

## Case Report

# Calcified peritoneal metastasis due to advanced ovarian cancer: Incidental finding in bone scan and single-photon emission computed tomography-computed tomography

## ABSTRACT

We present the case of a 51-year-old female complaining of persistent abdominal pain that started 5 months ago with recent bone pain. Abdomen-pelvic computed tomography (CT) showed a large pelvic mass raising the possibility of a malignant neoplasm. Bone scan was done to rule out bone metastases and showed extraskeletal abdominal tracer uptake with the single-photon emission CT/CT imaging showing the uptake to correspond to multiple calcified peritoneal deposits.

**Keywords:** Bone scan, calcified peritoneal metastases, single-photon emission computed tomography/computed tomography

## INTRODUCTION

Peritoneal metastases are a common finding with intra-abdominal primary neoplasms, such as carcinoma of the ovary, stomach, colon, and pancreas.<sup>[1]</sup> The detection of peritoneal metastases has many consequences as it affects the staging of the tumor, the feasibility of its resection, monitoring therapy response, and identifying recurrence.<sup>[2]</sup>

Peritoneal calcifications are a rare finding, and can result from either benign or malignant conditions. Benign conditions that lead to peritoneal calcification include sclerosing peritonitis due to peritoneal dialysis, peritoneal tuberculosis, prior meconium peritonitis, hyperparathyroidism, Pneumocystis carinii infection, and postsurgical heterotopic ossification.<sup>[3]</sup> However, peritoneal calcification can be associated with primary or secondary peritoneal malignancies such as peritoneal serous cystadenocarcinoma and ovary cancer, respectively.<sup>[4,5]</sup>

## CASE REPORT

A 51-year-old female was referred to the gynecological department with an abdominopelvic mass suspected to be ovarian cancer. The patient complained of nonspecific abdominal pain which started 5 months ago together with recent bone pain. Morphological blood tests were performed showing:

(WBC: 6 k/ $\mu$ l. Hb: 10 g/dl. RBCs: 3.5 M/ $\mu$ l. Platelets: 190 k/ $\mu$ l). Her liver and kidney function tests were normal. Abdomen-pelvis computed tomography (CT) was done and showed a huge calcified pelvic mass with anterior abdominal wall invasion

