



Letter to Editors

Physiotherapy in oral submucous fibrosis can increase the malignant potential



Oral submucous fibrosis (OSF) is a chronic debilitating disease characterized by fibrosis in the extracellular matrix leading to stiffness of the oral mucosa [1]. Increased stiffness associated with fibrosis is one of the major causes of malignant transformation of OSF.

Hypothesis

Physiotherapy related stretching of oral mucosa in OSF patients promotes disease progression and increases the malignant potential.

The primary aim in OSF treatment is to improve the mouth opening. In this regard, the medicinal and surgical treatments are always accompanied by the physiotherapy exercises. Physiotherapy involves certain mouth exercise as well as use of certain aids such as balloon, wooden sticks or mouth opening devices. All physiotherapy efforts to improve the mouth opening are ultimately related to the stretching of buccal and labial mucosa for certain period of time in a day. There is no calibrated control over the degree of stretching instituted by the patient or the clinician. As treatment response is very slow in OSF patients, the physiotherapy related stretching of oral mucosa is continued for long period of time.

Prolonged intermittent mechanical stretching is known to more fibrosis in the tissue via activation of transforming growth factor (TGF)- β 1. This is mediated by physically opening the binding between the latent TGF- β 1-binding protein, the latency-associated peptide, and the α v integrins [2]. Moreover, mechanical stretching also known to cause elevated matrix metalloproteases (MMPs) activity and reduced activity of tissue inhibitors of matrix metalloproteases (TIMPs) [2]. Thus, mechanical stretch of tissue shows evidence of increased fibrosis. We believe that, in already fibrotic conditions such as OSF, the act of stretching might further exacerbate the lesion. Logically, this could also exacerbate the already acting stiffness related carcinogenesis events. This is an extremely important event as it is directly related to the potential for malignant transformation of OSF. In vitro studies have already proved the role of matrix stiffness in initiation and progression of carcinogenesis. To prove the cause and effect relationship, there is dire need for a prospective case control study on use of physiotherapy

and incidence of malignant transformation in OSF population.

Funding source

None declared.

Declaration of Competing Interest

None declared.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.mehy.2019.109298>.

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