From Habit to Health

Areca Nut Chewing Addiction might lead to Oral Damage

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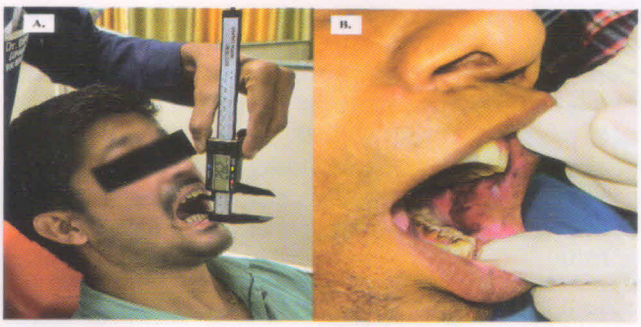
THE consumption of areca nut (*Areca catechu*) has been a cultural and social practice in many South Asian countries like India, Pakistan, Bangladesh, Cambodia, Laos, Thailand, the Philippines, etc., for a long time. In India, areca nut is generally used in the preparation of gutka and paan or betel quid. The composition of gutka includes tobacco, crushed areca nut and various spices, whereas the preparation of paan is accompanied by slaked lime, betel leaves and other flavouring agents, with tobacco being optional. The chewing of areca nut is addictive and may contribute to the development of various oral diseases or disorders, including Oral Submucous Fibrosis (OSMF). According to World Health Organisation statistics, more than 5 million people suffer from OSMF globally. In particular, the Indian population is the most affected among all South Asian countries; therefore, it is referred to as 'Indian' disease. The reason behind this predominant incidence in Indian natives and emigrants is clearly indicated by the habitual consumption of gutka and panmasala.

The prevalence of areca nut consumption with or without tobacco is at an alarming rate in India. In rural areas, it is consumed by about 34.7% of the males as compared with 32.4% of the females. In urban areas, the consumption rate among males is about 37.8% and it is about 29.7% in females. Adolescents are frequent users of areca nut products, with 16.4% using them frequently and 13% consuming them occasionally. The easy availability, low cost, and peer



(A) Restricted mouth opening (B) Scarring area of buccal mucosa in OSMF patient

with habit of chewing areca nut have an impact on the high occurrence of areca nut consumption and associated OSMF. Even the well-educated members of the society are consuming areca nut, where 12.5% are consuming it regularly and 27.5% use it occasionally. It is important to note that consumption is higher in lower socioeconomic groups who are illiterate and daily wage earners.

Oral Submucous Fibrosis is recognised as the most prevalent precancerous condition associated with oral cancer. The presence of this disorder in India dates back to the era of Sushruta (600 BC), who referred to it as "Vidari". Various terms have been used over time to describe this condition until 1966, when Pindborg and Sirsat formally introduced the term Oral Submucous Fibrosis. More and Rao (2019) further redefined OSMF as "a debilitating, progressive, irreversible collagen metabolic disorder induced by chronic chewing of areca nut and its commercial preparations; affecting the oral mucosa and occasionally the pharynx and oesophagus; leading to mucosal stiffness and functional morbidity; and has a potential risk of malignant transformation".

Oral mucosa or oral mucous membrane is the moist lining present at the surface of the oral cavity and is composed of two separate tissue components: a covering epithelium and an underlying connective tissue (lamina propria). Oral mucosa is preceded by skin mucosa and followed by gastrointestinal mucosa, and performs several functions like protection, sensation and secretion. The frequent chewing of areca nut causes injury in the oral mucosa, thereby disrupting the structural protective layer and allowing harmful metabolites to penetrate and accumulate in the deeper tissues. This results in the production of more and more collagen that can cause fibrosis as a restorative response to the damage in the oral mucosa. This collagen overproduction and its decreased degradation are the hallmark of OSMF. In OSMF, the mouth opening is restricted due to the formation of a fibrotic band.

Oral submucous fibrosis is a collagen-related disorder where collagen production increases and its degradation decreases, which ultimately leads to fibrosis. In addition, transformation of connective tissue into a homogenous acellular translucent material (hyalinization) and progressive