are also reports suggesting that chemotherapy, antibiotics and drugs causing xerostomia can induce black hairy tongue.
Case report: An 11 year old child diagnosed with acute myeloid leukaemia (AML) was referred to dental clinicfor management of black tongue.The patient was managed with daily oral prophylaxis along with anti-bacterial mouthwash and strict oral hygiene reinforcement. Within seven days, there was remission of the growth. This report intends to share how the clinical management of BHT in an AML case was done.
Conclusion: BHT is a self-limiting condition and basic oral care is mostly sufficient. A good coordination between medical team and dental team should be achieved to provide optimum treatment of BHT in AML patients.
KEY WORDS: Black hairy tongue,BHT, acute myeloid leukaemia, AML

I. INTRODUCTION

Black hairy tongue is described as a brownish-black discolouration of the papilla on the dorsum of the tongue. It occurs usually due to excessive growth of bacteria, fungal or yeast. Hairy tongue may alsobe seen as one of the oral findings in patient with Acute Myeloid Leukaemia (AML). Acute myeloid leukemia (AML), also known as myelogenous or myeloblasticleukemia, is a highly aggressive malignant disease, representing approximately 25% of pediatric leukemia[8]. Poor oral health is usually the predictor of increased risk of infectious complications in hospitalized leukemic patients during chemotherapy. Poor oral hygiene is a well-known risk factor for leukemic gingival overgrowth, destructive periodontal disease predisposing to oral pain, bleeding, and super-infections. In Acute Myeloid Leukaemia (AML), BHT is believed to be due to bacteria, fungal or yeast super infection or necrosis of papilla of tongue secondary to chemotherapy.

II. CASE REPORT

An 11 years-old female patient diagnosed with AML was referred to the dental clinicfor the management of discolouration on dorsum surface ofthe tongue. The patient informed that the discolouration of the tongue was presentfor past 4 days and it was increasing rapidly, eventually covering the whole surface of the tongue. The patient however did not report any symptoms ofpain, burning sensation or paraesthesia of the tongue.Extra orally, no abnormalities were detected. On intraoral examination, blackish-brown discolouration of the dorsum surface of the tongue measuring about 4cm x 3cm was noted. The discolouration was scrapable.No symptoms or signs of pain or discomfort was elicitedon palpation. Based on these clinical findings, it was suggestive of Black Hairy Tongue.

Simple treatment plan was carried out with daily oral prophylaxis along with anti-bacterial mouthwash twice daily for 7 days. Patient was advised to use a toothbrush with a small head and extra soft bristles. She was also advised to brush her teeth twice a day and to gargle with 0.2% Chlorhexidine mouthwash twice a day for 7 days. Patient was reviewed every day for 7 days and a reduction of the blackish discolouration was noted. On the 7th day, there was significant remission of the blackish discolouration from the dorsum of the tongue. Reassurance and proper oral hygiene instruction was given to patient and her guardian.

III. DISCUSSION

BHT is benign, asymptomatic, temporary and self-limiting condition found in the oral cavity. The criteria in considering hairy tongue is that the length of the filiform papillae exceeds 3 mm compared to normal 1mm length of the papillae. This growth is due to a decrease in the

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desquamation of cells, reducing debridement and leading to the accumulation of keratinized layers. The colour of the tongue in the region can be: unpigmented, white, tan, bluish, yellowish, green, brown or black, of the latter, when present, originates the denomination black hairy tongue. Black hairy tongue (BHT), which is asymptomatic in many cases, is characterized by hypertrophy, elongation, and hyperpigmentation of the filiform papillae of the tongue surface. This gives a typical carpet-like appearance on the dorsum of the tongue[1,2,3]. The different discolouration may be due to different microorganisms such as bacterial and fungal infection or even micro- sized food depositions[4,5]. A study by Samuel Drezin and ET states that candida infection is the most common oral infection in acute leukaemia patient[6]. It is believed to be caused by defective desquamation on the dorsal tongue leading to overgrowth of chromogenic bacteria or yeast. BHT is commonly associated with smoking, excessive coffee/tea or alcohol consumption, poor oral hygiene, xerostomia, oxidizing mouthwashes, medications (antibiotics, antipsychotics), and certain medical conditions (HIV, trigeminal neuralgia, malignancies) [7].There are other tongue lesion which might be similar to BHT such as hairy leukoplakia, acanthosis nigricansand congenital nevi[5,6]. Oral hairy leukoplakia may be seen in the immunocompromised patients and has a white plaque appearance on the dorsal and ventral surfaces of the tongue, as well as buccal mucosa, and gingiva. Acanthosis nigricans in the oral cavity manifests as multiple dark and demarcated papillary lesions on the dorsum and lateral region of the tongue with frequent labial involvement and may be associated with underlying malignancy. Congenital nevi, on the other hand, appears during birth or within 2- 3 years of life and rarely occurs in oral cavity and if present, is commonly seen in buccal mucosa and hard palate[8]. These can be ruled out by obtaining detailed history taking and fungal test via tongue scraping test[4]. Tongue biopsy is supportive but not usually required if the lesion appears characteristic for BHT and responds to mechanical debridement. Candidiasis infection is commonly found in patients with leukaemia undergoing chemotherapy and can affect the tongue or any other parts of oral mucosa[8]. Black hairy tongue in this patient is suggestive of bacterial superimposition secondary to long term antibiotic and chemotherapy [1]. The main concern of BHT is often aesthetic appearance of tongue and with possible halitosis.BHT is usually self-limited and carries a good prognosis but reinforcement of oral hygieneis considered important for such cases. In moderate black hairy tongue cases, prescription of nystatin is advised while in severe cases of black hairy tongue prescription of amphotericin B is advisable[6]. Prevention of BHT may be achieved in patient who is planned for chemotherapy, radiotherapy and long term antibiotic therapy by instructing a strict oral hygiene instruction prior to treatment and a periodic oral review once chemotherapy treatment starts[1,2].

IV. OTHER DENTAL CONSIDERATIONSIN AML PATIENTSUNDERGOING CHEMOTHERAPEUTIC TREATMENT:

Dental alterations are identified in up to 90% of cases of AML[9]. With the use of anti-neoplastic regimens, oro-dental complications can occur which can affect the teeth, oral mucosa, soft and bone tissue, and contribute to opportunistic infections, dental decay, and enamel discoloration. In paediatric leukemic survivors, the decayed, missing, or filled permanent teeth index is important. The negative impact of cytostatic drugs on the oral mucosa, as well as the poor oral hygiene during the treatment phase, are the main causes of oral health decline. Therefore, the high prevalence of oral diseases supports the need for an early and consequent oral treatment in leukemia patients, especially considering the subsequent therapy. Periodontal and dental treatment for patients with leukemia should always be planned and concerted with hematologists.

V. CONCLUSION

Oral cavity is estimated to have more than 500 types of microorganism. Most of them are normal flora and they helpin preventing colonization of more dangerous microorganisms, which may lead to infection. This mutual benefit of oral normal flora and human body may be disturbed if an individual becomes immunosuppressive. This eventually will lead to poor quality of life of the patient.Oral health care professionals should be well trained in managing oral care for immunosuppressive patient. Black hairy tongue might not be a serious manifestation but a systematic management should be provided. Prevention of black hairy tongue should be kept as main concern as it may lead to altered taste, which eventually will lead to reduce oral intake and may lead to malnutrition. A well-co-ordinated management with medical and dental team should be established to provide best treatment outcome for the patient.

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