lesion; 2 a definite hot or cold area but with poor anatomical and pathological details and 3 excellent anatomical and pathological informations.

RESULTS

It is clear that the relative diagnostic sensitivity of SPAS, SSS and PCS was 29/72, 51/72, and 62/72, respectively, with the mean scoring being 1.21 ± 0.75, 1.67 ± 0.55, and 2.78 ± 0.61, respectively. The difference between each display method was highly significant statistically, with an especially high significance for PCS.

Ten out of 72 cases of PCS had a score under 3 and 7 out of these low-score cases occurred in the imaging of claviculo-manubrial junction, 2 in the rib imaging and 1 in the mandible imaging. The relatively low scoring in these anatomical sites was considered to reflect geometrical loss of counting rates due to small anatomical volume.

SUMMARY AND CONCLUSIONS

Pinhole scintigraphy demonstrated excellent anatomico-spatial resolution and pathological informations of bone and joint diseases studied.

The positivity or relative sensitivity of pinhole scintigraphy has been amply verified by the present clinical observation. This technic is particularly useful in investigating large irregular and long tubular bones of the spine, pelvis and both extremities. On the other hand the sensitivity seemed rather low when small bones like the clavicle, rib and mandible were imaged and this was considered to be the reflection of geometrical loss of counting rates due to small volume. Some typical examples of various diseases will be presented to highlight our experiences.

《招待講演 IX》

Will Digital Intravenous Ventriculography Replace Radionuclide Angiography as the Preferred Method to Evaluate Global and Regional Cardiac Function?

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Most published reports describing digital subtraction angiography have dealt with its clinical application in studying the visceral, cranial and extracranial circulation, only briefly mentioning its potential as a method to evaluate ventricular function.

In the present study, single plane digital intravenous ventriculography was compared with conventional contrast left ventricular cineangiography in over 50 patients. For the intravenous method, up to 40 ml of Renografin-76 were injected into the superior vena cava at 20 ml per second. The entire first transit of the contrast material through the right heart, lungs, and left heart was recorded on low-noise video tape using fluoroscopic exposure factors (70 KVP, 6 MA). Selected cardiac cycles were digitized at 30 frames per second using an R-wave trigger. Agreement between the area-length determinations of left ventricular end-diastolic and end-systolic volumes by digital intravenous ventriculography and conventional contrast ventriculography was excellent (γ=0.87, 0.89 respectively).

Evaluation of regional wall motion was facilitated by special computer programs such as "mask mode", "time-interval-difference" and stroke volume imaging, phase and amplitude analysis and percent and rate of radial dimension shortening. Many of the computer methods used to assess regional function were adapted from programs originally developed for radionuclide ventriculography. Conversely, new computer programs developed for digital ventriculography are applicable to radionuclide angiography.

There are many similarities between digital intravenous ventriculography and first-pass and gated radionuclide ventriculography. These will be illustrated and compared. The question whether digital intravenous contrast ventriculography may someday replace radionuclide angiography as the preferred minimally invasive procedure to evaluate cardiac function will be addressed. There are several advantages of the digital fluroscopic approach including: (1) lower radiation exposure, (2) the potential for contamination from spilled radioactive material is avoided, and (3) cardiology personnel are generally more familiar with x-ray equipment than with nuclear imaging equipment. The implications of this new procedure to the specialty of Nuclear Medicine will be discussed.

《招待講演 X》

NMR Proton Imaging: A Status Report

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Nuclear magnetic resonance (NMR) imaging technology has now been advanced to a level where reasonably good anatomical images of the body can be obtained in scan times of the order of a few minutes. The method appears to hold great promise for medical diagnosis but clinical efficacy still has to be proved. A number of proton imaging machines are currently being used clinically throughout the world to collect the necessary data.

The University of Pennsylvania and the General Electric Company are collaborating on the evaluation of an experimental NMR proton imaging machine which is located in the Department of Radiology at the Hospital of the University of Pennsylvania. The imaging machine uses a resistive magnet operating at 0.12 Tesla which is equivalent to a proton resonant frequency of 5.1 MHz.