

Watch Out for the Unexpected: Sole Gallbladder Metastasis in a Patient with Malignant Melanoma Striked by FDG-PET

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Abstract

Metastatic gallbladder disease is a rare pathology. Gallbladder metastasis of malignant melanoma is especially rarer. Herein we present the solitary metastasis of a malignant melanoma to the gallbladder.

47-year old male having an ulcerated skin lesion at right toe was diagnosed as malignant melanoma with excisional biopsy. Thereon the patient without locoregional disease was treated with large surgical resection. A metastatic inguinal lymph node was excised 4 months later and interferon-alpha treatment was begun. FDG-PET imaging was requested to evaluate the extent of disease after 15 days and any metastatic focus was not detected.

A control FDG-PET was performed for the evaluation of therapy 8 months later. There was only an unexpected, markedly increased focal FDG uptake arousing doubt in the gallbladder fossa on the whole-body images. This accumulation was proven histopathologically as malignant melanoma metastasis after exploratory cholecystectomy and the patient was treated by dacarbazine+cisplatin.

Physicians interpreting FDG-PET scans of patients with malignant melanoma must be cautious about the significance of prominent unusual uptakes at unexpected localizations. It is mandatory to establish a certain histopathologic diagnosis if possible.

Keywords: Gallbladder metastasis; Malignant melanoma; 18 fluoro deoxy-glucose positron emission tomography (FDG-PET)

Introduction

Malignant melanomas have the potential of metastasizing to any organ in the body. The most frequent distant metastatic localizations are lung, liver, skin and gastrointestinal tract [1]. In gastrointestinal tract, the most common metastatic site is small intestine [2]. Gallbladder metastasis of malignant melanoma is rare, isolated solitary one is even extremely rarer. Gallbladder lesions often occur accompanying widespread disease and generally stems from skin melanoma [3]. But interestingly malignant melanoma is the leader of all metastatic gallbladder tumours accounting for 50-60% of all cases [4].

It is being widely benefited from FDG-PET for malignant melanoma patients in the primary staging, evaluating treatment response and restaging [5]. In routine patient management, localized disease (without locoregional and distant metastasis) is treated surgically and then followed by FDG-PET. If there is metastasis on control FDG-PET, appropriate systemic therapy algorithm is applied [6].

Patient Findings

47-year old male having an ulcerated skin lesion at right toe was diagnosed as malignant melanoma with excisional biopsy (Breslow: 1.5 mm, Clark level IV). Thereon the patient without locoregional disease (sentinel lymph node negative, stage II) was treated with large surgical resection. 4 months later a metastatic inguinal lymph node seen on computed tomography (CT) was excised and interferon-alpha treatment was begun. FDG-PET imaging was requested to evaluate the extent of disease after 15 days and any metastatic focus was not found.

A control FDG-PET was performed for the evaluation of interferon-alpha therapy 8 months later. Although any certain pathologic accumulation consistent with locoregional or distant metastasis was not detected on whole-body screening, there was an unexpected, markedly increased focal FDG uptake in the gallbladder fossa (Figure 1).

This activity was corresponding to the area of gallbladder wall thickening and nodularity extending into the lumen on CT with oral and IV contrast (Figure 2A). The patient subsequently underwent abdominal ultrasonography (USG) and a soft tissue mass of 30x23 mm was identified in the gallbladder (Figure 2B).

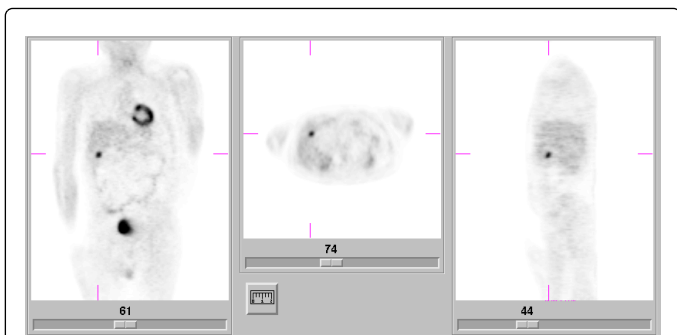


Figure 1: Coronal (A), transaxial (B) and sagittal (C) FDG PET slices showed marked focal increased FDG uptake in the gallbladder corresponding to the mass seen on CT and US.

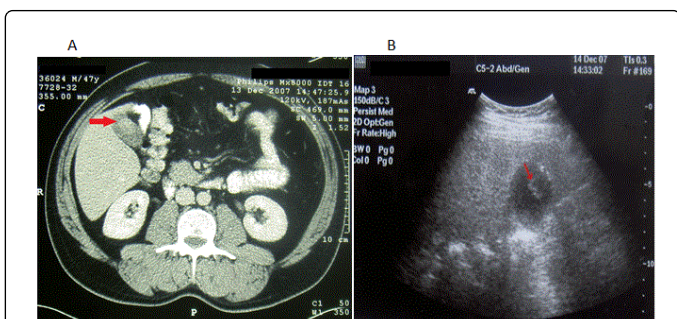


Figure 2: A soft tissue mass in the gallbladder (arrow), 30x23 mm in size, was detected on abdominal CT (A) corresponding to the mass (arrow) seen on US (B).

A benign gallbladder pathology was thought according to the clinical and conventional radiological findings at first sight. As exploratory laparotomy/ cholecystectomy was performed for confirmation of the lesion, histopathological examination revealed a malignant melanoma metastasis and 9 metastatic lymph nodes. Whereupon dacarbazine+cisplatin combination was added to the therapy regimen.

Discussion

Sudden emerging of an atypical FDG accumulation in the follow-up of cancer patients creates a challenge that must be illuminated for the clinician. Isolated solitary gallbladder metastasis can be confused with primary gallbladder pathologies (gallbladder cancer, acute cholecystitis), especially if the patient is in disease-free interval for a long time. This case demonstrates a striking example about the importance of any incidental focal FDG uptake which might represent

an unexpected finding such as a malignant melanoma metastasis. FDG-PET imaging has excellent sensitivity for metastatic melanoma tending to be a high-grade, aggressive tumour characterized by its high metabolic activity resulting in prominent FDG avidity [7]. Thanks to this peculiarity, FDG-PET can easily detect unexpected metastasis at unusual places hardly evaluated by conventional imaging methods (US,CT,MRI). So it is a useful technique in correct staging and management of patients with melanoma. CT and US just give confined anatomical information not detailing the disease activity [8]. FDG-PET is more sensitive than CT and US for detection of malignant melanoma metastasis and increases the accuracy of staging. It also changes therapy protocol when locoregional and/or distant metastasis are detected. This condition necessitates implementation of new chemotherapeutic agents. If there is only gallbladder uptake strongly implying metastasis in malignant melanoma, a simple cholecystectomy plus chemotherapy is enough in favour of the patient as is in our case.

Conclusion

Physicians interpreting FDG-PET scans of patients with malignant melanoma must be cautious about the significance of prominent unusual uptakes at unexpected localizations and correlate them with conventional radiological images and clinical findings. Any markedly increased focal FDG accumulation arousing doubt should be followed up meticulously. If and whenever possible, it is mandatory to establish a certain histopathologic diagnosis.

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