Case of the Quarter

Clinical History:

Patient with metastatic melanoma, on anti-PD1 inhibitor therapy with favourable response. ? ongoing response.

Findings:

FDG PET/CT imaging was performed from the base of skull to lower legs with low dose CT attenuation correction and image fusion. Comparison is made to the previous scan performed 3 months prior.

There has been a further reduction in activity associated with the right pelvic node (SUVmax was 5.8 and is now 5.2) and right hilar node (SUVmax was 3.7 and is now 3.5).

There is progressive increasing uptake which is now intense in the soft tissues around the shoulders and knees (synovitis), the lumbar spine posterior and anterior interspinous spaces (bursitis) and in relation to the soft tissues around the hips and ischial tuberosities (enthesopathy). There is slightly prominent uptake in the aortic arch.

No other significant sites of abnormal nodal, visceral or skeletal activity are demonstrated elsewhere.

Interpretation:

Scan findings are in keeping with stable appearances in previous known metastatic disease. The increasing soft tissue abnormalities are inflammatory and likely to be due to polymyalgia rheumatica.

Key Teaching points and Discussion:

- New classes of immunomodulatory antibodies that augment T-cell activation have significant efficacy in patients with advanced metastatic melanoma and improve survival in patients who respond to therapy.

- This includes antibodies that target (1) Cytotoxic T-lymphocyte-associated antigen 4 (CTLA-4) (ipilimumab) and (2) Programmed cell death-1 (PD-1) receptor (pembroluzimab, nivolimab).

- The side effects of these antibodies are different from cytotoxic therapies and include a variety of auto-immune type responses. When they occur, they are frequently visualised on FDG PET/CT owing to their inflammatory aetiology.

- Side effects include colitis, hepatitis, endocrinopathies (hypophysitis, adrenalitis, thyroiditis) and sarcoidosis. Less common immune-related adverse effects include nephritis and pancreatitis.
In this case, the new findings which appeared after therapy are characteristic of polymyalgia rheumatica (PMR) and are most likely a drug-adverse effect.

The characteristic appearance of PMR is a distinctive interspinous bursitis, widespread enthesopathies, synovitis and background large or medium large vessel vasculitis.

References: