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Tytuł pracy: 'Pearls and Pitfalls' of 68Ga-PSMA PET/CT imaging performed prior to definitive treatment of prostate cancer
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Abstrakt:
Introduction
^{68}Ga-PSMA PET/CT plays an important role in staging of prostate cancer (PCa) patients. Its impact on patient management has been widely confirmed in the context of recurrent disease, but also in primary staging, especially in intermediate- and high-risk disease, where it can identify subcohorts with nodal and distant metastases prior to definitive treatment.

Aim
The aim of this study was to retrospectively analyse the diagnostic accuracy of 68Ga-PSMA I&T PET/CT performed before radical prostatectomy (RP) with extended pelvic lymph node dissection (ePLND) in biopsy proven, treatment-naïve PCa patients in primary staging of disease, with special attention to 'Pearls and Pitfalls' of this imaging method.

Subjects & methods
42 patients included in the study underwent ^{68}Ga-PSMA I&T PET/CT, of whom 40 were subsequently operated. PSMA-avid distribution of disease was correlated with post-operative histopathological findings. Special attention was paid to untypically located PSMA-avid lesions, particularly outside the skeleton and retroperitoneum (miM1c according to PROMISE criteria).

Results
Mean age 66±7 years (range 7-80), median Gleason score 7 (6–10), median PSA level 11 ng/ml (2-140). Low-risk disease was present in 1, intermediate-risk in 21, and high-risk in 20 patients (according to D'Amico classification).
Untypically located PSMA positive lesions were reported in three individuals: Patient 1: in inguinal lymph nodes bilaterally, Patient 2: in liver, Patient 3: in lungs. PSMA positive inguinal lymph nodes (Patient 1) were not considered malignant in the PET report which was confirmed right in the follow-up. A subsequent biopsy of the liver lesions in Patient 2 ruled out their relationship with prostate cancer, while further investigation, including gastroscopy revealed incidental finding of 'second primary' PSMA-negative esophageal cancer which proved to have histological similarity to the liver lesions. Lung lesions in Patient 3 presenting

faint uptake of tracer were assigned to PCa on the basis of Hematoxylin & Eosine staining, and had partial PSMA expression in aditional immunohistochemical staining.

Conclusions

^{68}Ga-PSMA PET/CT can identify prostate cancer patients with lymph node and skeletal metastases, however due to lack of full understanding of mechanisms of PSMA expression, there are still some pitfalls making accurate imaging of prostate cancer lesions difficult.