

Letters

We thank Dr Lathlean and Professor McNeil for a comprehensive review of a young man with chronic oligoarthritis (*AJGP* May 2021).¹ We note that dual energy computed tomography (DECT) was considered as a further investigation in the case and would like to highlight the utility of DECT as a method of diagnosing gout within primary care.

DECT is a newer form of imaging in which two different peak energy levels of X-rays (80 kV and 140 kV) are used to simultaneously obtain images and determine the chemical composition of materials within the body.² As materials have unique attenuation characteristics for specific energy levels, the resultant image created can identify the presence and quantify the volume of uric acid from other minerals such as calcium in the diagnosis of gout or renal stones containing uric acid.³ Urate deposits appear coloured in DECT images, which reduces the interobserver variability in reporting and provides an illustrative representation of the disease for the patient.⁴

DECT could be particularly useful as a non-invasive investigation in challenging diagnoses where it may be difficult or impractical to obtain a joint aspirate, as an adjunct to exclude gout from other arthropathies, for identification of subclinical disease in asymptomatic areas and to quantify or monitor disease burden.³ A systematic review of DECT for gout showed DECT has a high sensitivity of 0.90 (95% confidence interval [CI]: 0.86, 0.93) and specificity of 0.80 (95% CI: 0.73, 0.86) when compared with the gold-standard reference detection of monosodium urate crystals in joint fluid by polarised light microscopy.⁴ DECT also has a low effective radiation dosage of 0.02–0.5 mSv per joint.⁴ For reference, a computed tomography scan of the chest has an effective dosage of 6.2 mSv.⁵

The use of DECT is recognised by the American College of Rheumatology and European League Against Rheumatism as a criterion for the classification of gout. The 2015 revision included evidence of urate deposition by DECT as an imaging criterion in the diagnosis of gout, which is in addition to conventional radiography demonstrating gout-related joint damage.⁶ As DECT becomes increasingly prevalent, we believe this tool may have a role for undiagnosed arthropathies in primary care.

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Reply

Thank you for your interest in our article. In response to your comments about dual energy computed tomography (DECT), we acknowledge this can be a useful adjunct to the non-invasive diagnosis of gout. However, we would also point out that it establishes the presence of urate in the tissues but does not necessarily establish this as the cause of the inflammation.

Infected gout has long been recognised as a diagnostic problem; therefore, if DECT were positive in our case, it may have added to the patient's own misconception that he had gout and not tuberculous arthritis. If it were negative, it would not necessarily have ruled out gout and again would not have identified tuberculosis as the cause of the patient's symptoms.

In our case, clinical consideration of the entire picture was needed to diagnose tuberculosis as the cause of ankle pain.

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