Unexpected finding

Natalia G Vallianou [1], Nikolina Stavrinou,[2] Fotis Panagopoulos,[1] Eleni Geladari,[1] Alexandros G Sykaras,[2] Christine Vourlakou[2]

[1]Department of Internal Medicine, Evangelismos General Hospital, Athens, Greece
[2]Department of Pathology, Evangelismos General Hospital, Athens, Greece

Correspondence to
Dr Natalia G Vallianou, Evangelismos General Hospital, Athens, Greece; natalia.vallianou@hotmail.com

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CLINICAL QUESTION

Herein, we describe an 81-year-old female patient, who presented with pancytopenia and bacteraemia due to *Escherichia coli* infection. Her pancytopenia continued despite complete response of the bacteraemia. The patient underwent a bone marrow biopsy as well as agastroscopy that revealed an ulcer. Biopsies were obtained and the findings are depicted in figure 1.

WHICH OF THE FOLLOWING ANSWER IS CORRECT?

A. Gastric adenocarcinoma poorly cohesive or signet-ring cell subtype.
B. Lobular breast carcinoma.
C. Melanoma.
D. Urothelial carcinoma with plasmacytoid differentiation.
E. Multiple myeloma.

DISCUSSION

An 81-year-old female patient presented to the hospital due to fever of 40°C and vomiting for the last 48 hours. Bacteraemia due to *E. coli* was documented and the blood tests revealed pancytopenia. In spite of her complete recovery, the patient's pancytopenia continued; thus, a bone marrow biopsy was performed, which revealed the infiltration of bone marrow by adenocarcinoma cells, probably of breast origin or of gastric origin. The patient underwent a gastroscopy, which documented the presence of an ulcer from which biopsies were obtained. Histology showed infiltration of gastric mucosa from a high-grade poorly cohesive tumour composed of medium-large sized, pleomorphic neoplastic cells arranged in diffuse sheets (figure 1). This pattern is suggestive of primary gastric poorly differentiated carcinoma or metastatic carcinomas that consist of discohesive and diffusely arranged cells, such as lobular breast adenocarcinoma and urothelial carcinoma with plasmacytoid differentiation. Based on the clinical findings (pancytopenia and high fever), we included in the differential diagnosis multiple myeloma despite the fact that the morphology of the neoplasm was not strongly suggestive of this. Finally, we could not exclude the possibility of metastatic melanoma—a tumour with variable morphological characteristics that can mimic other neoplasms.

Immunohistochemistry showed that the neoplastic cells were GATA-3 positive, oestrogen receptor positive and cytokeratin 8/18 positive whereas they were CDX2 and PDX1 negative.

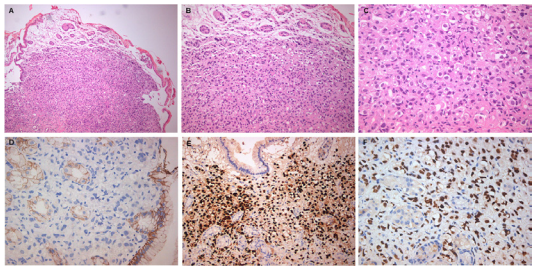

Figure 1 (A–C): Diffuse neoplastic infiltration of the gastric mucosa of antrum and body, from a high-grade poorly differentiated neoplasm with marked cytological and nuclear atypia ((A) H&E staining ×100, (B) H&E staining ×200, (C) H&E staining ×400). (D) Neoplastic cells were E-cadherin negative (×400 magnification). (E) Tumour cells showed strong oestrogen receptor positivity (×200 magnification). (F) GATA3 expression in tumour cells (×400 magnification).

Additionally, E-Cadherin expression was abolished in tumour cells. The combination of morphological and immunohistochemical findings led to the final diagnosis of metastatic breast adenocarcinoma lobular type, invasive breast carcinoma/invasive lobular carcinoma, none otherwise specified (NOS) International Classification of Diseases-0 code 8520/3 according to WHO classification of tumours of the breast 2020. It is noteworthy, that a positron emission tomography/CT scan had not revealed any breast nodule either.

Occult breast carcinoma (OBC) is defined as the existence of confirmed metastatic breast cancer, without a palpable breast mass nor a positive mammography or breast ultrasound for breast cancer.[1] Breast cancer may rarely metastasise to the gastrointestinal system, particularly the stomach. The estimated rate of breast to stomach metastasis varies from 0.3% in retrospective series to 8%–18% in autopsy series.[2]

Take home messages

- Occult breast carcinoma (OBC) refers to the presence of confirmed metastatic breast cancer, without a palpable breast mass nor a positive mammography or breast ultrasound for breast cancer.
- OBC should be suspected in female patients, especially with a history of breast cancer.
- OBC must be suspected in female patients with pancytopenia.

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OBC should not be overlooked, especially among female patients with a medical history of breast cancer, even up to 20 years ago.

CORRECT ANSWER

B. Lobular breast carcinoma.

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ORCID iD

Natalia G Vallianou http://orcid.org/0000-0003-3874-5393

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