SCANNING ELECTRON MICROSCOPIC (SEM) STUDY OF CONNECTIVE TISSUE CORES (CTC s) OF THE BUCCAL MUCOSA IN SUBMUCOUS FIBROSIS

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Oral submucous fibrosis (OSF) is a chronic disease of the oral cavity characterizing inflammatory reaction followed by severe fibro-elastic changes. The aim of the present study was to study the scanning electron microscopic changes in connective tissue cores (CTCs) of the oral mucosa in submucous fibrosis.

The sample consisted of buccal mucosal biopsies from ten subjects of whom, five were from clinically detected moderate to severe oral submucous fibrosis (OSF) patients and five from unaffected controls ranging in age from 40-45 years. Half of each biopsy was formalin-fixed and paraffin-embedded for H&E and aldehyde fuschin staining. The other half was rinsed with Cacodylate buffer and fixed in Karnovsky's solution for scanning electron microscopic (SEM) study. All specimens were treated with HCl to exfoliate the epithelium and were processed to be examined under scanning electron microscope (SEM).

Oral submucous fibrosis (OSF) specimens exhibited heavily packed aldehyde fuschin positive fibers submucosally under light microscope. Broad bundles were seen in a concentrated manner in the deeper tissues. The connective tissue cores (CTCs) of the controls, when examined under SEM showed regular, dense, evenly distributed, finger like projections. Oral submucous fibrosis (OSF) tissue showed patchy degenerations of the connective tissue cores (CTCs). The CTCs around the degenerated patches were diminished both in size and number. However, the distribution of patches and the diminution of the size and the density of the CTCs varied with the severity of the disease. The CTC surface in severe cases was seen to be highly degenerated and smooth.

Scanning electron microscopic (SEM) study showed morphological changes in the CTCs of the OSF patients. The patchy degenerations of the CTCs increased gradually with the progression of the disease. Highly fibrosed cases showed severe degeneration of the CTCs and smoothening of the surface. Further studies are in progress to confirm these findings.