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A Case Study

**TOBACCO INDUCED APHTHOUS ULCERATION IN A 15  
YEAR OLD BOY: A CASE REPORT**Aleena Sunny<sup>1</sup>, Ankitha George<sup>1</sup>, Anjali Jayakumar<sup>1</sup>, S.Hemalatha<sup>2</sup>, T.Sivakumar<sup>3</sup><sup>1</sup> Pharm.D intern, Nandha College of Pharmacy, Erode, Tamil Nadu.<sup>2</sup> Assistant Professor, Nandha College of Pharmacy, Erode, Tamil Nadu.<sup>3</sup> Principal, Nandha College of Pharmacy, Erode, Tamil Nadu**Abstract:**

*Tobacco in all forms such as cigarettes, pipes, cigars, beedis, paan etc have been involved in development of ulcers that may lead to pre-malignancies or malignancies. Tobacco is a product prepared from the leaves of the tobacco plant of the genus Nicotiana and of the Solanaceae [nightshade] family. It is one of the most abused substances in the world. The addictive chemical present in tobacco is nicotine which is equally addictive as heroin, cocaine and alcohol. As per the epidemiological data provided by Centers for Diseases Control and Prevention tobacco causes 6 million deaths per year. Tobacco induced oral ulcers are common, they serve as a forewarning signal for later-onset oral cancer. An aphthous ulcer is an inflammatory condition of the oral cavity characterized by recurrent, painful, round ulcers which are erythematous. We report a case of a young boy in his second decade of life, presenting with oral aphthous ulcer along with burning sensation due to use of tobacco in the hans [moist snuff] form. The provision of rescue therapy led to the amelioration of symptoms showing the benefit of early recognition and treatment of tobacco induced oral lesion.*

**Key Words:** Tobacco, Smoking, Moist snuff, Aphthous ulcers.**Corresponding author:****Aleena Sunny,**

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**INTRODUCTION:**

Tobacco is an addictive product prepared from the leaves of the tobacco plant. Cigarettes, cigars, moist snuff, dry snuff, bidis, water pipe and chewing tobacco are the predominant forms of tobacco used worldwide. It is taken by placing a small amount of ground tobacco in the mouth between the cheek and gum.

The term oral aphthous lesion comes from Greek word "aphtha", meaning ulceration [1]. It is also known as aphthous stomatitis and canker sores. It is characterized by single or multiple ulcerations of the oral mucosa which are painful and recurrent with circumscribed margins, erythematous haloes [2]. They appear on lips, gingiva, buccal mucosa, tongue and more rarely on palate, tonsil and pharynx.

The etiology behind the formation of aphthous ulcer is not clear. Research studies shows that 40 % of the patients with aphthous ulcer have genotypes IL-1 beta; IL-6 [3]. 20% of patients was found to have hematinic deficiency. Aphthous ulcer may be seen in human immunodeficiency virus disease and some other immune defects, and drugs, especially non-steroidal anti-inflammatory drugs, captopril, gold salt, phenobarbital, sodium hypochlorite and nicorandil. Local anesthetic injection, dental treatments and traumas like brushing teeth may trigger aphthous ulcer. It is considered that the hormonal changes during pregnancy, premenstrual and menopausal period increase aphthous ulcer prevalence. The role of diet in the aphthous ulcer formation has been examined. A study stated that foods such as orange, white cheese, tea, lemon, yoghurt and lettuce could have a role in aphthous ulcer pathogenesis [4]. Consumption of walnut, chocolate and brown bread could provide protection, against formation of aphtha [5]. Iron, vitamin B12 and folic acid deficiencies are more frequently reported in aphthous ulcer patients [6].

In chronic tobacco users the stretched oral mucosa appears fissured or corrugated; the lesion may become leathery. Rarely, an erythroplakic component may be seen. Homogenous white lesion is usually asymptomatic and is discovered during routine examination. On cessation of tobacco use mucosal appearance gets back to normal within 1 to 2 weeks. Biopsy is recommended for patients whose lesion persists for more than a month. Rate of malignant transformation is more in chronic smokeless tobacco use. Oral precancers are successfully evaluated and managed as a routine facet of oral health care, despite residual or ongoing controversies of some significance. We report the case of patients who developed oral ulcer after the use of tobacco in the

hans form.

