The Effectiveness of ^{18}F-FDOPA in the accurate diagnosis of Pheochromocytoma

AIM: To demonstrate the effectiveness of ^{18}F-Fluorodihydroxyphenylalanine (^{18}F-FDOPA) in the accurate diagnosis of pheochromocytoma. A case based analysis of the clinical pathway of a 42 year old male with an incidental finding of a right adrenal mass and abnormal catecholamine levels.

METHODS: The results of Pathology, Computed tomography, ^{68}Ga-Dotatate positron emission tomography/magnetic resonance imaging (PET/MRI) and ^{18}F-FDOPA positron emission tomography/computed tomography (PET/CT) are systematically reviewed. The patient was injected with 205 MBq of ^{18}F-FDOPA and PET/CT is acquired at 3 minutes per bed from vertex to thighs.

RESULTS: The findings of the ^{18}F-FDOPA scan conclusively diagnosed the presence of a pheochromocytoma where other imaging techniques could not. CT and MRI whilst effective in identifying an abnormality, are unable to distinguish between pathologies in this case. ^{68}Ga-Dotatate can be difficult to interpret due to its physiological uptake.

CONCLUSION: ^{18}F-FDOPA provided a swift, conclusive and accurate diagnosis, allowing for confidence in patient treatment and surgical intervention. The high target to background ratio of ^{18}F-FDOPA is a major advantage over other functional imaging. This case demonstrates the superiority of ^{18}F-FDOPA and it should be strongly considered for use as the first line imaging tool for suspected pheochromocytoma.