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1030 – Seventeen-year survival in BRCA1-mutated stage IV ovarian cancer with subsequent breast ductal carcinoma in situ: a case report

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Introduction: Advanced high-grade serous ovarian carcinoma (HGSOC) carries a five-year survival rate below 6% at stage IV. Mutations in BRCA1 and BRCA2 increase platinum sensitivity and confer a lifetime breast cancer risk of up to 72%.

Case report: A 47-year-old woman presented in 2008 with HGSOC, peritoneal carcinomatosis, and hepatic metastasis (International Federation of Gynecology and Obstetrics [FIGO] stage IV), with a family history of ovarian cancer. Six cycles of neoadjuvant carboplatin and paclitaxel achieved a complete clinical response and salvage surgery yielded no residual disease. Peritoneal recurrence in 2011 was managed with platinum-based chemotherapy followed by a second complete cytoreduction with hyperthermic intraperitoneal chemotherapy (HIPEC; cisplatin 50 mg/m², 42°C, 90 minutes), complicated with postoperative Ogilvie syndrome. Germline testing in 2019 identified a pathogenic BRCA1 variant (c.5329dupC); mammary surveillance was intensified, with annual magnetic resonance imaging added to standard mammography. In July 2020, magnetic resonance imaging detected an irregular right breast nodule (Breast Imaging Reporting and Data System, BI-RADS 4); biopsy confirmed ductal carcinoma *in situ* (0.6 cm, estrogen receptor [ER] 100%, progesterone receptor [PR] 70%, human epidermal growth factor receptor 2 [HER-2] 1+, Ki-67 expression 10%). She underwent breast-conserving surgery showing negative sentinel lymph node biopsy, then bilateral skin-sparing mastectomy in December 2020, with no residual disease. She remains disease-free as of September 2025, 17 years from initial diagnosis.

Discussion: Seventeen-year survival in FIGO stage IV HGSOC, where the five-year survival rate is below 6%, is exceptional. BRCA1-related platinum sensitivity, complete cytoreduction at both operations, and HIPEC at the second surgery are the most plausible contributors; poly(ADP-ribose) polymerase (PARP) inhibitors were unavailable during treatment. The detection of ductal carcinoma *in situ* rather than invasive carcinoma was made possible by structured surveillance after BRCA1 identification, 12 years post-diagnosis. This case supports universal germline BRCA testing at ovarian cancer diagnosis; timely identification enables breast surveillance and cascade testing for at-risk relatives.

Ethics: Research Ethics Committee Approval (CAAE 30154720.0.0000.5209).

Keywords: ovarian neoplasms; breast neoplasms; peritoneal neoplasms; survivors.