# HER-2+, ER/PR- Metastatic Occult Primary Breast Cancer in a Male Patient

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Figure 2: cutaneous progression on left shoulder

Figure 1: erythematous plaques with purpura on left shoulder

## Case Presentation

This is a 69-year-old male patient with metastatic cancer of unknown primary, presumably from the left breast. Presenting first with mild swelling in the left arm/hand as well as mediastinal and axillary lymphadenopathy. In addition, multiple PET avid foci in the bones. Diagnostic mammogram and ultrasound showed mild left retro-areolar gynecomastia. No mass or nodule. CT-guided core biopsy of left axillary lymph node showed metastatic carcinoma with apocrine differentiation. Tumor cells stained positive for CAM5.2, CK5, GATA-3, GCDFP-15, HER-2/NEU (3+). Negative for ER, PR, naspin, TTF-1, S-100, HMB45, p40, and E-cadherin. His treatment began with TCHP for 6 cycles then continued HP for 5 months until cutaneous progression of the left shoulder. CT TAP showed enlarging left temporal nodule and diffuse enlargement of the left parotid gland with diffuse heterogenous hyperenhancement which may represent parotiditis. Patient participated in clinical trial MCC 20089 Pembrolizumab and Trastuzumab Deruxtecan, but discontinued due to progression of skin lesions. Started Xeloda, Herceptin, and Zometa. Restaging scans showed stability of left temporal nodule which is likely metastatic and an increase in size of presumably nodal mass in anterior mediastinum. Biopsy of deep left parotid lesion showed Apocrine-type adenocarcinoma involving dermal lymphatics, consistent with metastatic mammary carcinoma. Tucatinib was added to the current treatment plan.

## Discussion

The diagnosis and treatment of occult primary breast cancer requires a comprehensive approach with clinical examination, appropriate imaging, biopsy and immunohistochemistry staining. Staining allows us to identify if tumor cells are likely from a breast cancer origin. Tumor cells which stain positive for ER, PR, mammaglobin, and GATA3 favor an origin of breast malignancy. A few markers that are particularly emphasized in diagnosing OBC are CK7, CK20, and GCDFP-15. Typically, CK7 is positive and CK20 is negative. If CK20 is positive the differential diagnosis leans more towards gastrointestinal tumors. GCDFP-15 has a 90% positive predictive value and specificity for breast cancer. In this patient's case, he was positive for CK7, GATA-3, and GCDFP-15. CK20 was not performed.
This patient's case was rare, and the enlarging parotid mass added to the ambiguity. However, immunohistochemistry remained the same after the parotid mass FNA. OBC is considered stage III according to the 8th edition of AJCC. Therefore, the treatment per NCCN guidelines is mastectomy with ALND plus or minus post-mastectomy RT. However, in our patient's case it was stage IV disease at presentation. Therefore, the standard of care treatment for metastatic breast cancer, regardless of an identified primary site, is systemic treatment.

## Conclusion

This case serves as an educational example for clinicians on the rare presentation of occult primary breast cancer as well as the diagnostic and treatment options with disease progression. Despite many recent medical advances in breast oncology, the prognosis for OBC still remains poor. Therefore, prompt diagnosis and treatment initiation are important. MRI imaging is more sensitive and useful when diagnosing OBC, as it may not show up on mammography and ultrasound imaging. It is also imperative to have detailed breast pathology performed. Identifying more cases such as this one helps providers understand breast cancer better and improves the management of it in the future.

## Resources

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