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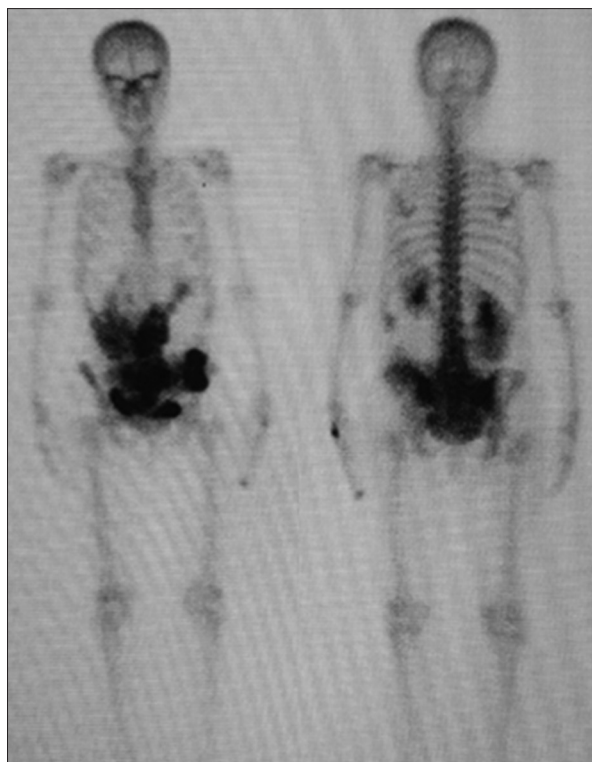
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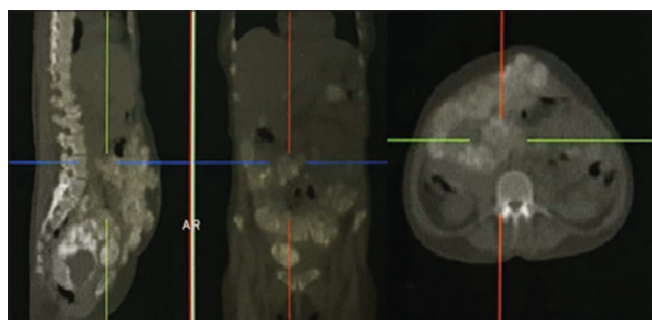
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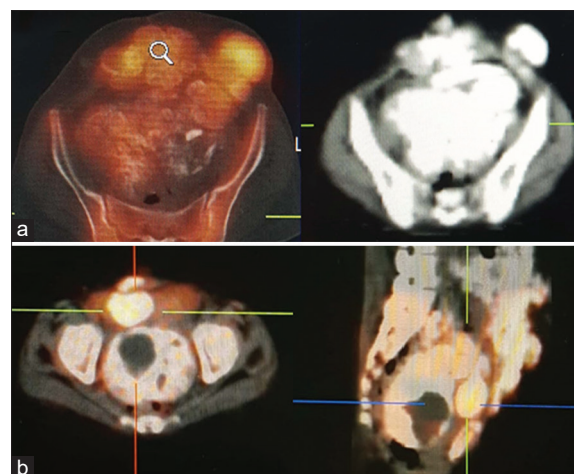
**Figure 1:** Technetium-99m methylene diphosphonate whole body scans showing intense tracer uptake projecting over lower part of abdomen and whole pelvic region more evident anteriorly with no evidence of skeletal metastases



**Figure 3:** Computed tomography bone window images in sagittal, coronal and transverse planes showing abdominopelvic calcifications

raising the possibility of being malignant neoplasm. CA125 was 150 U/ml.

A bone scan was performed to rule out bone metastases. 20 mCi of Tc 99m methylene diphosphonate (MDP) was injected IV, and after 3 h, whole-body images were acquired in anterior and posterior projections on a dual head gamma camera. Her whole-body bone scan revealed significantly increased diffuse MDP uptake in part of the abdomen and whole of the pelvic region (more evident in the anterior projection image than on the posterior view), but the scan was negative for skeletal metastasis [Figure 1]. These findings were suggestive of severe visceral calcification. Correlative single-photon emission CT/CT scan images of abdomen and pelvis showed



**Figure 2:** (a and b) Single-photon emission tomography/computed tomography showing tracer accumulation associated with peritoneal and abdominal wall calcified masses

tracer accumulation over the calcified peritoneal implants [Figures 2 and 3].

The patient underwent exploratory laparotomy that revealed a huge pelvic mass inseparable from urinary bladder and intestine. Biopsy from the unresectable uterine mass revealed metastatic adenocarcinoma likely of ovarian origin. The patient was advised a true-cut biopsy, which was declined by the treating gynecologist because of the risk of spread of disease.

## DISCUSSION

Bone scanning is a sensitive modality used for the detection of bone metastases. It is more sensitive than other conventional imaging modalities and can pick up even microcalcification. Calcium deposits in the wall of the peritoneal cavity and the abdominal wall are one of the complications that results from some intra-abdominal malignancies especially papillary serous cystadenocarcinoma of ovary and is quite common in the advanced stage of the disease.<sup>[6]</sup>

Previously, few case reports showed extensive calcified peritoneal metastases from ovarian carcinoma origin and discussed their appearance on CT. However, in this study, we present a case of ovarian cancer with massive build-up of calcium in the peritoneum from the nuclear medicine point of view and how bone scintigraphy illustrates these calcified peritoneal metastatic deposits.

## 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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Nil.

#### Conflicts of interest

There are no conflicts of interest.

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