

**Case Report**

# Liver metastasis seen in whole body I-131 Scintigraphy of post operated Patient with well differentiated papillary carcinoma

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**ABSTRACT**

Well differentiated papillary carcinoma of thyroid metastasizes to regional lymph nodes and the patients usually present with cervical or mediastinal lymphadenopathy. In this case report, we found a case of papillary thyroid carcinoma with hepatic metastasis and also presence of lymph nodal metastasis which is very rare.

**Keywords:** Hypervascular metastasis; liver metastasis; metastatic papillary carcinoma of thyroid.

**INTRODUCTION:**

Thyroid papillary carcinoma is the most common neoplasm of the thyroid gland and accounts for about 80% of all thyroid carcinomas.<sup>1</sup> Papillary carcinoma is generally well differentiated and has a propensity to invade lymphatics rather than blood vessels.<sup>2</sup> Typically, clinical presentation is with enlarged neck nodes and often the primary mass is detected only on imaging. Hematogenous dissemination is rare, though 10-15% patients can have metastasis to lungs and bones at the time of diagnosis.<sup>3</sup> Distant metastasis of papillary carcinoma to the liver is very rare with a reported frequency of only 0.5%. Only 10 cases of liver metastasis could be found on extensive literature search.<sup>4</sup>

**CASE REPORT**

We interacted with 40-year-old male patient who had a post total thyroidectomy + B/L SLND surgery with thyroid-stimulating hormone (THS) level of 48.47 mU/L and normal hepatic function tests including normal prothrombin time, partial thromboplastin time, serum albumin, total bilirubin aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase. Ultrasonography (USG) report of abdomen & pelvis was normal. At that time, Hepatobiliary report was normal. Thyroid stimulating hormone (TSH) was 0.05 mU/ml. Thereafter, he was given radioactive iodine-131 therapy (100 mCi) in India. Post therapy scan revealed increased uptake at right side of tracheal cartilage and at left side of thyroid cartilage. After this, Patient was advised to have

radiotherapy. Patient received curative radiotherapy 25# and additional 5# i.e. total 60Gy (30#).

After 3 years, patient came to hospital with a complain of abdomen pain. The general physical examination was unremarkable except for mild pallor. Ultrasonography of the abdomen revealed mild hepatomegaly with multiple focal lesion of variable size i.e. likely metastasis.

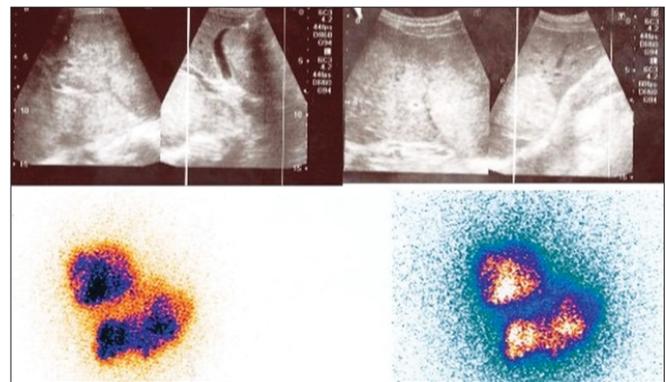


Figure 1. USG and I-131 image with presence of hepatic metastatic mass

Triple phase contrast-enhanced computed tomography (CT) of the abdomen done on a multi-slice CT scanner revealed liver enlarged by multiple heterogeneous lesions of varying sizes involving both lobes and caudate lobe. Largest mass in right side measures 10 x 9 cm. These liver lesions show strong peripheral contrast enhancement in arterial phase images with gradual washout in portal venous and equilibrium phase, centre of the lesions

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showing non-enhancing necrotic areas likely metastasis.

After then, Patient was advised to have I-131 thyroid scan and Whole Body Scan. I-131 Whole Body Scan revealed abnormal high uptake in liver consistent i.e. metastatic lesion of thyroid carcinoma. (Fig.1)

## DISCUSSION

Papillary carcinoma of thyroid is a relatively slow growing neoplasm and has a less severe clinical course, behaving unlike other thyroid cancers such as follicular and anaplastic carcinoma that are more aggressive and often metastasize or infiltrate locally.<sup>5-6</sup>

Papillary carcinoma readily metastasizes to locoregional lymph nodes. Several studies have indicated that cervical lymph node metastasis may be present at the time of initial diagnosis in approximately one third of patients with well-defined thyroid carcinoma and is more common in papillary than in follicular carcinoma.<sup>7</sup> Distant hematogenous dissemination is rare, though 10-15% patients can have metastasis to lungs and bones at the time of diagnosis.<sup>3</sup> Other rare sites of metastasis are liver and brain. Liver metastasis has been found in only 0.5% cases of well-differentiated papillary carcinoma with only 10 cases reported in the English literature.<sup>4</sup>

Hemangiomas are hyperdense on non contrast CT and show characteristic enhancement pattern. There is peripheral globular enhancement on contrast administration with gradual centripetal filling, and delayed preservation of contrast unlike metastasis which enhance diffusely in the arterial phase with washout in the equilibrium phase.

Our case is unique in that there is distant spread of thyroid papillary carcinoma resulting in hepatic metastasis. I-131 whole body scan can detect thyroid

cells located elsewhere in the body (distant metastasis). To the best of our knowledge this is the rarely reported case of papillary carcinoma of the thyroid presenting as a liver mass.

To conclude, I-131 whole body scan can confirmed distant metastasis located elsewhere in the body and rare metastases from well-differentiated papillary carcinoma, due to their extremely low incidence are usually not taken into account in routine clinical practice. However, recognizing the patterns of these rare metastases has a significant impact on clinical decision making and prognosis of the patients.

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