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APPLICATION OF RI-SIALOGRAPHY FOR CLINICAL EVALUATION OF SALIVARY GLAND FUNCTION. ( 1 ST REPORT ) F. Nakanishi, T. Kasuga, T. Ohata, Y. Okazaki, T. Kobayashi, T. Yamazaki, S. Takeda, K. Yano and H. Hirano. Shinshu University School of Medicine. Matsumoto.

The major salivary gland function was studied in 74 cases under normal and pathologic conditions. After i.v. administration of Tc-99m pertechnetate, the data were stored in minicomputer from 0 to 40 min. In the course of examination, lemon juice was given at 30 min. Dynamic curves were obtained from this data and accumulation rate and excretion rate were calculated for quantitative evaluation of salivary gland function. These two parameters reliably separated normal cases from pathologic cases. Decreased accumulation rate and excretion rate were obtained in cases with chronic inflammation, calculi, irradiated gland and Sjogren's syndrome. Correlations between accumulation rate and excretion rate were shown in the normal salivary gland. The results suggested that as a simple and practical technique, it would be possible to cut the examination time at the first 10 min. and to evaluate the dynamic curve in pre and post stimulation period, in addition to excretion rate.

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APPLICATION OF RI-SIALOGRAPHY FOR CLINICAL EVALUATION OF SALIVARY GLAND FUNCTION. T. Yamazaki, \* S. Takeda, \* A. Kotani, \* T. Kasuga, \* F. Nakanishi. \*\* \*Department of Dentistry and Oral surgery, \*\*Department of Radiology, Shinshu University School of Medicine. Matsumoto.

By using sialography and Tc-99m scintigraphy, we observed the relationship of clinical findings and prognosis in 21 patients with various salivary lesions.

- 1) Cases with defect, globular and punctate patterns in sialogram showed a remarkable decreased accumulation in the scintigram and showed a low excretion rate.
- 2) Cases with major salivary duct having a remarkable stenosis and segmented dilations in sialogram, showed an upward pattern at the time-activity curve and negative excretion rate in RI-sialogram.
- 3) The condition of an obstructive small salivary duct indicated a low excretion rate.

From these results, RI-sialogram was useful for evaluating the salivary gland function and salivary duct conditions.

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QUANTITATIVE ANALYSIS OF VARIOUS SALIVARY GLAND DISEASES BY SEQUENTIAL SALIVARY GLAND SCINTIGRAPHY. H. ISHIKAWA, Y. ISHII, Y. SHIMIZU, G. HITOMI, T. MUKAI, T. FUJITA, AND K. TORIZUKA, DEPT. OF ORAL & MAXILLOFACIAL SURGERY, RADIOLOGY & NUCLEAR MEDICINE, FACULTY OF MEDICINE, KYOTO UNIVERSITY, KYOTO.

We evaluated salivary gland function quantitatively with various salivary gland diseases by sequential salivary gland scintigraphy. There were 48 cases; normal 3, Sjogren's syndrome 11, xerostomia 13, radiation xerostomia 6, sialoadenitis 12, parotid tumor 1, ranula 1, and Frey's syndrome 1. 3 mCi of Tc-99m pertechnetate was injected intravenously and RI images were taken using Pho/Gamma LFOV (30° 2 directional collimator). The data collection was made a minute on base of 1 K/count cm<sup>2</sup>. Tolerance test was also performed with oral administration of ascorbic acid. Sequential change of RI uptake, difference of RI uptake between both sides, RI uptake ratio, RI uptake at 10 minutes after RI injection and change of RI uptake on tolerance test were assessed. The maximal RI normal time were 30 or 35 minutes in the parotid gland and 5 to 8 minutes in the submandibular gland, respectively. On the excretory dysfunction, the maximal RI uptake time tended to be delay, and difference of RI uptake between both sides was increased. Further, RI uptake ratio, RI uptake at 10 minutes and change of RI uptake on tolerance test were also decreased.

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FUNCTIONAL STUDIES OF SEQUENTIAL SALIVARY GLAND SCINTIGRAPHY IN SJOGREN'S SYNDROME. S. Tsutsui, H. Shibatsuji, K. Tanaka, S. Hamada, K. Dohi and I. Fushimi. Nara Medical University, Kashihara and Saiseikai Suita Hosp., Suita.

Sequential scintigraphy was performed in 71 patients suspected Sjogren's syndrome (Sjs) and 7 volunteers. Immediately after injection of 10 mCi of Tc-99m pertechnetate, the data were stored in magnetic tape at 10 seconds intervals and serial dynamic images were taken at every 10 minutes. Those were expressed as indexes, which peak time, peak count, the appearance time of oral activity (OA) and the rate between the pre- and post-stimulation activity counts (TSR).

In volunteers, the average of peak time was 36 minutes, but in Sjs was over 50 minutes. Peak time was more valuable for detecting minor abnormalities. TSR was correlated with Rubin's classification of sialography and Shirmer's test. On the contrary, peak count and OA were not correlated with those. TSR was thought to be valuable in assessing a functional level in abnormalities. There was no relationship between TSR and the classification of biopsy material of salivary gland and renal tissue.