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Intramuscular Metastasis of Gallbladder Carcinoma

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Abstract

Introduction: Gallbladder cancer is a highly fatal malignancy. Even though it is a rare malignancy, it is the most common biliary tract malignancy in USA. Majority of the patients are asymptomatic and among symptomatic patients, the most common complains include pain, anorexia, nausea or vomiting. Patients with GBC may also present with obstructive jaundice, either from direct invasion of the biliary tree or from metastatic liver diseases. Gall bladder carcinoma mainly metastasizes to liver, intra-abdominal LNs and biliary tract. Intramuscular and subcutaneous manifestations are very rare from gallbladder carcinoma. In this article we present a rare case of Intramuscular metastasis of gallbladder carcinoma in an African American lady with no other history of gallbladder disease.

Case narration: 55 year old African American lady with history of poly-substance abuse disorder presented to Boston Medical Centre with 2 months of progressive Right Upper Quadrant abdominal pain. She had CT scan showing 6.3 cm mass in gallbladder invading into the liver which on biopsy was consistent with adenocarcinoma of gallbladder. She presented again in the Emergency Department with a new 3 x 3 cm lump in her left arm and 5 x 5 cm lump in her left thigh. A CT Scan of the thigh mass showed an extensive lesion in her left thigh muscles again which on USG guided biopsy confirmed intramuscular metastasis with IHC positive for CK7, AE1:3 and CAM5.2 consistent with metastatic gallbladder adenocarcinoma.

Conclusion: Although rare, intramuscular lesions should raise suspicion of metastatic disease in the gall bladder carcinoma patients. In our case, patient reported two new rapidly growing lesions consistent with rapid progression of disease. Palliative radiation therapy should be considered in patients with severe pain associated with intramuscular metastasis. Intramuscular metastasis is usually associated with poorer prognosis.

Keywords: Gallbladder carcinoma; Intramuscular metastasis; Metastasis

Introduction

Gallbladder cancer is a highly fatal malignancy. The American Cancer Society estimates around 11980 new gall bladders and nearby large bile duct cases to be diagnosed in the USA in 2020. It also estimates around 4090 deaths due to these cancers in 2020 [1]. The presence of Gallstones is one of the most common risk factors associated with gall bladder cancer and is present in 70-90 percent of patients with GBC [2,3]. Some of the epidemiological studies show a correlation between substance abuse and incidence of gallbladder carcinoma [4]. Apart from gallstone and tobacco use there are many other modifiable risk factors like high BMI, female sex and multiparity [5]. Most of the time, gallbladder carcinoma is diagnosed as an incidental finding while doing abdominal procedures for other diseases or cholecystectomy for symptomatic gall bladder or bile duct disease. Majority of the patients are asymptomatic and among symptomatic patients, the most common complains include pain, anorexia, nausea or vomiting [6]. Patients with GBC may also present with obstructive jaundice, either from direct invasion of the biliary tree or from metastatic liver diseases. Gall bladder carcinoma mainly metastasizes to liver, intra-abdominal LNs and biliary tract and very rarely has extra-abdominal metastases like lung and pleura [7]. Intramuscular and subcutaneous manifestations are very rare from gallbladder carcinoma. Very few cases are reported with such cutaneous manifestations. In this article we present a rare case of Intramuscular metastasis of gallbladder carcinoma in an African American lady with no history of gallbladder disease.

Case Narration

55 years old African American lady with history of poly-substance abuse disorder (Ethanol, Cocaine) presented to Boston Medical Center Emergency Department with chief complaint of abdominal pain. The pain started suddenly when she was climbing the stairs after she ate, was initially 10/10 in intensity and it was a blunt throbbing non-radiating abdominal pain located in the Right Upper Quadrant (RUQ). She had CT abdomen/pelvis showing 6.3 mass in gallbladder invading into the liver with associated mass effect on the CBD (Common Bile Duct) and portal vein. There was distal CBD dilation and pancreatic duct dilation. Images show CT scan abdomen/pelvis with gallbladder mass (Figures 1 and 2). Her labs were remarkable for AST 67, ALT 71, AL 448, with normal Total bilirubin and lipase. On immune-histochemical analysis CA 19-9 was elevated to the level of 48 whereas CEA and AFP were within normal limits. She represented in the Emergency Department after a week with abdominal pain and nodules in the upper arm and groin. She reported a 43 Ibs weight loss over 6 months period. She underwent an ultrasound guided biopsy of the liver which revealed gallbladder adenocarcinoma which showed positive staining for cytokeratin 7, CDX2 (patchy) and CEA (focal) and negative staining for cytokeratin 20 consistent with primary gall bladder adenocarcinoma with liver parenchyma metastasis. She reported new left arm and thigh swelling with point tenderness which she first noted 10 days

prior to presentation. She had no other history of cutaneous disease or manifestations. She also reported difficulty ambulating because of left groin pain. She also mentioned chronic low back pain and urinary incontinence. She denied loss of sensation in her upper and lower extremities. She

