SCHEMATIC REPRESENTATION OF COLLATERAL PATHWAYS IN SUPERIOR VENA CAVAL OBSTRUCTION SEEN ON RADIOISOTOPIC SUPERIOR VENA CAVOGRAM ( PART 1 ). T. Muramatsu, M. Mashimo, K. Suzuki, M. Ide, T. Miyamae and Y. Dohi.

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The purpose of this study is to illustrate the various collateral pathways in occlusion of superior vena cava and to discuss the frequency. Radioisotope superior vena cavalography was performed in 45 patients with occlusion of the superior vena cava or its major tributaries. The occluded areas were classified into 5 groups ( Group I: subclavian v. II: brachiocephalic v. III: SVC above the entrance ofazygos v. IV: the entrance of azygos v. V: SVC below the entrance of azygos v. ). In this report we confine our attention to the Group ( 10 occlusions ) and ( 37 occlusions ). Lateral thoracic-azygos system anastomoses ( 60% ) were mainly visualized in Group I. Jugular venous arch anastomoses between rt. and lt. external jugular v. ( 4% ) and lateral thoracic-intern thoracic anastomoses ( 9% ) were mainly visualized in Group II.

2 RADIONUCLIDES MACROAUTORADIOGRAPHY.
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Macroautoradiography using both T99mMAA and Ga67 ( Tz201 ), showed relations between local focus and local blood flow. The distribution of T99mMAA ( pinpoint shadows ) was not uniformity. It was various with spotted pattern or with semiflum pattern. These various patterns showed us local slow or fast blood flow in order that T99mMAA ( size 20μm, g. 1.041 ) began to moved at 30cm/sec. blood flow speed.

TECHNICAL CONDITION
24 hour before operation Ga67 citrate ( Tl201Cl ) 1.5mCi was injected into vein, immediately before operation T99mMAA 5mCi was injected into aorta through continuous intraaortal infusion chemotherapy catheter ( see 1,2,3 ). Material was sliced 3-5mm in thickness, and covered by thin layer vinyl film, and put between X-F film ( PUT RX SAFETY ). Contact time 120-240 hours in frozen room. Develop and fixation. Observation.

REFERENCE
2. ibid, 29 ( 1 ) 533-536, 1980.
3. ibid, 31 ( 2 ) 104-106, 1982.

527 QUANTITATIVE EVALUATION OF THE BLOOD FLOW IN SUPERIOR VENA CAVA BY RI-VENOGRAPHY.
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Radionuclide venography has been used to detect obstructions in the superior vena cava system. This paper describes a clinical evaluation of the quantitative analysis of the blood flow in the superior vena cava using a gamma camera with computer on-line system. Eighteen patients with or without the SVC syndrome were studied in this series. Seven mCi of Tc-99m-HSA were given by bolus injection into each cubital vein and every 1 sec. data from the detector was stored on the disk. The areas over bi-lateral subclavicular veins and the heart were flagged, and curves over these areas were generated using the computer. Peak-to-peak transit time ( PTT ) was measured from these curves. The maximum velocity of inflow and outflow were measured by the differentiated curve over the subclavicular vein. The flow index ( FI ) was also calculated by dividing the maximum velocity of outflow by inflow. In 10 patients without the SVC syndrome, PTT was 2.8±1.2 sec. and FI was 71.9±7.3%. In 8 patients with the SVC syndrome, PTT was 8.9±2.6 sec., and in 5 patients who had the facial edema, FI was 53.6±11.4%. These findings indicate that the measurement of PTT and FI is useful in the clinical evaluation of the SVC syndrome.


Xe-133 single dose multi-step method ( SDMM ) has been developed and reported by us. Purpose of this study was the evaluation of MBF before and after surgical therapy ( Tx ) in patients with ischemic disease of the leg using SDMM. Bilateral adductor magnus muscle ( AMM ) and gastrocnemius muscle ( GCM ) in 26 patients ( pts ) ( 25 ASO and 1 TAO ) were evaluated. 14 pts were studied before and after Tx and 12 pts were studied only after Tx. In SDMM, after i.m. injection of 1 mCi of Xe-133 every 5 sec data were obtained for 2.5 min. immediately before and after 3 min. of mild stepping exercise ( Ex ). MBF during Ex became normal in 3 of 36 diseased ( D ) muscleafter Tx. MBF in D leg was significantly lower than normal ( mean MBF : 4.36±1.77 ( AMM ) and 8.43±7.83 ( GCM ) ml/min/100g ) before Tx, which did not show significant difference ( 12.38±8.47 ( AMM ) and 13.28±5.94 ( GCM ) ) after Tx. In conclusion, ( 1 ) MBF during Ex in D leg increased significantly after Tx, ( 2 ) MBF at rest increased only in D thigh after Tx, ( 3 ) miled Ex was suitable for the evaluation of the leg patients, and ( 4 ) SDMM was simple and useful method for the evaluation of MBF before and after Tx.