

## The Diagnostic Apply of $^{203}\text{Hg}$ -Mercurochrom (Preliminary Report)

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It is the purpose of this study to know the difference in the normal, injured and inflamed tissues (especially mucous membrane) by employing  $^{203}\text{Hg}$ -mercurochrom. It was found that decreasing time-ratio of the employed isotope could be showed by exponential curve in pharynx mucous membranes. The effective

half-time was within 50 minutes and 60 minutes respectively in normal and inflamed cases, and more over time in irradiated cases.

As above mentioned the marked difference was found in the effective half-time between normal, inflamed and irradiated tissues.

### Cavity Scanning

#### — Clinical application of $^{113\text{m}}\text{In}$ -compound and its advantage —

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Cavity scanning makes it possible to delineate the size of some human cavity and relation of the surrounding organ and the cavity, as well as heart ventricle, arachnoid space or bronchial space. In the clinical application of the cavity scanning, there are three categories as follows.

- 1) Static cavity scanning:
  - Cerebral ventricle scanning
  - Pleural space scanning
  - Abdominal space scanning
- 2) Hemodynamic cavity scanning:
  - Heart blood pool scanning
  - Blood vessel scanning
- 3) Aerodynamic cavity scanning:
  - Tracheal space scanning
  - Bronchial space scanning

As the most convenient and no toxic radio-pharmaceutical agent for the cavity scanning in clinical use,  $^{113\text{m}}\text{In}$  Fe ascorbic acid is extremely useful because that  $^{113\text{m}}\text{In}$  is a short-

lived nuclide (1.7 hrs half-life) emitting 390 KeV monoenergetic gamma rays (no beta emission). The other agents used are  $^{198}\text{Au}$  colloid or  $^{131}\text{I}$ -HSA for detecting the size of the cavity in advance before the intracavitary irradiation therapy.

The static cavity scans were successfully obtained in the cases with hydrocephalus, pleural effusion with gastric carcinoma and 2 cases with subarachnoid compression of the spinal cord either by metastasis of the gastric carcinoma or reticulum cell sarcoma.

The results of the hemodynamic cavity scanings were satisfactory in cases with pericardial effusion due to pericarditis and buccal hemangioma.

In case with lung cysts causing chronic bronchitis, the aerodynamic cavity scanning was useful to demonstrate the functional RI pattern of bronchus and bronchiole.