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PHOTON-DEFICIENT KIDNEY IN Tc-99mDTPA SERIES. H.Seto, R.Futatsuya, M.Kakishita, K.Ichiyanaqi and K.Hisada. Toyama Medical and Pharmaceutical University and Kanazawa University School of Medicine. Toyama and Kanazawa.

Dynamic renal imaging with Tc-99mDTPA is widely used to assess perfusion, filtration, and excretion. During a first few minutes, the tracer is distributed to the organs in proportion to the amount of blood flow.

Of 700 patients with Tc-99mDTPA series, we noticed 12 cases of a photon-deficient kidney, corresponding to the entire missing kidney on an IVP. Etiology and mechanism of Photon-deficient kidneys were discussed in comparison with 15 cases of renal malignancy in the same duration.

Etiologies include 7 hydronephrosis, 1 multicystic kidney, and 4 polycystic kidney. In 10 cases, photon-deficient kidneys were significantly enlarged. The rest revealed normal sized kidneys. In 12 of 15 renal malignancy cases, the diseased kidneys were significantly enlarged. The rest showed no enlargement. However no photon-deficient kidneys were noted in all renal malignancy cases.

In conclusion, 1) Etiologies of photon-deficient kidneys without hematuria are most likely to be benign disorders. 2) Their mechanism could be due to a nonfunctioning enlargement of kidney, sufficient to absorb gamma ray. 3) No significant information was obtained with Tc-99mDMSA static image in photon-deficient kidney with Tc-99mDTPA.

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CLINICAL EVALUATION OF RENAL IMAGING INCIDENTAL TO BONE SCINTIGRAPHY. T.Imoto, Y.Oshiumi, K.Kamoi, Y.Ichiya, A.Uchino, H.Yamada and K.Matsuura. National Kyushu Cancer Center Hospital, Kyushu University. Fukuoka

The reliability of renal images using Tc-99m-MDP was evaluated clinically by comparing with findings of intravenous pyelogram (IVP). Bone scan and IVP were performed at Kyushu University Hospital from April 1978 to March 1980. Renal images of 134 bone scans were reviewed in contrast to findings of IVP retrospectively. In result, overall accuracy was 81.3%, false positive rate was 11.8% and false negative rate was 30.6%. They suggest that an abnormality of renal image on bone scan warrants further investigation while a normal image does not always exclude renal abnormality.