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QUANTATIVE ANALYSIS OF IRRADIATED MAJOR SALIVARY GLAND DYSFUNCTION BY SEQUENTIAL SALIVARY GLAND SCINTIGRAPHY. S.Jinnouchi, H.Hoshi, Y.Kihara, K.Watanabe. Department of Radiology, Miyazaki Medical College, Miyazaki.

Major salivary gland dysfunction of 40 irradiated patients with malignant tumor in the head and neck was evaluated quantitatively by sequential salivary gland scintigraphy. After intravenous injection of 10 mCi of Tc-99m pertechnetate, the data was stored in a computer system from 0 to 50 minute and serial dynamic images were taken at every 3 minutes. Lemon juice was given at 30 minute. 5 R.O.I., which were 4 major salivary gland and background (the forehead), were made. Peak count (P), count at 30 min. (X), count at the reactive excretion time (Y) and minimum count after the reactive excretion (Z) were pointed on the time activity curve. Using background count (B) and time rap between X and Y (t), next three parameters were calculated.

(1) Uptake rate (Ku)= $P-B/P$ , (2) Excretion rate (Ke)= $X-Z/X-B$ , (3) Excretion velocity (Ve)= $(\ln X/Y) / t$ .

Ku, Ke and Ve in non-irradiated cases were  $0.63 \pm 0.10$ ,  $0.70 \pm 0.13$  and  $0.49 \pm 0.19$  (parotid gland),  $0.70 \pm 0.08$ ,  $0.52 \pm 0.18$  and  $0.57 \pm 0.15$  (submandibular gland) respectively. In cases irradiated more than 30Gy Ku did not almostly change, but Ke and Ve decreased markedly and were almost 0.

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A TRIAL FOR ESTIMATION OF THERAPY BY SIALOSCINTIGRAPHY -FOR STEROID THERAPY- S.Tsutsui, H.Shibatsuji, H.Yoshimura, K.Tanaka, K.Dohi and S.Hamada. Nara Medical University. I.Fushimi. Saiseikai Suita Hospital.

It was reported previous by that evaluation of the sialoscintigraphy -peak time and the reaction for tartaric acid- was useful to diagnose and grade functionally Sjogrens syndrome. (Sjs). The treatment for Sjs is not established, for 20 cases with Sjs treated by steroid hormone is presented. Tartaric acid was given at 50 minutes after injection of 10ml of  $^{99m}\text{Tc}$ -pertechnetate and various parameters were calculated. In most of the cases, peak time didnt change before and after therapy. In few cases, oral activity was seen earlier after therapy. Degree of Rubins classification was the higher, steroid therapy was the more effective and reaction for tartaric acid is the more sensitive.

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SALIVARY GLAND SCAN OF WARTHIN'S TUMOR. T.Hashimoto, S.kosuda, Y.Takagi, F.Kinoshita, A.Kubo, S.Hashimoto. Department of Radiology. S.Haraguchi, Y.Murakami. Department of Otolaryngology, Keio University School of Medicine. Tokyo.

Parotid masses showing hot module on Tc-99m-pertechnetate salivary gland scan are warthin's tumor, oncocytoma and so on. However, other than warthin's tumor are very rare and then the hot nodule corresponding to palpable mass should be thought to be warthin's tumor first of all. 495 salivary gland scans doubting parotid gland tumor were performed since 1976. Twenty one cases of them(4.2%) were pathologically diagnosed to be warthin's tumor. On a Tc-99m-pertechnetate salivary gland scan all cases showed hot nodules and were not washed out with lemon juice. Of 5 lesions, Ga-67-citrate scan showed abnormal accumulation, thought to be accumulated at accompanying inflammation. Tc-99m-pertechnetate salivary gland scan is able to pathologically diagnose the warthin's tumor, so it is thought to be very useful diagnostic procedure clinically.

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A method of RI examination to estimate for esophageal function. R.Hatakeyama, K.Kiuchi, M.wada, T.Kusumoto, N.Ishikawa and M.Akisada. Tsukuba University Hospital. (Department of Radiology and Otorhinolaryngology\*)

There are some reports to estimate for esophageal function using RI method. We think out one method, that is compared with esophageal function and can also be represented mucosal condition of esophagus.  $^{99m}\text{TcO}_4$  were mixed with 20ml of water and 3g Arabic gum.

This materials have 12.0cSt dynamic viscosity by Ubbelohde method and have character of 130% Ba suspension. Examination was performed on sitting position and mixed material were drunk at one drink. The data of scintigrams were got at the rate of 0.2 sec/frame and stored Scintipack 230.

Objective area were set from orifice of esophagus to upper portion of cardia. And time frame histogram was gained.

The analysis of arrival time, passage time and segmental time interval on setting area was not so difficult. So this method was one of the good techniquis to evaluate esophageal function.

Finally static scintigram was got after wash out of esophagus by a few ml of water.

The efficacy of this techniquis will be reported in comparison with cine method.