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Additive Value of Pinhole Imaging in Well Differentiated Thyroid Cancer After Surgery

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Purpose: It is well known that the image by pinhole collimator (PH) has more good resolution than that by high resolusion parallel-hole collimator (HRPH). We performed this study to compare PH and HRPH for the detection of metastatic cervical lymphadenopathy (MCL) from remnant thyroid tissue (RT). Materials and **Methods:** One hundred forty three studies in 71 patients (M: F=12: 59, age 43.3±13.9 yrs) were included in our investigation. In 111 of 143 studies which were received 1110 MBq of I-131, HRPH and PH were performed 3 days after intake. PH were obtained with 6 mm aperture in size and for 10 minutes. Markers were placed to the submental and sternal notch region. We compared two image modality for the detection of MCL and RT in cervcal region. **Results:** All of the patients were revealed well differentiated thyroid cancer (papillary: follicular=68: 3). Sixty five of 111 studies (58.6%) showed concordant results and 46 of 111 (41.4%) showed discordant results. In the group of discordant result, PH study was more useful for the detection of lesions with RT and MCL 25/46 (54.3%) and 29/46 (63%), respectively. **Conclusion:** In well differentiated thyroid cancer after surgery, we conclude that PH has more useful value in monitering of therapeutic response in RT, and provides additive information for the necessity of high dose radioactive iodine therapy in patient with MCL.

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DELAYED HEPATOBILIARY IMAGING IN THE DIAGNOSIS OF HEPATOCELLULAR CARCINOMA

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Background: In recent years, the use of ultrasonography (US), X-CT and MRI has reduced the employment of isotopic explorations in the detection of hepatocellular carcinoma (HCC). But sometime the results of US, X-CT or MRI were different and diagnosis was very difficult. This present investigation was aimed to assess the usefulness of delayed hepatobiliary imaging in the diagnosis of HCC in these patients. **Methods:** Forty-eight patients consisting of 33 males and 15 females were entered into the research protocol. The mean age was 46 yr old (range 12-71 yr old). All of the patients were performed by surgery and verified histologically after nuclear examination. The subject was in a supine position under a gamma camera (Elscint, Apex Ap-6) and 555 MBq of Tc-99m-PMT were injected intravenously. The initial scinphotos obtained within 1 min after injection were used to image the blood pool phase. Subsequently, hepatic scans were obtained at 5 min, 1, 2, and 5 hr. Anterior, right lateral and posterior hepatic images were recorded. According to the radioactive uptake by the lesion in delayed phase, the negative (no or minor uptake), positive (equal or greater uptake) or very strong positive (almost equal to the activity of gallbladder) were judged. The positive were considered as diagnostic of HCC. And the very strong positive, were considered as diagnostic of benign hepatoma, such as adenoma or FNH. **Results:** Thirty-seven of the forty-eight patients were HCC based on histology. Delayed imaging revealed increased or equilibrated uptake of radioactivity by the tumors in 22 of 37 patients with hepatocellular carcinoma. The sensitivity was 59.5%. One patient final diagnosis based on histology was focal nodular regenerative hyperplasia, and only the diagnosis with delayed hepatobiliary imaging before surgery was correct. **Conclusions:** Compared with US, X-CT and MRI, delayed hepatobiliary imaging had the highest specificity for diagnosis of hepatocellular carcinoma. In recent group, the specificity of Tc-99m-PMT delayed imaging was 100%. Some HCC patients were misdiagnosed as liver cyst, hemangioma or other benign diseases by US, X-CT or MRI. So, these results show that Tc-99m-PMT delayed hepatobiliary imaging is very useful in the diagnosis of hepatocellular carcinoma.