

¹⁸F-Fluorodeoxyglucose Positron-Emission Tomography/Computed Tomography Detected Inguinal Lymph Nodal Metastasis from Hepatocellular Carcinoma

Abstract

Hepatocellular carcinoma (HCC) usually metastasizes to the regional abdominal lymph node, lungs, and bones. Nonregional lymph node involvement by HCC in the absence of regional lymph nodes is rare. We describe the ¹⁸F-fluorodeoxyglucose positron-emission tomography-computed tomography findings of an HCC patient with histopathologically proven inguinal lymph nodal metastasis in the absence of regional lymph nodal metastases.

Keywords: ¹⁸F-fluorodeoxyglucose positron emission tomography-computed tomography, hepatocellular carcinoma, inguinal lymph node metastasis, sister Mary Joseph's nodule, umbilical nodule

Hepatocellular carcinoma (HCC) usually metastasizes to regional abdominal lymph nodes. Nonregional lymph node involvement by HCC has been described earlier in mediastinum, juxtaphrenic and internal mammary regions.^[1] Metastatic involvement of inguinal lymph node from HCC has not been documented in literature. We report a case of HCC with histopathologically proven metastasis in the inguinal lymph node.

A 61-years-old man with chronic liver disease and HCC, status post 3 sittings of TACE with favorable response, who was on lenvatinib underwent ¹⁸F-fluorodeoxyglucose (FDG) positron-emission tomography/computed tomography (PET/CT) for elevated AFP level. FDG PET/CT [Figure 1a] demonstrated cirrhotic liver with a metabolically inactive hypodense lesion in segments VIII/IVa of the liver showing post TACE changes [Figure 1b]. No significant enlarged lymph nodes were identified in the abdomen. PET/CT also showed few non-FDG-avid enhancing nodular soft-tissue lesions in peritoneum involving subphrenic/perihepatic location [Figure 1c], left iliac fossa [Figure 1d] and along pelvic peritoneum suggestive of metastases. In addition, mildly FDG avid enhancing

nodular soft-tissue lesion was seen at umbilicus [Figure 1e and f] along with mild FDG avid enlarged lymph node in the left inguinal region [Figure 1h and i], and suspicion of metastases was raised. Fine needle aspiration cytology from left iliac fossa deposit [Figure 1g] and tru-cut biopsy from left inguinal lymph node [Figure 1j] were done. Findings of histopathological examination in both samples were consistent with metastasis from HCC. HCC metastasizing to the inguinal lymph node is very rare. Review of the literature revealed no documentation of inguinal lymph node metastasis from HCC, including two large autopsy series published in populations with a high incidence of this tumor.^[2,3] The possible route of metastasis to inguinal lymph nodes in the absence of other regional nodal involvement could be through the spread of malignant cells to the umbilical region (through the portal venous system via a patent umbilical vein, or by direct spread from the anterior peritoneum), which could then drain through superficial lymphatic pathways along the inferior epigastric artery into inguinal lymph nodes.^[4] The finding of the umbilical nodule (Sister Mary Joseph's nodule) in a patient with HCC has been previously reported.^[5] The presence of peritoneal lesions and umbilical nodule

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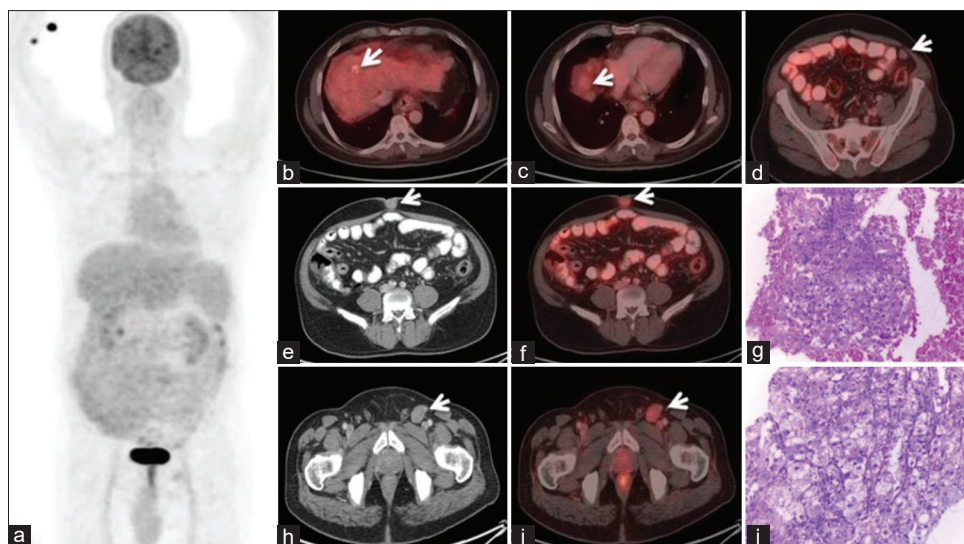


Figure 1: 18F-fluorodeoxyglucose (FDG) positron-emission tomography-computed tomography images [a; Maximum intensity projection image] showing non-FDG-avid lesion in segments VIII/IVA of the liver with post-TACE changes (b), soft-tissue peritoneal lesions in subphrenic/perihepatic location (c) and left iliac fossa (d). FDG-avid enhancing nodular soft tissue lesion in the umbilicus (e and f) and enlarged lymph node in the left inguinal region (h and i). Fine-needle aspiration cytology from left iliac fossa deposit showing neoplastic hepatocytes (g) and tru-cut biopsy from left inguinal lymph node showing neoplastic hepatocytes arranged in trabecular pattern with intervening prominent sinusoidal like spaces and focal areas showing cells with intracytoplasmic bile pigment (j), consistent with metastasis from hepatocellular carcinoma

in this patient makes this pathway more likely route of spread to the inguinal lymph node. Even though 18F-FDG PET/CT shows variable uptake in HCC depending on the degree of differentiation of primary tumor, it is very useful in the detection of extrahepatic (lymph nodal and distant) metastases even in clinically unsuspected sites. A systematic review and meta-analysis study demonstrated 18F-FDG PET/CT had a pooled sensitivity and specificity of 76.6% and 98.0%, respectively, for the detection of metastatic HCC.^[6]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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