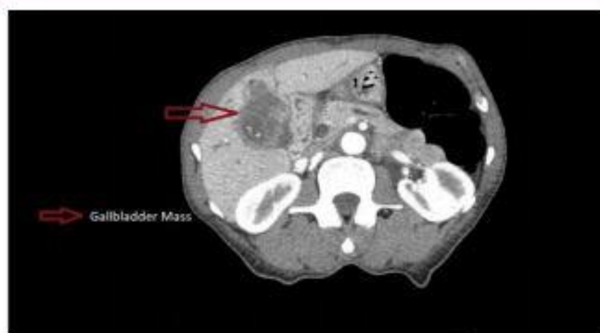

Figure 1 Contrast-enhanced CT of abdominal section showed a large occupying lesion in the gallbladder and a metastatic liver lesion.

Figure 2 Contrast enhanced CT of abdominal section showed a large occupying lesion in the gallbladder and a metastatic liver lesion.

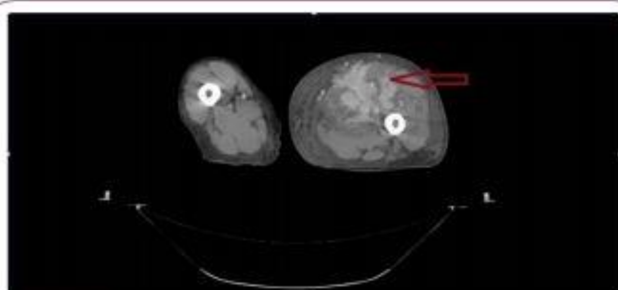

Figure 3 CT Scan of left thigh mass.

denied fever and chills. She denied any past history of gallbladder disease or any family history of cancer. On Physical examination her abdomen was non-distended and there was diffuse tenderness in the epigastric and RUQ of the abdomen associated with intentional guarding. On lymph node examination, she had a Pea sized mobile enlarged lymph node in Right axilla and thin, periumbilical lymph nodes. On examining her upper and lower extremities, she had a left thigh intramuscular mass and a 3 x 3 cm size nodule in the left Antecubital fossa which was tender, mobile, soft but with no other signs of infection or inflammation. The left thigh mass measured 5 x 5 cm mass and was very tender causing difficulty in ambulation. A CT Scan of the thigh mass showed an extensive lesion in her left thigh muscles as compared to the right one (Figure 3). USG guided biopsy of the upper arm and thigh lesions confirmed intramuscular metastasis with IHC positive for CK7, AE1:3 and CAM5.2 consistent with metastatic gallbladder adenocarcinoma. She received radiation therapy to the thigh lesion to palliate her severe left thigh pain. The plan was made to start systemic therapy with Gemcitabine 1000 mg/ m^2 and cisplatin 25 mg/m2 to treat stage IV gall-bladder cancer with intramuscular metastasis but patient had finally decided to not continue any treatment and was transferred to Hospice care.

Discussion

Intramuscular metastasis of gallbladder cancer is a very rare phenomenon and no other case with similar presentation has been reported till now. Most intramuscular metastasis originates from primary lung cancer, colon cancer and melanoma, mainly involving gluteals, psoas, erector spinae, rectus abdominis and latissimus dorsi [8,9]. We describe a rare presentation of intramuscular GBC metastasis which developed rapidly causing significant amount of pain requiring palliative radiation. We initially suspected an abscess in this lady with no past history of IVDA (Intra-venous Drug abuse). USG showed a solid mass and no findings consistent with an abscess which raised our suspicion for metastasis from her gallbladder cancer. Manafi et al. described a case of colon cancer metastasis to deltoid, external oblique abdominis, rectus abdominis, and quadriceps muscles as well as one of the extrinsic muscles of the tongue [10]. Furthermore, Fujimoto et al. reported oesophageal cancer intramuscular metastasis to forearm which was similar to our presentation although the primary site was different [11]. Mainly the metastasis occurs through lymphatic or hematogenous spread of primary cancers. There are reports of cutaneous gallbladder cancer metastasis involving thoracic, abdominal extremities, neck, head and scalps [7,12]. Primary treatment of localized gallbladder carcinoma is surgical resection with/without adjuvant therapy depending on extent of disease. Chemotherapy is the mainstay for stage IV/unresectable GBC. Patients with cutaneous metastasis have more advance disease at presentation and worse prognosis as compared to other patients [9,13]. Intramuscular metastasis in other non-gall bladder, primary cancers is associated with poor prognosis. Based on NCCN guidelines and diagnosis of stage IV cancer, plan has been made to start her on chemotherapy with cisplatin and gemcitabine which is currently the main stay

of the treatment. Next generation testing can be helpful in such patients with aggressive disease and unusual presentation.

Conclusion

Although rare, intramuscular lesions should raise suspicion of metastatic disease in the gall bladder carcinoma patients. In our case, patient reported two new rapidly growing lesions consistent with rapid progression of disease. Palliative radiation therapy should be considered in patients with severe pain associated with intramuscular metastasis. Intramuscular metastasis is usually associated with poorer prognosis.

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