

Some interesting cases were investigated on salivary scintigrams.

1. Malignant tumor (reticulo-sarcoma originated in the left submandibular gland).— ^{99m}Tc -uptake was absent. This absence was result of hypofunction of the gland.

2. Benign tumor (fibroma occurred near the right submandibular gland).—The scintigram showed the displacement of the gland, but ^{99m}Tc -accumulation was normal.

4. A patient after treatment of telecobalt-60, whose left parotis was included in radiation field, showed no visualization of parotis on the scintigram.

It resulted from hypofunction due to radiation injury.

Summary

In our study it was found that obtained scintigrams were valuable for diagnosis of salivary disorders. Thus salivary scanning must be used more as routine examination of the gland because of informations on the location, the size and the function of salivary parenchyma with easier technics and less pain to patients. Further the diagnosis of salivary disorders will be more accurate in this scanning together with sialograms which give information on the status of duct system.

Reevaluation of ^{131}I -Triolein Test—Clinical and Basic Studies

II) Significance of purified ^{131}I -Triolein

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This study was performed to reevaluate ^{131}I -Triolein test.

1) Experimental study

Cannules were placed in thoracic duct, portal vein and femoral vein of adult dogs. Labelled Triolein (commercial or purified by thin layer chromatography) was administered into the stomach or duodenum with cold meal of peanut oil. The results are as follows; In the case of commercial triolein, the radioactivity appeared predominantly in thoracic lymph in comparison with portal plasma. $90.4 \pm 6.3\%$ of radioactivity of thoracic lymph was precipitated by T.C.A. By thin layer chromatography, $76.7 \pm 8.1\%$ of radioactivity of thoracic lymph existed in the fraction of T.G. In portal plasma, however, 40% of radioactivity was found in PL fraction.

In the case of purified triolein administration, radioactivity appeared only in thoracic lymph but activity of portal plasma was negligible. So was in the case of ^{14}C -Triolein absorption test. Not only the high ratio of $97.4 \pm 3.9\%$ of radioactivity precipitated by T.C.A. from thoracic lymph, but also $86.8 \pm 3.9\%$ of the activity of thoracic lymph lipids was recovered in TG fraction. This result means the same biochemical mechanism of

absorption of chromatographically purified ^{131}I -Triolein with ^{14}C -labelled Triolein.

2) Clinical study

Radioiodinated Triolein tests using commercial or purified substances were performed on patients in order to compare with fat balance study. Stool specimens were collected for three days and blood samples were also collected in 3, 4, 5 and 6 hours after administration of radioiodinated triolein. Fat balance study was performed after the method of van de Kamer.

The results are as follows; Only from 30 to 50% of the radioactivity of the venous blood was precipitated by T.C.A. regardless of commercial or purified triolein. Radioactivity of fats in the blood extracted after Folch method was evaluated in each fraction by T.L.C. Much radioactivity was observed in the fraction of FFA instead of TG which contained high radioactivity in thoracic lymph. From above findings, it is not proper to evaluate fecal excretion rate of ^{131}I -Triolein on the basis of radioactivity levels of blood, which are effected by the metabolism of fat as well as absorption. Fecal excretion rate using purified ^{131}I -Triolein corresponded more to that of fat balance study than the results

using commercial ^{131}I -Triolein.

To summarize, the present study, clinical

and experimental, indicates the necessity of the purification of commercial ^{131}I -Triolein.

Studies on D. Berkowitz's Method (The 3rd Report) Special Reference to Pediatric Field

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The Triolein and Oleic Acid Test has been incorrect, because of impurity of the commercial products.

They were assayed on the paper chromatogram and thin layer chromatogram. It was concluded that the test was correct if it was performed during a week after the assay.

We applied this method on children. The

normal criteria of the triolein and oleic acid test ranged from 8% to 16% at 4 or 6 hrs.

The children showed no significant influence on the data without any restriction of the pre-operative food intake, although it is desired that the test is performed with the stomach empty or after intake of the cold meal.

Absorption of Fatty Acids of Different Chain Lengths and Medium Chain Triglyceride

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The absorption of oleic acid, linoleic acid, palmitic acid and sodium trioctanoate labeled with ^{14}C in the carboxyl position were measured in rats and the form of administered glyceryl trioctanoate-1- ^{14}C (MCT) in the liver and in the portal blood were studied in dogs by the gas chromatography and the thin-layer chromatography.

Medium chain fatty acid (C_8) fed to rats was absorbed about 80 per cent but long chain fatty acids less than 50 per cent in one hour.

In vivo experiments using isolated loops of dog intestine in accordance with the blood vessel distribution in the mesenterium were carried out. MCT was administered into the isolated loops and the venous blood was con-

tinuously collected with polyethylene tube. This experiments indicated that MCT was more absorbed in the middle portion of the intestine of the dogs.

The largest part of the ^{14}C -activity in the lipid of portal blood was found in the fatty acid fraction and agreed with the administered lipid (C_8).

Half of the ^{14}C -activity of the lipid in the liver was in the phospholipid, 35 per cent in the triglyceride but low in the fatty acid fraction.

In 75 minutes, 21~25 per cent of the administered dose and 27~32 per cent of the absorbed dose of radioactivity were recovered as the expired $^{14}\text{CO}_2$ in the rats.