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RADIONUCLIDES IN TRANSPLANTATION—
EVALUATION OF POST-TRANSPLANT REJECTION.
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Evaluation and prognostic value of post-transplant rejection from the image of Tc-99m-DTPA renoscintiscan were investigated. Serial camera images of 29 kidney transplants, detected by pathological diagnosis were used in this study.

The camera images were classified making a comparison between the size of vascular phase(V.P.) and the size of accumulation phase(A.P.). In the case of $V.P. \geq A.P.$, normal or minor change was showed in pathological finding. In the case of $V.P. < A.P.$, various finding of rejection was recognized. Furthermore, when gradually enlarging of V.P. was noted, cellular type of rejection was showed, the other way, when gradually reduction of V.P. was noted, vascular type of rejection was frequently showed in pathological finding. In the case of disappearing of V.P., severe type of vascular rejection was recognized.

The classification employed in this study by us is an useful and reliable one for the evaluation and the estimation of prognosis of post-transplant rejection.

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ESTIMATING PROGNOSIS OF TRANSPLANTED KIDNEYS BY ANALYSIS OF REGIONAL RENAL DYNAMIC PROCESS WITH Tc-99m DTPA. T.Suzuki, S.Aoki, Y.Satoh, H.Furunishi, T.Yamazaki, K.Masuda, M.Hamazu, T.Honda, Y.Ikemoto, T.Yamazaki, K.Pak, K.Okino, and Y.Nakane. Shiga Medical School, Ohtsu.

We evaluated the possibility to estimate acute tubular necrosis and rejection in the transplanted kidney by analyzing the regional renal dynamic process with Tc-99m DTPA. Tc-99m DTPA 20 mCi was injected into the vein by a bolus, and its activity change in the kidneys was measured and recorded by a scinti-camera and a digital computer. Regions of interest were settled in the cortex, the medulla and the pelvis by the serial scinti-images, and the functional parameters(renal blood flow, accumulation and clearance) in each region were calculated. In acute tubular necrosis and rejection, the decrease of the renal blood flow and the great decrease of the clearance rate in the cortex were characteristic, and the renal blood flow disorder in the former was more severe than the latter.

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RELATIONSHIP BETWEEN PROSTATE CANCER AND PROSTATIC-ACIDPHOSPHATASE.
--CLINICAL EXAMINATION OF FALSE-POSITIVE AND FALSE-NEGATIVE CASES--
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PAP-RIA(Radioimmunoassay for PAP) is very useful tumor marker for cases of prostatic cancer. This report presents the results of our follow-up studies on 16 cases of prostatic cancer with normal levels of PAP(3.0ng/ml or less) at the first visit and 45 cases of benign prostatic hypertrophy(BPH) with elevated levels of PAP at the first visit.

Of the cases of untreated prostatic cancer, 15.3% had PAP levels of 3.0 ng/ml or less. Of these cases, 68% were in Stage A or Stage B. The PAP levels rose thereafter in 2 of the 16 cases, but the maximum level was 14ng/ml. No histological difference was found between the PAP-elevated and PAP-normal cases.

Of the cases of BPH, 7.1% had elevated PAP levels of more than 3.0ng/ml. The mean PAP level was 5.4ng/ml, and the maximum level was 16.8ng/ml. It was noted that urinary retention was seen at the first visit in as many as 22 of the 45 cases(50%) and that the mean weight of the excised adenoma was 38.9gr, two times heavier than that in PAP-normal BPH cases. No histological difference was found between the PAP-elevated and PAP-normal BPH cases.

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UTILITY OF RADIONUCLIDE SCROTAL IMAGING.
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Acute testicular torsion is a surgical emergency that requires immediate intervention, but its symptoms and signs resemble those of acute epididymitis. Hydrocele testis may simulate testicular tumor. Varicocele remains the most common cause of surgically correctable male infertility.

Following intravenous injection of 10-20mCi Tc-99m-pertechnetate, radionuclide scrotal imaging(rapid sequential and 5-20 minute static images) was performed, in 36 patients presenting with various intrascrotal lesions, such as acute epididymitis, testicular torsion, varicocele, testicular tumor, hydrocele testis.

Testicular torsion was diagnosed as an area of diminished or absent perfusion surrounded by a halo of increased radioisotopic uptake, and could be easily differentiated from acute epididymitis, which revealed a markedly increased perfusion. Most of testicular tumors could be differentiated as mass with increased uptake from hydrocele testis. Even subclinical varicocele could be detected as a radionuclide accumulation originating from venous phase, and it became remarkable in upright position of the patient.