

A case report of a 52-year-old woman with HER2-positive breast cancer and multi-organ metastases including brachial plexus neuroinvasion

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<https://doi.org/10.22146/inajbcs.v57i3.Supplement.24287>

ABSTRACT

Submitted: 2025-09-01
Accepted : 2025-09-04

HER2-positive breast cancer is an aggressive subtype that accounts for 15–20% of all cases, with a tendency to metastasize to the lungs, liver, bone, and brain. Although targeted therapy has significantly improved survival rates, some patients still experience disease progression. Peripheral nervous system involvement, such as the brachial plexus, is rare but indicates advanced disease with poor prognosis. A 52-year-old woman was diagnosed with non-luminal HER2-positive breast cancer in 2022. She had received prior lines of therapy with epirubicin–cyclophosphamide–trastuzumab, vinorelbine–trastuzumab, and capecitabine–lapatinib. Following progression, she was treated with six cycles of trastuzumab deruxtecan (T-DXd) with an initial good response. In April 2025, she developed progressive weakness and paresthesia of the left arm. MRI revealed an infraclavicular mass invading the brachial plexus, along with lung, liver, bone, and brain metastases. Electromyography demonstrated severe C5–T1 polyradiculopathy. Histopathological examination confirmed HER2-positive disease, and PET/CT revealed disease progression. The patient received palliative radiotherapy, and ado-trastuzumab emtansine (T-DM1) was planned as fifth-line therapy. However, her condition deteriorated, and she eventually passed away. This case highlights the aggressive nature of HER2-positive breast cancer with widespread metastases despite sequential targeted therapies. Although data from the DESTINY-Breast03 trial demonstrated that T-DXd is superior to T-DM1, rapid progression can still occur, reflecting heterogeneity of response. Brachial plexus invasion is an uncommon manifestation, usually resulting from direct extension or metastasis, and often causes debilitating neurological symptoms. Management in such cases is largely palliative, focusing on symptom relief and quality of life. HER2-positive metastatic breast cancer with multiorgan involvement and neuroinvasion of the brachial plexus represents a rare clinical scenario. This case underscores the importance of multidisciplinary care and careful sequencing of targeted therapies.

ABSTRAK

Keywords:

HER2-positive breast cancer;
metastatic;
antibody-drug conjugate;
trastuzumab deruxtecan;
trastuzumab emtansine;
neuroinvasion

Kanker payudara HER2-positif merupakan subtype agresif yang mencakup 15–20% keseluruhan kasus dengan kecenderungan metastasis ke paru, hati, tulang, dan otak. Walaupun terapi target telah meningkatkan angka harapan hidup secara signifikan, sebagian pasien tetap mengalami progresi. Keterlibatan sistem saraf perifer, seperti pleksus brakialis, jarang terjadi namun menandakan penyakit lanjut dengan prognosis buruk. Seorang wanita 52 tahun terdiagnosis kanker payudara non-luminal HER2-positif pada 2022. Pasien sudah menerima lini terapi: epirubisin–

siklofosfamid–trastuzumab, vinorelbin–trastuzumab, serta kapesitabin–lapatinib. Setelah progresi, pasien mendapat enam siklus trastuzumab deruxtecan (T-DXd) dengan respons awal yang baik. Pada April 2025 timbul kelemahan dan parestesia progresif pada lengan kiri. MRI menunjukkan massa infraklavikula dengan invasi pleksus brakialis disertai metastasis paru, hati, tulang, dan otak. Elektromiografi mengonfirmasi poliradiklopati C5–T1 yang parah. Elektromiografi didapatkan adanya poliradiklopati C5–T1 yang parah. Pemeriksaan histopatologi didapatkan kembali hasil HER2-positif, dengan hasil PET/CT memperlihatkan progresi penyakit. Pasien menerima radioterapi paliatif, dan ado-trastuzumab emtansine (T-DM1) yang direncanakan sebagai terapi lini kelima, namun kondisi memburuk dan pasien akhirnya meninggal. Kasus ini menyoroti sifat agresif kanker payudara HER2-positif dengan metastasis luas meski telah diberikan terapi target berurutan. Meskipun data uji klinis DESTINY-Breast03 menunjukkan T-DXd lebih unggul daripada T-DM1, tetapi progresi cepat tetap dapat terjadi, menggambarkan heterogenitas respons. Invasi pleksus brakialis merupakan manifestasi yang tidak umum, biasanya diakibatkan oleh perluasan langsung atau metastasis, dan sering menyebabkan gejala neurologis yang melumpuhkan. Manajemen dalam kasus seperti itu sebagian besar bersifat paliatif, dengan fokus pada pengurangan gejala dan kualitas hidup. Kanker payudara HER2-positif metastatik dengan keterlibatan multiorgan dan neuroinvasi pleksus brakialis merupakan skenario klinis yang langka. Kasus ini menekankan pentingnya perawatan multidisiplin dan pengurutan terapi yang ditargetkan secara cermat.