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PET/CT imaging of the cystoid structure of the urinary tract

Introduction

Modern radiological centers perform more than a hundred PET/CT scans of the entire human body on a daily basis, with various radiopharmaceuticals to detect tumor and functional disorders of the local metabolism of introduced biomolecules. However, a comprehensive assessment of the patient's other organs is not included in the tasks of the radiologist.[1] At the same time, a careful retrospective analysis of the obtained data makes it possible in a number of cases to reveal the features of radiological visualization and combined nuclear research.[2] Taking this into account, the cystoid theory of urination is widely debated, which states that each segment of the urinary tract has its own functional reservoir and obturator, similar to small bladders. This can be seen in dynamic urokinematography but is not fixed in the process by static excretory urography.[3–5]

Purpose of the study

To assess the visual picture of PET/CT metabolism of 18F-FDG glucose by the organs of the urinary system in patients without a history of nephrological disease.

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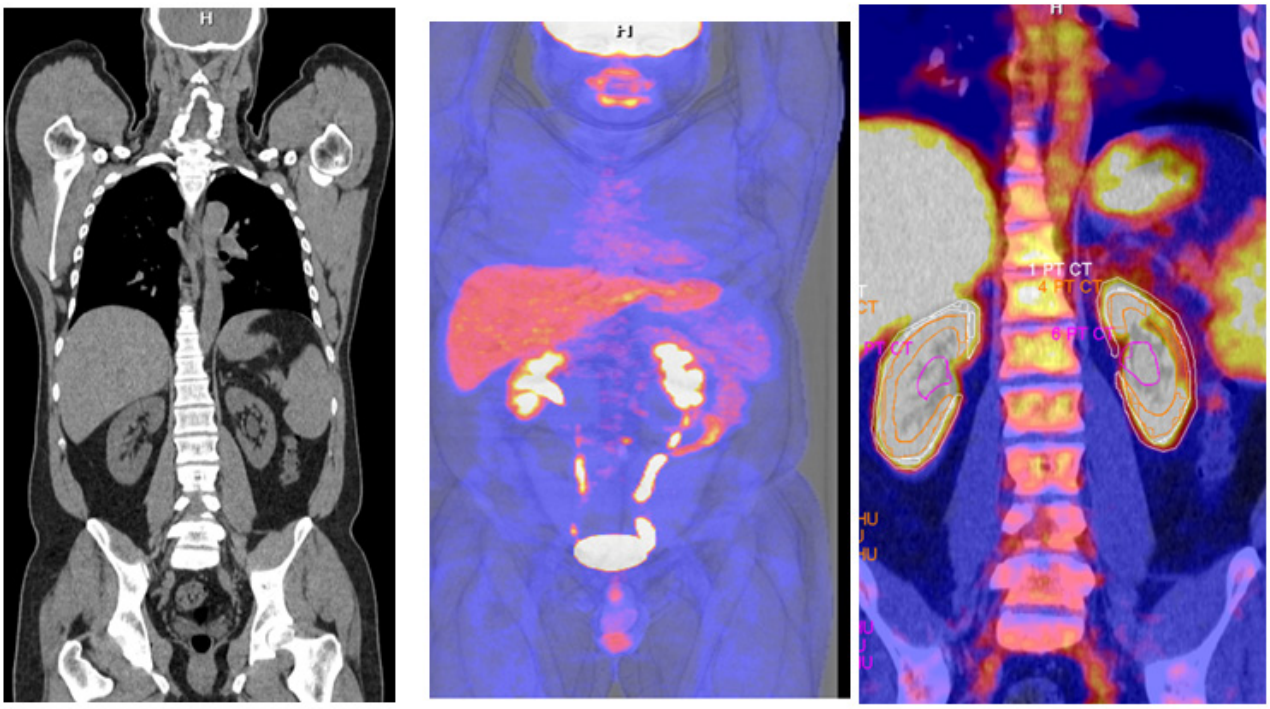
Results

A series of tomograms (Figure 1) presents a typical picture of native computed tomography (CT), positron tomography (PET) and combined PET/CT tomography of the patient with healthy organs of the urinary system. The visual picture of the X-ray and radionuclide methods has a fundamental difference that allows you to record the cystoid functions of the urinary system with its reservoirs and sphincter devices (pelvis-upper- middle- lower ureter cystoids-bladder).