**CASE REPORT:**

A 15 year old boy presented with a painful lesion on the tip of his tongue which was of one month's duration. The lesion was fairly extensive aphthous ulceration with circumscribed borders. The current episode at first appeared as an erythematous plaque with mild pain, facial puffiness and burning sensation over throat and chest region, which over the course of a few days, had progressed to a deep painful ulcer, and from that point onward had remained very painful precluding regular eating. The patient also experienced increased burning sensation in the abdomen prior to food intake. He also reported difficulty in opening mouth completely. There was history of restricted tongue and jaw movements since the onset of the ulcer and history of difficulty in chewing and swallowing food. The ulcer was associated with pain, which was mild, intermittent and localised; no aggravating or relieving factors were noted. The patient reported the intake of moist snuff tobacco [hans] for the past one month. There was no evidence of trauma, white or red patches, or fluid filled blisters prior to the onset of the ulcer. There was no history of bleeding or any kinds of pus discharge. There was no history of recurrent ulcers in the oral cavity or of ulcers elsewhere in the patient's body.

On routine investigation, the patient's complete blood picture was tested. Laboratory investigation revealed elevated ESR [32mm/hr] and no abnormalities in other parameters.

There is no reliable and effective treatment for aphthous ulcer. In general, juices, citrus, tomato, spices like red pepper, curry, strong acidic and salty materials like alcoholic drinks and soda should be avoided. Dental care products containing sodium lauryl sulphate [SLS] should not be used. The recovery period and pain in oral aphthous ulcers can be decreased substantially by using toothpastes not containing SLS [7]. When there is no specific underlying reason, the aim of medical treatment is to reduce pain and inflammation. Different topical and systematic agents are used in aphthous ulcer treatment and the treatment should always start with topical treatment. [8] In this case, the patient was treated with tablet Pantoprazole 20 mg BD, tablet Folic acid OD, tablet Clonazepam 6.25mg HS and syrup Sucralfate 5ml BD. On discharge he was advised with choline salicylate ointment for topical application and betadine gargle along with the prescribed medications. The patient was periodically monitored and instructed to come to our hospital at any time he

noticed a recurrence.

### DISCUSSION:

Aphthous ulceration is a common condition of the oral mucosa that presents in patients who are otherwise healthy. Characteristics of aphthous ulceration is multiple, erythematous, recurrent typically presenting first in childhood or adolescence. Aphthous ulcer should be reserved for ulcer that occurs in the absence of a systemic disease [6,9]. Similar presentations of aphthous-like ulceration may occur associated with systemic disease, including auto inflammatory syndromes and immunodeficiency states.

The most common type of inflammatory growth of the oral mucosa is chronic recurrent oral aphthous ulcers are, with a prevalence of 2% to 10% in Caucasian populations. Physicians should therefore know their clinical appearance and course, conditioning factors, underlying causes, and differential diagnosis for the proper treatment. [10]

Aphthous ulcer occur less frequently in smokers than non-smokers [11]. Smoking cessation results in worsening of aphthous ulcers and resumption of smoking improves the condition [12]. The hypothesis is that smokers develop mucosal hyperkeratinization, which protects mucosal surface better from the ulceration [13]. Another explanation is that nicotine triggers adrenal steroid production and influences macrophages directly causing decrease in the cytokine production hence decreases the aphthous ulcer prevalence [14]

The literature on the “protective effect” of tobacco use particularly smoking on aphthous ulceration suggests a possible underlying mechanism. It has been suggested that smokers have increased keratinization of the oral mucosa. The keratinization protects the oral tissues against the trauma or bacterial penetration. Multiple substances are systemically absorbed from cigarette smoke and one of these absorbed constituents promotes keratinization and also it is typically localized to the mucosal area where the smokeless tobacco is held. Although hyperkeratosis may be a premalignant condition, it is possible that it prevents aphthous ulcers through a local protective effect on the oral mucosa [15]. There exists confusion whether nicotine present in tobacco induces the protective effect or one of the constituents of the tobacco products [16]. Since, nicotine is systemically absorbed in smokers compared to smokeless tobacco; hence former should have less protective effect than latter.

### CONCLUSION:

The study found out that aphthous ulcer formation tends to occur more in non tobacco users compared to the other. The initial phases can be cured by proton pump inhibitors and antibiotics and the condition may worsen without therapy.

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