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GA-67 SCAN: PRIMARY LUNG CANCER, MINUTE HEPATOMA AND ABSCESS. Y. Oshiumi. Dept. of Radiology Faculty of Medicine Kyushu University. Fukuoka.

Since the introduction of Ga-67 scan by Edwards and Hayes, it has been widely used for imaging of tumors and non-tumors, especially inflammations. This review will discuss the indication and limitation of Ga-67 scan on three kinds of diseases namely primary lung cancer, minute hepatoma and abscess.

Primary lung cancer: 85 cases with surgical resection are reviewed. There is no relationship between detectability of the lesions with Ga-67 scan and the histological types. However, the detectability is strongly affected by size of the lesion, namely positive rate 32% (11/34) in cases with pT1, 75% (33/44) in cases with pT2, and 71% (5/7) in cases with pT3. In detecting metastatic lesions of the hilum, the sensitivity and specificity are 54% and 78% respectively. In detecting metastatic lesions of the mediastinum, they are 32% and 89% respectively.

Minute hepatoma: According to our latest data (Y. Ayabe et al: JJNM 18 1981), the detectability of hepatoma was 92%. However, this reached to 100% with the combination of Tc-99m phytate scan and Ga-67 scan. In cases with minute hepatoma which have solitary lesion under 5 cm in diameter, the initially given tests which offered a clue to hepatoma are as follows: AFP 42% (11/26), RI 23% (6/26), Angio. 15% (4/26), US 8% (2/26), CT 2% (3/26). No one case had Ga-67 scan

at first. No cases with low AFP-level have lesions over 3 cm in diameter and there is no relationship between scintigraphic findings and size of the lesion. The positive rate of minute hepatoma with Ga-67 scan is 36%, though cases with Ga-67 scan are few.

Abscess: The sensitivity and specificity are 88% and 92% respectively. 21 of 23 cases with surgical treatment are positive in Ga-67 scan. About 50% of the cases with conservative treatment are positive. There are two types in abscess content, purulent type and serous type. 20 of 21 cases with purulent type are positive and 3 of 4 cases with serous type are positive.

Conclusion

Primary lung cancer: In general, the main lesion can be detected easily by other kinds of examinations such as a chest radiograph, without Ga-67 scan. It is difficult to detect metastatic lesion of the hilum and mediastinum, especially because Ga-67 accumulation of the sternum and thoracic spine overlap to that of metastatic lesions in the mediastinum. However, as Ga-67 scan has high specificity, it is useful to rule out such a lesion.

Minute hepatoma: It is well known that a combination of Tc-99m phytate scan and Ga-67 scan has high detectability to hepatoma. However, it depends firmly on size of the lesion. So it is difficult to detect minute hepatoma under 5 cm in diameter.

Abscess: Ga-67 scan has high sensitivity and specificity. So it is useful to locate the lesion from Ga-67 accumulation.

5-(2)

USER'S ASSESSMENT OF Ga-67 SCINTIGRAPHY. Y. Takagi and A. Kubo. Keio University School of Medicine. Tokyo.

In order to answer the question if Ga-67 scintigraphy has a practical utility, for the management of patients, we send out questionnaire to clinician indicating his assessment of Ga-67 scintigraphy.

Thirty five percent of 600 questionnaires were answered. The 11 per cent of radiologist criticized the overall usefulness of Ga-67 scintigraphy, however the majority of users (95%) assessed useful or very useful.

In spite of its lack of sensitivity, 56.9% of physician evaluated Ga-67 scintigraphy useful for investigation of anemia or weight loss and fever of unknown origin (85.6%). To evaluate the extent of the known cancer and detect the existence of metastases, all of the physician, 92% of surgeon and 93.3% of radiologist assessed Ga-67 scintigraphy useful.

The best three ranking of diseases in which Ga-67 scintigraphy assessed very useful were malignant lymphoma (71%), Mediastinal tumor (60%) and pulmonary tumor (58%).

6-(1)

BONE IMAGING. T. Nakajima. Saitama Cancer Center. Saitama.

Since the introduction of Tc-99m labeled phosphate compound in 1971, bone scan has prevailed rapidly and has been utilized frequently in routine clinical practice especially for the detection of bone metastasis in patients with malignant diseases. Until now we cannot find such a sensitive procedure as the bone scan to detect occult bone metastases. On the other hand as an abnormal deposit of radioactivity does not necessarily mean the presence of bone metastasis, the findings of the bone scan must be interpreted carefully. In this study a probability of presence of bone metastasis has been described in the report of bone scan with knowing the clinical history and data of the other examinations and the clinical efficacy of the bone scan was evaluated. Seven hundred and thirty one scans performed as screening or follow-up examinations of bone metastasis and the final diagnosis was made by the following entire clinical data. Setting the threshold of probability on 50%, the diagnostic efficacy was as follows; sensitivity of 97.9%, specificity of 93.9%, positive predictive value of 85.2%, negative predictive value of 99.2% and accuracy of 94.9%. The results indicate that the bone scan is fully efficacious in the diagnosis of bone metastasis and is important procedure in the evaluation of patients with malignant diseases.