

ABSTRACT

BACKGROUND:

Oral squamous cell carcinoma(OSCC) is the sixth most common human cancer, with an increasing incidence in younger people causing a high morbidity & mortality rate in older persons. The mainstay of treatment for OSCC is usually surgery followed by radiotherapy. One of the important complications of Radiotherapy is its potential to damage the major salivary glands. It causes morphological alterations in the glands and also affects the composition of saliva.

AIM:

To analyse ultrasonographic changes of parotid and submandibular salivary glands and Biochemical analysis of whole saliva in oral cancer patients before and after radiotherapy

OBJECTIVES:

Ultrasonographic analysis of parotid & submandibular salivary glands size, margins, echotexture, echogenicity, and vascularity (colour Doppler) before and six weeks after radiotherapy and Assessment of salivary Na, K, Ca, pH, salivary amylase, salivary total protein in oral cancer patients before and six weeks after radiotherapy.

METHODS:

A total of 30 oral cancer patients were selected for this study. Among the 30 patients 23 were males and 7 females. Age range of the patient was 30-70. All were planned for conventional radiation treatment.

Ultrasonographic evaluation of 60 parotids and 60 submandibular glands were done prior to radiotherapy and six weeks after completion of radiotherapy. Unstimulated Whole saliva was collected under resting conditions in a quiet room, between 8 am and noon, at least 1 hour after food intake in same patients on the day of ultrasound.

RESULTS:

When comparing the post radiotherapy USG changes of salivary glands length, width, depth with preradiotherapy USG values, and the salivary biochemical pre and post radiotherapy values, we found that the results were statistically significant. P value =0.000.

CONCLUSION:

On ultrasonographic examination we observed decrease in size of salivary glands following radiotherapy. There was significant decrease in length, width and depth and changes in margin from regular to irregular, echotexture from homogenous to heterogenous and echogenicity from hyperechoic to hypoechoic. These changes in salivary glands can be related to chronic inflammation which sets in the glands after exposure to radiation and which leads to subsequent fibrous changes in glands. In salivary evaluation pH is significantly reduced, Na, Ca, Total protein levels were significantly increased. Pottasium and salivary amylase levels were significantly reduced after radiotherapy. These changes can be related to parenchymal damage and acinar loss.

KEY WORDS:

Oral cancer, Radiotherapy, Ultrasonography, Salivary glands