CT PET PET / CT

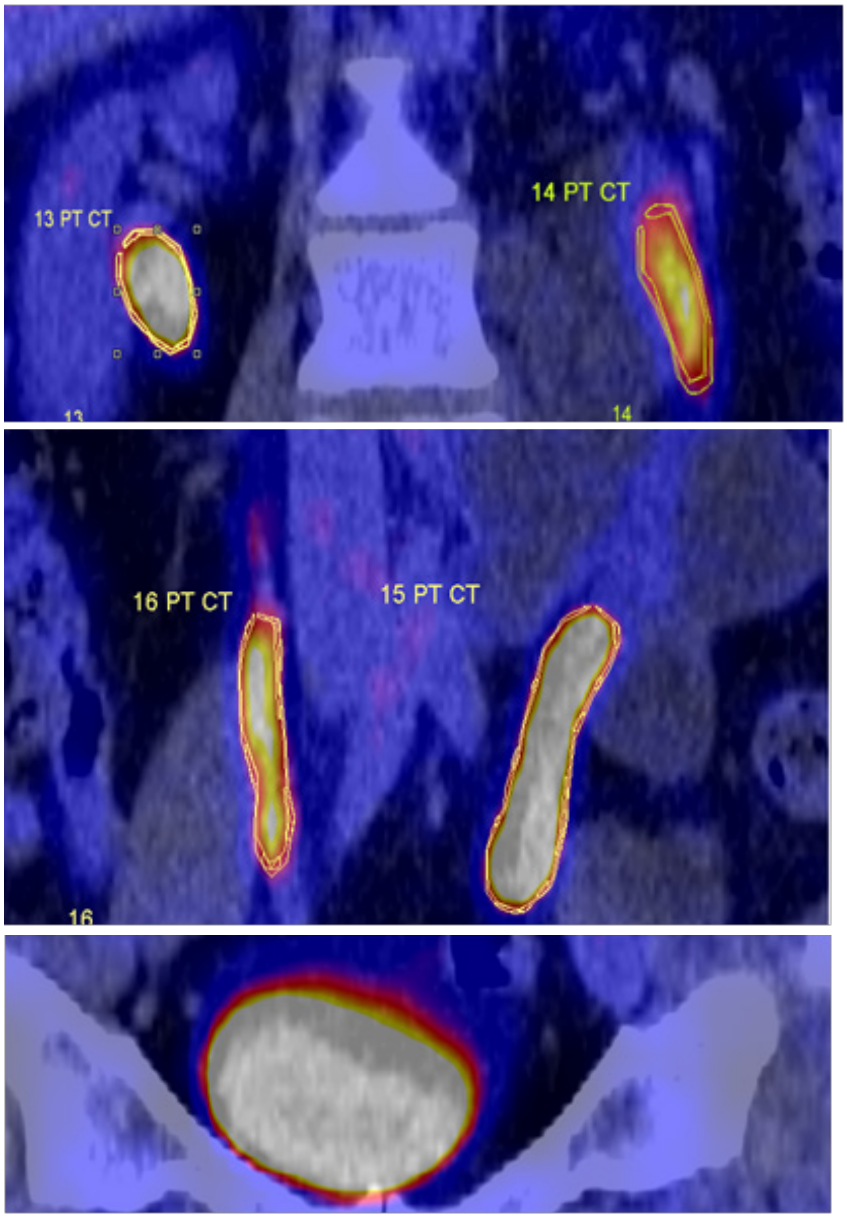


Figure 1 PET/CT imaging of the cystoid structure of the urinary tract (pelvis–upper–middle–lower ureter–bladder).

Conclusion

The active introduction of PET/CT technology in clinical medicine makes it possible to identify previously unknown potential capabilities of the method requiring an adeate scientific explanation.

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Conflicts of interest

Authors declare no conflict of interest.

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