

CTE 6

Technologist Committee

Tuesday, October 15, 16:30-18:00

Session Title

Parathyroid Imaging

Chairpersons

Sebastijan Rep (Ljubljana, Slovenia)

Claudiu Pestean (Cluj, Romania)

Programme

16:30 - 17:00 Luka Lezaic (Ljubljana, Slovenia): Comparison of 99mTc-MIBI and 18F-Fluorocholin Scintigraphy in Localization of Hyperfunctioning Parathyroid Tissue

17:00 - 17:30 Giovanna Pepe (Milan, Italy): 11C-Methionine PET-CT Imaging in Hyperparathyroidism

17:30 - 18:00 Sebastijan Rep (Ljubljana, Slovenia) & Giorgio Testanera (London, United Kingdom): The Role of a Technologist in the Preparation of Acquisition Protocols and the Processing of Image Data in Nuclear Medicine Parathyroid Imaging

Educational Objectives

1. Understanding clinical indications for parathyroid scintigraphy.
2. To get acquainted with different radiopharmaceuticals used for parathyroid imaging
3. To understand the basic principles of subtraction scintigraphy, SPECT/CT and PET/CT
4. To get acquainted with the advantages of PET/CT imaging in diagnosis of PHP
5. To know how to create a protocol for carrying out investigations in relation to the radio-pharmaceutical that is used.
6. To understand the role of the technologist in the imaging procedures.

Summary

Primary hyperparathyroidism (PHP) is one of the most common endocrine disorders, caused most often by solitary adenoma, hyperplasia or very rarely parathyroid carcinoma. Parathyroid subtraction scintigraphy is the most commonly used imaging method for localization of hyperfunctioning parathyroid tissue (HPT) in primary hyperparathyroidism, a common endocrine disorder. Hybrid (SPECT/CT) imaging with 99mTc-sestaMIBI (MIBI) may be the most accurate conventional imaging approach, but includes additional radiation exposure due to added CT imaging. Positron Emission Tomography (PET) is a functional imaging method that is less commonly used in PHP diagnostics. A very limited, affordable, cyclotron-produced radioactivity 11C-methionine produced a wide range of sensitivity. Comparison with SPECT is potentially useful when we do not locate lesions with SPECT or subtraction scintigraphy. Recently, 18F-choline (FCH) PET/CT was introduced for HPT imaging, which can also be performed using the dual-phase approach. In the research that was done at that time, it proved to be a useful method when SPECT and subtraction scintigraphy are negative.

Key Words

Primary hyperparathyroidism, adenoma, 99mTc-sestaMIBI, subtraction scintigraphy SPECT/CT, 18F-choline PET/CT, 11C-methionine