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Regression of giant renal angiomyolipoma in a patient under aromatase inhibitor therapy for breast cancer: a case report

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Objective: Angiomyolipoma (AML) is the most common benign renal stromal tumor; it is usually asymptomatic and diagnosed incidentally on imaging exams. Although considered a non-hormone-dependent lesion, recent studies have demonstrated the expression of hormone receptors and aromatase in AML, suggesting a possible estrogenic influence on its growth. **Methods:** This case report describes a 66-year-old female patient, diagnosed with invasive ductal carcinoma of the breast and renal AML, who underwent therapy with letrozole—a nonsteroidal aromatase inhibitor—and afterwards, showed a significant reduction in the size of the kidney tumor. **Results:** During diagnosis, breast ultrasound and magnetic resonance imaging identified a lesion classified as BI-RADS 5 in the right breast. Initial staging was T1N0M0, and physical examination revealed a one-centimeter nodule in the upper quadrant of the right breast, with no palpable lymph nodes. The patient underwent biopsy, concluding the diagnosis of grade 2 invasive ductal carcinoma, with expression of estrogen receptors, progesterone receptors, human epidermal growth factor receptor-type 2-negative (HER2-), and Ki67 in 5% of the tumor cells. During the general investigation, abdominal computed tomography and magnetic resonance imaging revealed the diagnosis of AML in the right kidney. Through treatment with the aromatase inhibitor (letrozole), the AML diagnosed initially with 7.2 centimeters showed a significant reduction to 4.0 centimeters. **Conclusion:** This case report highlights the possible estrogenic action on AML growth, a hypothesis corroborated by previous studies that demonstrated the expression of estrogen and progesterone receptors in most cases, as well as the expression of aromatase in the majority of AML. Although direct causality cannot be proven, clinical observations suggest that endocrine therapy exerts a modulating effect on AML. Future investigations are needed to confirm this association, especially in AML patients contraindicated for surgery or embolization.

Keywords: breast cancer; aromatase inhibitor.