

**31. USE OF DUAL ENERGY CT (DECT) SCAN TO ESTABLISH
DIAGNOSIS OF GOUT IN DIALYSIS DEPENDENT PATIENT
SUSPENDED FROM RENAL TRANSPLANT LIST DUE TO
RECURRENT PYREXIAS OF UNKNOWN ORIGIN**

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Introduction: This case highlights the emerging role that dual energy CT (DECT) scan can have in establishing the diagnosis of gout, where other diagnostic tests have not been able to. We report using the DECT to establish the diagnosis of gout as cause of pyrexia of unknown origin in a dialysis patient who had been suspended from listing for renal transplantation until a diagnosis had been confirmed.

Case description: A 63 year old male dialysis patient was being investigated for pyrexia of unknown origin. He had a history of recurrent joint effusions, and an empirical diagnosis of gout had been made twenty years previously. The symptoms were classical for gout but the diagnosis had never been confirmed radiographically or on polarising microscopy. Urate level was elevated prior to commencing dialysis (>600 $\mu\text{mol/L}$) but had fallen with dialysis, and ranged between 250–400 $\mu\text{mol/L}$. He had been on low dose Allopurinol (maximum 200mg daily) for over 20 years and had been unable to continue with a trial of Febuxostat due to

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deterioration in renal function. Plain film radiographs and MRI scans had not shown any classic changes of gouty arthropathy. There were no tophi present clinically or radiographically. More recently, he had been admitted for pyrexia of unknown origin with no confirmed microbiological or malignant source of fever confirmed, and had been extensively investigated by the infectious diseases team. The episodes were found to be steroid responsive. The febrile episodes were usually (but not consistently) preceded by joint swelling which generally abated prior to admission. Assessment in the fever clinic at the National Amyloidosis Centre had failed to show any genetic conditions associated with periodic fevers. Attempts at early synovial analysis were unsuccessful due to the transient nature of the synovitis. Past medical history was significant for end stage renal failure secondary to diabetic nephropathy, ischaemic heart disease, peripheral vascular disease, hypertension and hypercholesterolemia. He had been suspended from the renal transplant list until the cause of the recurrent fevers had been confirmed. A DECT scan was used to establish gout as the cause of the recurrent fevers. It demonstrated evidence of uric acid deposition within the patellar tendons bilaterally as well as further uric acid deposition within the right tibiotalar joint, medial margin of the right first MTP joint, insertion of the Achilles on the right calcaneum and at both peroneus brevis insertions. These findings are consistent with gout. Full colour images are available for review. A diagnosis of polyarticular gout was made as a result of the diagnostic scan and he was treated with long term colchicine, ongoing Allopurinol and early low dose steroids for flares. The episodes settled and he had no further admissions for pyrexia of unknown origin and was relisted for renal transplantation.

Discussion: DECT scan is emerging as a useful diagnostic tool for patients with suspected gout where other diagnostic tests have been inconclusive. This case demonstrates the clinical impact of making such a diagnosis, as it facilitated relisting for transplantation and reduction in hospital admissions and further unnecessary diagnostic tests.

Key learning points: Recurrent episodes of acute gout forms part of the differential diagnosis of periodic fevers. In a patient with suspected gout, DECT scan is a useful test where other diagnostic tests have been inconclusive.