"FIBROCYTES AND MYOFIBROBLASTS IN INFLAMMATORY LESIONS, CARCINOMA FREE MARGINS AND ORAL SQUAMOUS CELL CARCINOMA"

by

Dr. JYOTHI B.M.

Dissertation Submitted to the
Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

In partial fulfillment
of the requirements for the degree of

MASTER OF DENTAL SURGERY
in

ORAL & MAXILLOFACIAL PATHOLOGY & MICROBIOLOGY

Under the guidance of
Dr. AMSAVARDANI TAYAAR @ PADMINI. S

DEPARTMENT OF ORAL PATHOLOGY
S.D.M. COLLEGE OF DENTAL SCIENCES & HOSPITAL,
DHARWAD

APRIL 2012

ABSTRACT

Background and purpose:

Stromal elements play a key role in the process of wound healing and carcinogenesis. The purpose of the study was to investigate the presence and distribution of fibrocytes and myofibroblasts in chronic inflammatory lesions, tumour free surgical margins and Oral Squamous Cell Carcinoma.

Methods:

We semiquantitatively assessed fibrocytes and myofibroblasts in normal oral mucosa (N; n=10) and chronic inflammatory lesions (CI; n=10), tumour free surgical margins (SM; n=15) and Oral Squamous Cell Carcinoma (OSCC; n=20) through a double staining immunohistochemical technique using monoclonal antibodies for CD34 and α–SMA.

Results:

Fibrocytes were observed in N and SM with a higher frequency in dysplastic margins. Myofibroblasts were observed in CI of duration greater than or equal to six months at the centre of the lesion. They were seen in most of the OSCC with heterogeneity in apparent frequency and patterns. A statistically significant difference exists between fibrocytes in N and CI ($p=0.0082$), N and OSCC ($p=0.0007$) and SM and OSCC ($p=0.0111$); myofibroblasts in N and OSCC ($p=0.0001$), CI and SM ($p=0.0350$) and SM and OSCC ($p=0.0000$).

Interpretation and Conclusion:

We conclude that stromal changes in OSCC are characterized by a loss of CD34+ fibrocytes and subsequent gain of α-SMA-positive myofibroblasts. The diagnostic impact of this finding is however, limited by the fact that CI and SM also depict loss of CD34+ fibrocytes. Myofibroblasts randomly arranged seems to be highly characteristic of OSCC and shows promise as a specific stromal marker for invasion.

Keywords: Fibrocytes; Myofibroblasts; CD34; α– SMA; surgical margins; chronic inflammatory lesions; OSCC.