Axillary lymphadenopathy: An unusual presentation of metastatic colorectal carcinoma
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Section: Breast imaging
Area of Interest: Breast
Procedure: Imaging sequences
Procedure: Staging
Imaging Technique: Ultrasound
Imaging Technique: Mammography
Imaging Technique: CT
Special Focus: Metastases Case Type: Clinical Cases
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Patient: 79 years, female

Clinical History:
A 79-year-old woman was referred to the breast clinic with non-specific breast pain. Her clinical breast examination was normal. She was referred to our department for mammography, which showed incidental unilateral axillary lymphadenopathy which had developed since the previous study four years earlier.

Imaging Findings:
Mammography did not show any abnormality within the breasts but at least two rounded, enlarged axillary lymph nodes were noted (Fig. 1). A subsequent ultrasound of the axilla revealed enlarged, heterogeneous lymph nodes with abnormal morphologic features measuring up to 25 mm (Fig. 2). Ultrasound-guided core biopsy obtained from the largest axillary node showed the node was largely replaced by metastatic mucinous adenocarcinoma. The sample strongly expressed CK20, was focally positive for CK7 and negative for both oestrogen and CA125. Overall, the appearances were consistent with nodal metastasis from a bowel primary. A subsequent staging CT scan again demonstrated the left axillary lymphadenopathy (Fig. 3). No obvious mucosal lesion was identified within the colon on CT, however, stranding and thickening of the omentum and peritoneal soft tissue nodules were shown in keeping with peritoneal carcinomatosis (Fig. 4). The patient was started on palliative chemotherapy and died several months later.

Discussion:
Axillary lymphadenopathy has a wide differential diagnosis and can develop in a range of both benign and malignant aetiologies. Benign reactive hyperplasia is the most common cause of axillary lymphadenopathy [1] secondary to locoregional infection and inflammation within the ipsilateral breast, thoracic wall and arm. Less commonly, autoimmune diseases such as rheumatoid arthritis, Sjögren’s syndrome and systemic lupus erythematosus and systemic causes such as sarcoidosis and HIV can also manifest as axillary lymph node enlargement [1-3]. Other
miscellaneous causes of axillary lymphadenopathy include silicone implants and tattooing [3].

Approximately one in three patients with unilateral axillary lymph node enlargement will, however, have an underlying malignancy [4], with breast carcinoma being the most common association representing 97% of patients [5]. The majority of those patients with a breast carcinoma will have an identifiable primary tumour, either clinically or radiologically. Mammographically occult breast cancer presenting with axillary adenopathy is rare, accounting for less than 1% of cases [6]. This can present a diagnostic challenge as there are other metastatic causes of axillary adenopathy, with lymphoma being the most prevalent [3] and other distant primary tumour sites including malignant melanoma, thyroid, lung, gastrointestinal/genitourinary tract and ovarian carcinomas [3, 6]. Colorectal metastases to non-regional lymph nodes, such as the axilla as in our presented case, is extremely rare and may be via either a haematogenous or lymphovascular route. The most common sites of colorectal carcinoma metastases are to the liver (35-50%), locoregional lymph nodes (50-70%) and lung (21%), with other conventional sites including the peritoneum and ovary [5].

Although neither mammography nor ultrasound can definitively differentiate between benign or malignant lymphadenopathy, an enlarged dense, rounded node on mammography [4] with focal or diffuse cortical thickening or obliteration of the fatty hilum on ultrasound is morphologically suspicious for underlying malignancy [3, 4]. Ultimately, however, tissue sampling by either fine needle aspiration (FNA) or core biopsy of the node will be required for diagnosis. Due to the significantly increased sensitivity when compared with FNA, core biopsy has been advocated as the sampling method of choice, particularly in a patient with newly diagnosed breast cancer [7, 8].

In conclusion, unilateral axillary lymphadenopathy has a broad differential diagnosis and includes both benign and malignant disease. Of the malignant cases, underlying breast carcinoma will be by far the most common cause and will frequently be identifiable on breast imaging. In those patients where there is no clear breast primary either clinically or radiologically, other distant sites of primary disease should be considered.

Differential Diagnosis List: Axillary lymph node metastases secondary to colorectal carcinoma, Breast carcinoma, Locoregional infection, Lymphoma

Final Diagnosis: Axillary lymph node metastases secondary to colorectal carcinoma

References:

60 (PMID: 23771915)
Description: Left mediolateral oblique mammogram demonstrating dense, rounded axillary lymph nodes. No discrete lesion or concerning feature identified within the breast tissue. Origin: Razzaq F, Department of Radiology, Warrington Hospital, Warrington, UK.
**Figure 2**

**Description:** Transverse ultrasound image showing an enlarged 25 mm hypoechoic axillary lymph node with abnormal morphologic features, including a rounded shape and absence of hilar fat. **Origin:** Razzaq F, Department of Radiology, Warrington Hospital, Warrington, UK.
Description: Axial CT image demonstrating the left axillary lymphadenopathy. The patient underwent a staging CT following the results of the axillary nodal biopsy to attempt to identify the site of primary disease and any further metastases. Origin: Razzaq F, Department of Radiology, Warrington Hospital, Warrington, UK.
Description: Axial CT image of the abdomen showing thickening and stranding of the omental fat with peritoneal soft tissue nodularity consistent with peritoneal carcinomatosis. No primary site of disease was identified within the unprepared colon. Origin: Razzaq F, Department of Radiology, Warrington Hospital, Warrington, UK