

# Positron-Emission Tomography/Computed Tomography (PET/CT) in the Initial Staging of Primary Rectal Cancer

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## **ABSTRACT**

### ***Purpose***

To assess the role of 18Fluorodeoxyglucose Positron-Emission Tomography/Computed Tomography (PET/CT) in the initial staging of primary rectal adenocarcinoma.

### ***Methods***

20 patients with adenocarcinoma of the rectum were assessed with both PET/CT and conventional staging (CT chest/abdomen/pelvis, MRI rectum). Discordance with conventional imaging and incidental findings on PET were recorded and the patients presented to a colorectal cancer multidisciplinary team to assess management changes. Patients were followed up such that discordant or incidental findings could be verified by intraoperative examination, imaging or histology where possible.

### ***Results***

PET/CT correctly identified the primary tumour in all 20 patients. Comparing PET/CT with conventional staging modalities there were 11 discordant or incidental findings in 9 patients (45%). This resulted in a potential change in stage in 30% (4 patients downstaged and 2 upstaged). PET/CT suggested additional neoplastic pathology in 3 patients and excluded the same in 2 patients. The incidental neoplastic findings were of minor clinical significance and one was eventually deemed false positive. While PET/CT resulted in potential management changes in 5 patients (25%), no changes in surgical management occurred. When tumours were grouped according to conventional stage, PET/CT resulted in fewer changes in stage in stage I (0%), compared with stages II to IV 43%) ( $p=0.08$ ).

### ***Conclusion***

PET/CT provides additional information to conventional staging in primary rectal cancer. This information produced minor management changes in this study and did not effect surgical management. PET/CT may be most appropriately used selectively in more advanced stages and where indeterminate findings exist with conventional staging.