

5. The mode of activity loss from the body is chiefly urinary, gall and fecal excretion.

6. ^{131}I -popyodol has no affinity for lymphatic system.

7. Dogs which were drained thoracic duct showed the activity in several organs. This fact proves existence of the thoracic-venous anastomosis.

Studies of Venous Return of Lower Extremities by Subcutaneous Clearance of Radioactive Iodine

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The venous circulation of lower extremities was studied by the subcutaneous injection of Na^{131}I on the dorsum of foot. The clearance was measured in 35 cases, 61 limbs on semisitting position and on standing erect position at interval of 24 hours. Na^{131}I solution, 1-5 microcuries/0.1 ml. was injected in the subcutaneous tissue on the dorsum of foot, and the counts were recorded for 30 minutes. The speed of clearance was expressed as the half life time, $t_{1/2}$.

The extremities studied were divided into 3 groups according to clinical and venographic findings.

Control group: 30 limbs; No pathological findings were noted in lower extremities.

Venous insufficiency group: 15 limbs; Varices and regurgitation of venous flow were observed in the system of the greater saphenous vein.

Venous obstructive group: 16 limbs; Stenosis or obliteration of the greater saphenous vein or/and deep vein was observed.

On semisitting position, range of $t_{1/2}$ in control group was 10-30 minutes, and mean value was 20.8 minutes. Venous insufficiency group was same as control group, and prolonged $t_{1/2}$ was observed in venous obstructive group and mean value was 33.7 minutes.

On standing erect position, $t_{1/2}$ in control group was almost same as on semisitting position, but in venous insufficiency group, $t_{1/2}$ extended and mean value was 39.1 minutes. In venous obstructive group, $t_{1/2}$ was somewhat shortened.

Then, the standing index was defined as follows:

Standing Index =

$$\frac{t_{1/2} \text{ on standing erect position}}{t_{1/2} \text{ on semisitting position}}$$

and this index was calculated in each limbs.

The standing index in each groups is as follows; 69-138 with mean value of 105 in control group, 111-292 with mean value of 172 in venous insufficiency group, and 33-97 with mean value of 70 in venous obstructive group.

The clearance test had been used in supine position only, so it was said that there was no relation between this test and venous circulation. However, we measured the subcutaneous clearance of Na^{131}I on both semisitting position and standing erect position, calculated the standing index, and using this index, the difference of status of venous return in various pathological limbs could be clarified.