**Figure legends**

Figure 1: Serial CT assessment of lytic skeletal metastases. Initial assessment (a) demonstrates multiple lytic skeletal metastases demonstrated in the iliac bones. Six months later, after four courses of Carboplatin and Paclitaxel, interval CT assessment (b) demonstrates progressive disease with increase in size of lytic skeletal metastases as well as a new lesion in the sacrum on this image. First post-assessment CT (c) after 2 months of Abiraterone therapy demonstrates stable size of bony metastases with internal and marginal sclerosis seen reflecting the early features of bone healing. An assessment study at 1 year (d) demonstrates further increased sclerosis of bone lesions reflecting bone healing as well as sclerosis of prior subtle/occult metastases.

Figure 2: Baseline 18F-FDG PET/CT assessment (figure a) demonstrating widespread skeletal metastases in the vertebra, ribs and pelvis on a sagittal maximum intensity projection of the PET component. This demonstrates a partial metabolic response at 3 month post treatment assessment (figure b) with a complete metabolic response at 6 month post –treatment assessment (figure c).

Figure 3: Pre-treatment (a-c) and 6 month post-treatment (d-f) assessment 18F-FDG PET/CT studies (a, d – 3mm axial CT; b, e – 3mm fusion axial PET/CT and c, f – axial PET) demonstrating a partial response after commencement of Bicalutamide. FDG avid disease is seen within the T12 vertebral body extending into the left pedicle on pre-treatment study with very subtle lucency on the CT study. Post- treatment scan demonstrates a marked reduction into FDG activity with patchy marginal sclerosis on the CT scan.

Figure 4: Core biopsy of left iliac crest showing (a) a myxoid and epithelial tumour with characteristic features of Metastasizing Pleomoprhic Adenoma (MPA). Low power view 10X

(b)Higher magnifications showing small sized ducts lined by cells with ample and eosinophilic cytoplasm indicating oncocytic differentiation. 40x. (c) Immunohistochemistry for androgen receptor. Strong nuclear staining is seen in the majority of ductal cells. 40X

Figure 5: Baseline CT (a, d) demonstrate pulmonary metastases in the left lower lobe (solid arrow) and left upper lobe (open arrow) respectively. After 4 months Bicalutamide therapy (b, e) there has been a partial response to treatment. Continued response is seen at 10 months post Bicalutamide therapy (c, f).