AN EXPERIENCE WITH NEWLY DEVICED PEDIATRIC ECT BED.

Adult instruments are usually used for pediatric experimentation. To obtain good results in infants and children, however, there are many drawbacks. In SPECT examination using rotation-type gamma camera, the size of normal bed is so wide for children. The efficiency is not satisfactory. We made an ECT bed which was 20 cm wide, and had 7 cm smaller radius than that of the normal bed, and was attached an instrument for fixing the children. Using this new SPECT bed, we could get better SPECT image and shorten the time of the examination.


For the purpose of applying a human gamma camera to small animals such as rats or mice, simple and easy improvements were brought on a pinhole collimator, for example a small pinhole lead block (the pinhole was 1.5 mm in diameter) was attached to the inside of a human pinhole collimator.

In basic experiments using 99mTc sodium pertechnetate, a small circle hot images of at least 1.0 mm in diameter could be shown clearly. And two slender tubes (outer diameter was about 0.9 mm), which were laid at intervals of 2.0 mm, could be distinguished.

Furthermore, bone scintigraphy, salivary gland scintigraphy and thyroid scintigraphy in rats and mice were attempted using this collimator improved. Clear images of all were obtained.

In addition, the experiments using the radionuclide emitted higher energy gamma rays were attempted.

Breathing Observation Monitor for Liver Scintigraph.
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Abdominal scintiscan has some problems due to the motion artifact induced by breath-natured shift of abdominal viscer. And the instrument also worked well by using it as a patient’s breathing observation monitor and we have got report what we studied through the experiment mentioned above. Patient’s abdomen have been monitored through air-bag detector and have been transduced to electric signal (out put max 1 V). Out put signal level were divided into 100 steps and it was planed to be able take the trigger as in Figure 1. In trigger level 150 mV, the liver shadow and the contour of the liver become more clearly. Furthermore the distribution of radio-active isotope in liver could be observed more clearly. We will discuss the usefulness of the breathing monitor of the liver scintigrams in this paper.

The 13C-breath test is useful for clinical diagnosis of detecting some malabsorption syndromes. In the condition of bacterial over growth, administrated glycine-1-13C-cholate are decoujugated 1-13C-Glucose in the intestine and it flow out to 13CO2Expired air after absorbed and metabolized. This time we bring this test to a 53 years old female patient who was diagnosed Progressive Systemic Sclerosis (P.S.S.) with SJögren’s syndrome, had chie complains of costipation and dysuria, manifested anemia, hypoalbuminemia and hypcholesterinemia. During fasting time, we measured the 13CO2 in expired air after administrated glycine-1-13C-cholate 310 mg at 30 min. interval. The 13CO2 expired curve after administrated of 13C-chompond demonstrated flat line. Clinical symptom and laboratory data of this patient was indicated bacterial over growth in alimentary truct. But we could not detect bacterial over growth in this case. This result may be due to the problem of expired air collection and the hypokinhesia of the alimentary truct in this patient.