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RUNNING TITLE: Very late onset orbital sarcoma and breast carcinoma following retinoblastoma treatment with Radon seed brachytherapy.

KEYWORD: Retinoblastoma, Breast cancer, Radiation, Osteosarcoma, Radon

Dear Editor,

We report a case of an 87-year-old white female presenting with a history of a non-tender right orbital swelling. She had subtotal exenteration for unilateral Retinoblastoma (RB) at age three followed by Radon seed implantation removed 27-years later but received no chemotherapy.

Although radon seeds were encapsulated in gold tubes allowing gamma-ray passage for tumour destruction (whilst blocking alpha and beta particles that can risk tissue necrosis), the decay product (^{210}Pb) continued to emit radiation for a longer period of time associated with increasing cancer risk, hence the use was discontinued after the 1960s.[1]

At 82-years-old she was diagnosed with grade-2 invasive ductal carcinoma of the left breast (oestrogen receptor-positive subtype). The RB pathway has been associated with a less aggressive course in this subtype and non-heritable RB survivors are more prone to radiation related breast cancer.[2,3] No genetic testing was available to confirm a germline RB1 or mosaic mutation.

This case highlights the potential adverse consequence in the radiation field with multiple basal cell carcinomas developing over a 20-year period post radiation and she also fits the criteria of post irradiation sarcoma described by Cahan et al in 1985, which is most commonly encountered 15 years post radiation (reported up to 50 years) unlike the present case, where the sarcoma occurred 84 years later.[4,5,6]

Though there has been a paradigm shift in RB management from radiation to chemotherapy, a careful history of previous, now superseded treatments in late survivors is mandatory, as is awareness of their very late effects.

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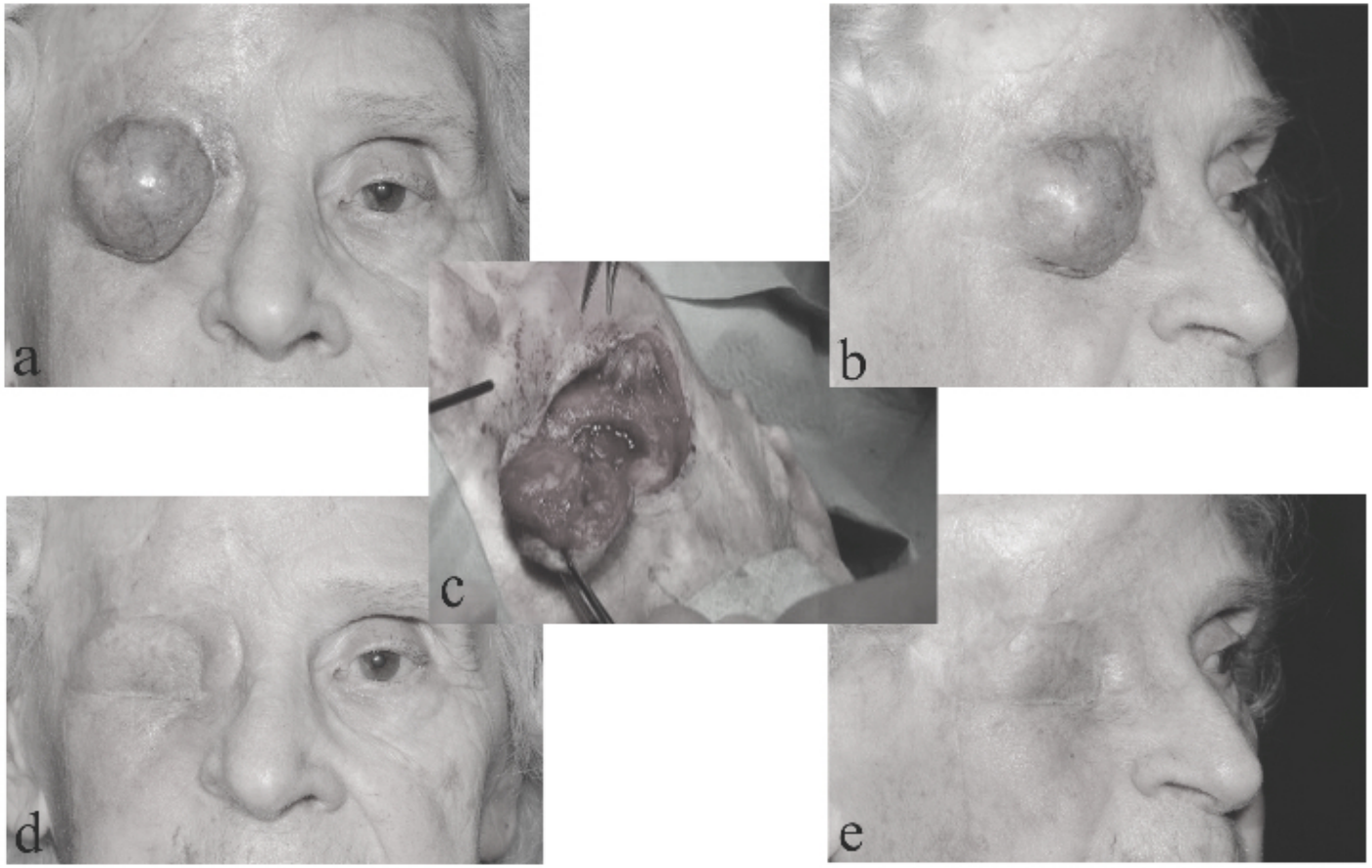
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