Synchronous Breast and Prostate Cancer in a 76-Year-Old Male: A Case Report

Zainulabideen Ahmed
College of Medicine, Mohammed Bin Rashid University of Medicine and Health Sciences, Dubai Healthcare City, Dubai, United Arab Emirates

Abdulla Al Ani
College of Medicine, Mohammed Bin Rashid University of Medicine and Health Sciences, Dubai Healthcare City, Dubai, United Arab Emirates

Mikhael Fadi
College of Medicine, Mohammed Bin Rashid University of Medicine and Health Sciences, Dubai Healthcare City, Dubai, United Arab Emirates

Abstract

Synchronous primary malignancies are defined as the occurrence of two or more distinct primary tumors diagnosed simultaneously or within a six-month period. This phenomenon is rare, particularly when involving uncommon cancer pairings. Male breast cancer accounts for less than 1% of all breast cancers, while prostate cancer is one of the most frequently diagnosed malignancies among men worldwide. The synchronous presentation of these two hormone-responsive malignancies is exceedingly uncommon and raises important questions regarding shared hormonal, genetic, and biological risk factors.

We report the case of a 76-year-old male with multiple comorbidities and a family history of breast cancer who presented with left nipple retraction and a palpable retro-areolar mass. Breast imaging followed by core biopsy confirmed high-grade invasive ductal carcinoma that was estrogen- and progesterone-receptor positive and HER2-negative. Staging positron emission tomography–computed tomography performed for metastatic evaluation incidentally revealed a hypermetabolic lesion within the prostate. Further assessment using multiparametric magnetic resonance imaging and targeted biopsy confirmed adenocarcinoma of the prostate with a Gleason score of 4+3=7, confined to the left lobe. Genetic testing for BRCA mutations was negative.

The patient underwent left mastectomy with sentinel lymph node biopsy followed by adjuvant hormonal therapy with tamoxifen. Prostate cancer was managed with androgen deprivation therapy followed by high-dose-rate brachytherapy and external beam radiotherapy. Treatment was well tolerated, and the patient demonstrated excellent biochemical response with sustained suppression of prostate-specific antigen levels and no evidence of recurrence on follow-up.

This case highlights the importance of maintaining a high index of suspicion, utilizing comprehensive imaging, and adopting a multidisciplinary approach in elderly patients presenting with atypical findings. Early recognition and coordinated management of synchronous malignancies can result in favorable clinical outcomes despite diagnostic and therapeutic complexity.