

M. Digestive Tracts (GI Tract and Pancreas)

Evaluation of Disturbance of the Salivary Glands Using $^{99m}\text{Tc O}_4^-$

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Radiation-induced disturbance of the salivary glands was analyzed in 45 patients with head and neck tumors by scinti-dynamic method. After the injection of 2-3 mCi $^{99m}\text{TcO}_4^-$, serial frontal views of the salivary glands and radio-sialograms were taken, while in the middle of the examination 1% citric acid was used for stimulation of the saliva secretion.

The irradiated glands showed poor visualization on the scintigraphic images. Various parameters were calculated on the radio-sialograms. In un-irradiated patients, half time ($T_{1/2}$) in the initial build up region of the curve of the parotid gland was significantly greater than that of the submandibular gland. A ratio (Rc) expressed as pre-stimu-

lation counts (cpm) divided by post-stimulation counts (cpm) was greater in the parotid gland than that of the submandibular gland. The Rc of the normal glands was significantly greater than that of the irradiated glands. A ratio (R) defined as counts on the salivary glands divided by counts on the nasal area showed greater value in the normal gland than in the irradiated glands. Both Rc and R were of increased values with elapsed time after radiotherapy, which appeared to mean that some functional recovery from radiation damage occurred with time. An emphasis was placed on the usefulness of using 1% citric acid stimulation for evaluating the secretory force of the salivary glands.

The Clinical Diagnostic Significance of the Subtraction Technique Applied to Pancreas Scanning

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The clinical significance of pancreas scanning has been highly evaluated in the diagnosis of pancreatic disease. There is, however, some difficulty in interpretation of pancreas scan because of superimposition of the liver image over the pancreas image.

In order to resolve this difficulty, subtraction technique is introduced to the pancreas scanning. Following simultaneous injection of ^{75}Se -Selenomethionine 200 μCi and ^{99m}Tc -Sn-phytate 2mCi

intravenously, the liver scan and pancreas scan images respectively stored into the disc with LFOV gama camera and Scintipac 200. After sotring the images of liver and pancreas, the liver image is subtracted from the pancreas scan image, and then the pancreas image is clearly demonstrated. In about 65% of the all cases of pancreas scan, the improvement of interpretation is obtained.