

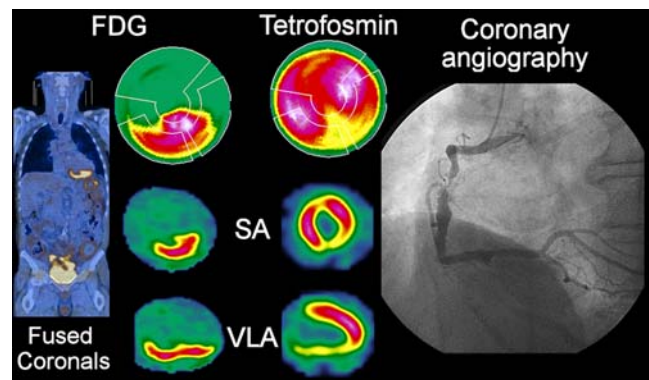
## Unsuspected hibernating myocardium detected by routine oncology $^{18}\text{F}$ -FDG PET/CT

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We present the case of a 62-year-old man with colorectal carcinoma with unusual segmental myocardial  $^{18}\text{F}$ -FDG uptake. PET/CT scan was requested for evaluating response to chemotherapy before surgery. Bull's eye, short axis (SA) and vertical long axis (VLA) slices of  $^{18}\text{F}$ -FDG showed an inferior segmental FDG hypermetabolism with no significant uptake in other myocardial wall. A rest tetrofosmin myocardial scintigraphy showed inferior myocardial hypoperfusion mismatch congruent with the segmental FDG uptake. Coronary angiography demonstrated a very narrow proximal right coronary artery stenosis treated with percutaneous angioplasty.

From what is currently known about the regional myocardial FDG uptake variability [1], one might think that it is difficult to identify an ischaemic cardiopathy on a routine oncology PET scan. Nevertheless, glycolysis is stimulated in the ischaemic myocardium [2, 3], which is consistent with our observation of inferior myocardial increased FDG uptake corresponding to hibernating myocardium in an area distal to a severe right



coronary artery stenosis with rest hypoperfusion. In our experience, inferior segmental myocardial FDG uptake is rarely seen in oncology PET scans but should not be ignored.

### References

1. Inglese E, Leva L, Matheoud R, Sacchetti G, Secco C, Gandolfo P, et al. Spatial and temporal heterogeneity of regional myocardial uptake in patients without heart disease under fasting conditions on repeated whole-body  $^{18}\text{F}$ -FDG PET/CT. *J Nucl Med* 2007;48: 1662–9.
2. Opie LH, Lopaschuk GD. Fuels: aerobic and anaerobic metabolism. In: Opie LH, editor. *Heart physiology: from cell to circulation*. Philadelphia: Lippincott Williams & Wilkins; 2004. p. 306–54.
3. Mäki M, Luotolahti M, Nuutila P, Iida H, Voipio-Pulkki LM, Ruotsalainen U, et al. Glucose uptake in the chronically dysfunctional but viable myocardium. *Circulation* 1996;93:1658–66.

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