

BEST CASE REPORT – HONORABLE MENTION

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1111 – A rare case of a paraneoplastic neurological syndrome secondary to a her2-positive microinvasive breast carcinoma: the impact of coordinated clinical and surgical oncological care

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Introduction: Paraneoplastic cerebellar degeneration (PCD) is a rare yet clinically significant paraneoplastic neurological syndrome, often associated with breast and gynecological cancers. It develops from an immune response directed against antigens shared between tumor cells and central nervous system tissues. This report of PCD secondary to human epidermal growth factor receptor 2 (HER2)-positive microinvasive breast carcinoma underscores the importance of coordinated clinical and surgical oncological care. Case report: A 68-year-old woman presented with progressive gait instability over two months (cerebellar ataxia). Brain magnetic resonance imaging (MRI) revealed discrete cerebellar abnormalities. Cerebrospinal fluid analysis demonstrated pleocytosis, elevated protein, and low glucose (with negative results for infections or neoplastic cells). Inconclusive findings led to the hypothesis of a potential paraneoplastic syndrome. Right breast ultrasound revealed a focal non-nodular lesion (1.6 × 1.1 × 0.8 cm; BI-RADS 4), and breast MRI showed a 1.1 cm lump. Breast biopsy identified a HER2 3+, hormone receptor-negative microinvasive carcinoma of no special type. Anti-Yo autoantibody was detected in cerebrospinal fluid, confirming the diagnosis of PCD. Intravenous immunoglobulin was administered for five days, followed by referral for upfront breast-conserving surgery with sentinel lymph node biopsy (pT1mi [multiple microinvasion foci] pN0) and adjuvant radiotherapy. Significant neurological improvement occurred in the first month after surgery. Residual ataxia persisted. The patient currently has no evidence of disease. Discussion: PCD diagnosis is supported by the detection of IgG antineuronal autoantibodies; anti-Yo is the most common in breast cancer-associated PCD. The literature also suggests a strong association with HER2+ carcinomas. Even small-volume tumors can elicit significant immune-mediated neuronal loss and potentially irreversible deficits. Immune-modulating treatments (intravenous immunoglobulin, steroids, or plasmapheresis) have variable efficacy. Best responses seem to occur after tumor resection and appropriate adjuvant therapy, which may halt further neurological impairment. Early involvement of the neurology, mastology, and oncology teams allows for coordinated definitive cancer treatment, essential for optimizing neurological recovery.

Ethics: Research Ethics Committee Approval (CAAE 89996225.1.0000.0227).

Keywords: breast neoplasm; paraneoplastic syndromes; anti-yo antibodies; HER2 protein; microinvasive breast carcinoma.