



# Non primary breast malignancies; a single institution's experience of a diagnostic challenge

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**OBJECTIVES:** Metastases to the breast of extramammary malignancies are very rare. It is of clinical importance to distinguish metastases from primary breast carcinoma, because treatment and prognosis are different. The aim of this study is to report the incidence of lymphomas and metastases to the breast of extramammary malignancies in our 29-year archive.

**METHODS:** The pathology database of a single institute was reviewed for all breast neoplasms which were coded in our system as a *metastasis* in the period 1985 - 2013. Patients with metastatic tumors from primary breast carcinoma were excluded. Additional data were obtained retrospectively from the hospital electronic record system.

**RESULTS:** Patient and tumor characteristics are presented in Table 1 and 2, respectively. In 4 patients with melanoma, no primary site was found, most probably due to complete regression of a skin melanoma. All 18 mammary lymphomas were B-cell type lymphomas (10 primary, 8 secondary). In approximately a quarter of the patients the metastasis was the first sign of systemic metastatic disease. In 2 patients, the diagnosis of metastatic disease was adjusted postoperatively. Five patients underwent surgery despite the correct diagnosis. In fact, seven patients therefore underwent (unnecessary) surgery (modified radical mastectomy).

**Table 1: Patient characteristics**

Age	Years
Mean	64
Range	32-87
Sex	Number of patients (%)
Men	7 (16)
Women	37 (84)
Time interval diagnosis: primary neoplasm - metastasis	Months
Mean	30
Range	0-273
Known metastatic disease	Number of patients (%)
No history of metastases	12 (27)
History of metastases	32 (77)

**Table 2: Primary histology of breast metastases**

Histology	Number of patients (%)	Interval: primary - secondary (months)
<b>Lymphoma</b>	18 (41%)	
Primary	10	
Secondary	8	18
<b>Melanoma</b>	11 (25%)	
No primary site	4	
Primary side detected	7	39
<b>Ovarian carcinoma</b>	6 (14%)	
No history of ovarian carcinoma	1	
History of ovarian carcinoma	5	15
<b>Adenocarcinoma of the colon</b>	3 (7%)	
No history of colon carcinoma	0	
History of colon carcinoma	3	0
<b>Lung carcinoma</b>	3 (7%)	
No history of lung carcinoma	0	
History of lung carcinoma	3	12
<b>Renal cell carcinoma</b>	1 (2%)	
No history of renal cell carcinoma	0	
History of renal cell carcinoma	1	0
<b>Adenocarcinoma of the stomach</b>	1 (2%)	
No history of stomach carcinoma	1	
History of stomach carcinoma	0	
<b>Choriocarcinoma</b>	1 (2%)	
No history of choriocarcinoma	0	
History of choriocarcinoma	1	0
<b>Total</b>	<b>44 (100%)</b>	

## CONCLUSIONS:

- Although lymphomas or metastases to the breast of extramammary malignancies are rare, they are in >25% the first presentation of malignant disease.
- It is important to distinguish them from common primary breast carcinoma for proper treatment and prognosis.
- Therefore, we emphasize the need for a histological diagnosis by core biopsy before any treatment is commenced.
- The pathologist plays a key role in considering the diagnosis of metastasis if the histological features are unusual for a primary breast carcinoma and should therefore be properly informed on the patient's clinical history.