

# **Anemia in the breast cancer patient with *PALB2* mutation after radiotherapy - a case report.**

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## **Introduction**

Breast cancer is a molecularly heterogeneous disorder associated with high mortality and morbidity. Among the most important factors contributing in breast cancer are genes. *PALB2* encodes a protein which co-localizes with *BRCA2* in nuclear foci, enhances its stability in chromatin and nuclear matrix and facilitates its tumor suppression.

## **Case report**

We describe a case of patient who had *PALB2* mutation c.509\_510delGA. The patient was diagnosed with breast cancer at the age of 37. Modified radical tumorectomy and a sentinel lymph node biopsy (SLNB) were performed, followed by localized radiotherapy to the left breast 60 Gy in 35 fractions. Preoperative examinations, including a routine blood test (WBC:  $5.05 \cdot 10^3/\text{ul}$ , RBC  $4,463,75 \cdot 10^6/\text{ul}$ ) were in the norm ranges. A few months after radiotherapy blood leucocytes and erythrocytes count started to decline. Leucocytes dropped to  $3,22 \cdot 10^3/\text{ul}$ .

## **Conclusion**

The carriers of mutation in the *PALB2* gene may be at risk of the bone marrow damage after the radiotherapy. We recommend to test founder mutations in the *PALB2* gene in breast cancer patients prior to radiotherapy.

## **Consent**

Written informed consent was obtained from the patient for publication of this Case report and any accompanying images.

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