

The subjects are 33 hemiplegic patients from 58 to 75 years of age and 10 controls from 63 to 91 years of age.

(Method)

Using renogram apparatus (Shimazu) 0.2 ml (200 mCi) of ^{133}Xe -saline solution was injected in lateral brachioradialis muscles using gauge #26 needle, and ^{133}Xe -clearance curve was obtained during ischemic reactive hyperemia for 6 minutes.

As an index of the muscle blood flow maximal muscle blood flow was estimated from the clearance curve using Lassen's method after subtraction of the 2nd phase from the rapid 1st phase.

(Results and Conclusion)

1. Muscle blood flow of paretic arms was lower than that of non-paretic arms.
2. Peripheral muscle blood flow increased gradually during rehabilitation course in paretic arms, but in non-paretic arms it remained unchanged for long period.
3. When compared with Brunnstrom recovery stage, improved Brunnstrom stage usually accompany increased peripheral muscle blood flow.

Therefore, this study clearly showed that muscle blood flow in hemiplegic patients is altered by the APL activity of patients.

The Determination of Blood Flow in Advanced Breast Cancer using Xe-133

K. AKIYOSHI, K. HIROKI

Center for Adult Diseases, Osaka Japan

K. HIROKI

Dept. of Radiology, Dept. of Surgery

The purpose of this study is the determination of a therapeutic plan for advanced breast cancer using arterial route Xenon-133 clearance technique. The treatment is essentially palliative and surgery usually contraindicated in advanced breast cancer cases, from 3 to 4. If surgery is intended to be performed as a palliative treatment, the preoperative chemotherapy is useful to reduce the breast tumor and metastatic lymph nodes.

We have attempted to determine the blood flow throughout the chest wall around the advanced breast cancer. A total of 22 cases were made. Two polyethylene catheters were cannulated into the subclavian artery via the brachial artery, and into the internal thoracic artery via the superior epigastric artery respectively. The fine catheters were connected with a portable infusion apparatus.

After the injection of Xenon saline solution 1–2 mCi, the rapid sequential scintiphotograms were taken for 10 minutes and the regional blood flow was calculated using a Gamma camera (Toshiba).

The following results were obtained;

1. The Xenon perfusion area from the subclavian artery showed the anterior chest wall on the lateral side involving axillar lymph nodes, subclavian fossa and the tumor lesion.
2. The Xenon perfusion area from the internal thoracic artery showed the anterior chest wall on the median side involving parasternal lymph nodes and the tumor lesion.
3. Both perfusion areas overlapped in the nipple line somewhat laterally, and completely covered not only the tumor lesion but also the anterior chest wall and the related lymph nodes.

4. Lateral view of Xenon perfusion pattern showed the anterior chest wall involving the breast diffusely, but excluding the posterior chest wall.
5. After administration of the combined use of 5FU and MMC, the effects would be well correlated and clearly demonstrated with Xenon perfusion pattern.
6. Xenon rapid sequential scintiphotograms would

seem to be useful to determine whether the tip of the inserted catheter was in the right position or not, and also to determine the injection ratio of the anti-cancer drugs into the subclavian artery and internal thoracic artery.

In conclusion, the determination of blood flow using Xenon-133 perfusion pattern is a useful method in advanced breast cancer treatment.