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RENAL DYNAMIC STUDIES USING Tc-99m DTPA BEFORE AND AFTER EXTRACORPOREAL SHOCK-WAVE LITHOTRIPSY. E.Ohtake, H.Murata, H.Matsuda, M.Yokoyama and H.Toyama. Tokyo Senbai Hospital, Toranomon Hospital and University of Tsukuba, Tokyo and Ibaraki.

This study was undertaken to evaluate the renal function before and after extracorporeal shock-wave lithotripsy (ESWL).

Forty-six cases were examined in this study. They were 31 patients with renal stone, 14 with ureteral stone and one with renal and ureteral stones. Sequential renal images of the vascular phase, and the functional and excretory phases were taken by a gamma camera (ZLC-7500, Siemens), after intravenous injection of 15 mCi of Tc-99m DTPA. Data were stored every ten seconds for 30 minutes by a computer (Scintipac-2400, Shimadzu). Renograms and factor analyses were generated using these data.

The renal hypofunction induced by shock-waves was observed for a time. Renal functions were improved in half patients after a month of ESWL. The main causes of unimproved renal functions were urinary tract infection and the formation of stone street.

Factor analyses were superior to conventional renograms in detailed studies of renal functions.

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CLINICAL EVALUATION OF A NEW RENAL SCANNING AGENT, Tc-99m-DIMERCAPTO PROPIONIC ACID (DMP) H.Kurauchi, T.Machida, Y.Ohishi, M.Yanagisawa, A.Tanaka, T.Shimada and K.Murata. Jikei University School of Medicine and Toranomon Hospital, Tokyo.

Our developed renal scanning agent, dimercapto propionic acid (DMP) was examined for its clinical use. DMP have the simplest chemical structure among the compounds which are now being used. Tc-99m-DMP was prepared from a mixture of DMP:Sn⁺⁺(3:1) at pH 2 to 3 in the presence of TcO₄⁻ as reported before. Since the most clear images were observed from 120 to 150 minutes after intravenous bolus injection of Tc-99m-DMP (2.8mCi), clinical scintiphos were taken 2 hrs after injection using a γ -camera. Normal renal images were similar to those of DMS which showed high accumulation in the cortex, but low in the medulla. Fifty clinical cases are reported. In compare with DMS, Tc-99m-DMP gave relatively good renal images along with a little radioactive accumulation in the liver. Labeled DMP can be easily prepared and found to be the most promise renal agent in clinical fields.

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EVALUATION OF THE ADRENAL SCANNING IN ADRENAL TUMORS. F.Yoshigoe, T.Matida, Y.Ohishi, M.Ueda, A.Kido, K.Tasiro, S.Torii, N.Furuta. Jikei University School of Medicine, Tokyo.

We evaluated the value of the localization of adrenal scanning in the 38 patients. We have performed adrenal scanning using I-131 adosterol. In the 34 patients, 26(76.5%) were proved the localization, so 13 out of 18 patients with primary aldosteronism (13/18), 4 patients with pheochromocytoma (4/4) and 2 patients with ganglioneuroma (2/2) were proved the localization of the adenomas. The adrenal scanning using I-131 MIBG was performed in the 2 patients with Sipple syndrome. Both of them were proved of the localization of the adenomas. This study showed the adrenal scanning was comparatively effective in lateralizing adenomas in the patients with primary aldosteronism. So in 6 out of 18 patients, suppression scannings were performed. but the value of suppression scanning was not recognized in this patients.

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CLINICAL USEFULNESS OF MEASUREMENT OF PERCENT UPTAKE VALUES OF I-131-ADOSTEROL WITH SPECT IN UNILATERAL CASES IN ADRENAL IMAGING. J.Ishimura, M.Suehiro, K.Tachibana and M.Fukuchi. Department of Nuclear Medicine and RI Center, Hyogo College of Medicine, Nishinomiya, Hyogo.

This paper describes the clinical usefulness of the measurement of percent uptake values of I-131-Adosterol with SPECT in such cases. Twelve unilateral positive cases were studied in this study. In final diagnosis, 3 cases with hyperfunctioning adrenal cortex (H-group) were 2 cases with adenoma of Cushing's syndrome and a case with pheochromocytoma with cortical hyperplasia, and 9 cases with normal functioning adrenal cortex (N-group) were 3 cases with primary and metastatic adrenal malignancy, a case with giant renal cyst and 5 cases of surgical removal of unilateral gland. The method of measurement of percent uptake values was the standard method with SPECT that previously reported. The percent uptake values of H-group ranged from 1.1% to 3.1% with a mean of 1.97 \pm 0.84%. On the other hand, the percent uptake values of N-group ranged from 0.3% to 1.0% with a mean of 0.64 \pm 0.28%. These data show there is no overlap in percent uptake values between H-group and N-group. In unilateral positive cases, the measurement of percent uptake values with SPECT is useful for the evaluation of the adrenocortical imaging.