Pitfalls & Artefacts 3
Neuroimaging Committee
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Session Title
Challenging Cases in Nuclear Neurology

Chairperson
Silvia Morbelli (Genoa, Italy)

Programme
29 min Agostino Chiaravalloti (Rome, Italy): Challenging Cases in Neurodegenerative Dementia
29 min Matthias Brendel (Munich, Germany): Challenging Cases in Movement Disorders
29 min Tatjana Traub-Weidinger (Vienna, Austria): Challenging Cases in Neuroncology
3 min Session Summary by Chairperson

Educational Objectives
1. To learn about challenges related to clinical presentation in patients who undergo brain PET and SPECT in the framework of neurodegenerative diseases and brain tumors
2. To correlate imaging findings to clinical presentation in patients who undergo brain PET and SPECT in the framework of neurodegenerative diseases and brain tumors
3. To learn about imaging findings in atypical and infrequent presentations/variants in patients with neurological diseases who undergo brain PET and SPECT

Summary
There are several potential challenges related to reading and interpretation of Brain PET images in the field of neurodegenerative diseases and brain tumors. These challenges might derive from atypical or incomplete clinical presentations as well as to need of a combined interpretation of both functional and morphological in the contest of hybrid imaging as well as with respect to stand-alone MRI (generally performed before PET studies). Given the complexity of neurodegenerative diseases, there is frequently a true necessity to combine functional and structural information to interpret brain pathology. Indeed structural MR images may provide accurate anatomical information thank to a better spatial resolution; however, some details derived from multiparametric MRI (such as diffusion tensor imaging) are much more difficult to interpret in everyday clinical setting. Moreover, the use of the MR functional images in individual clinical cases can be affected suboptimal inter-observer agreement. The present pitfalls session will deal with complex cases in patients with neurodegenerative dementia, movement disorders and brain tumors. The need for a strict correlation between clinical presentation, morphological and PET imaging will be specifically addressed.

Key Words
Neurodegenerative dementia, Movement disorders, Brain tumours