



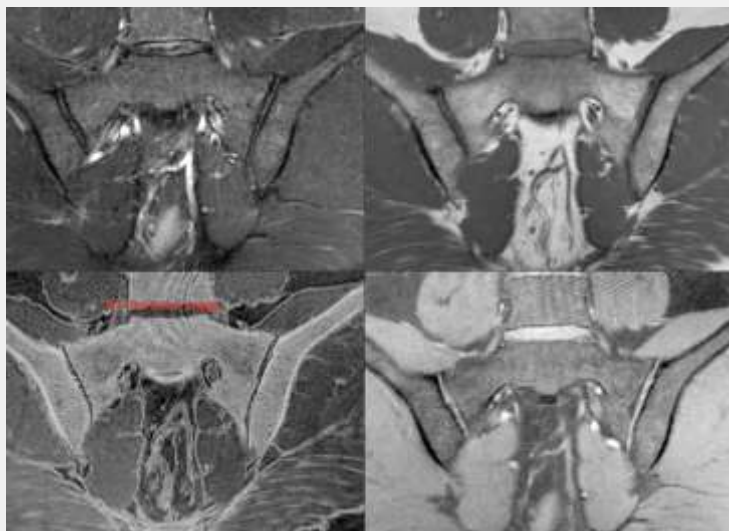
## CT-Like Bone Images for Sacroiliac Disease

Last month, I introduced the topic of CT-like bone images, obtained during an MRI that add value. This is done with the use of an ultra-short or zero echo time (UTE/ZTE) sequence.

One joint where it is most useful as an adjunct is the sacro-iliac joint, where we have started using this sequence routinely.

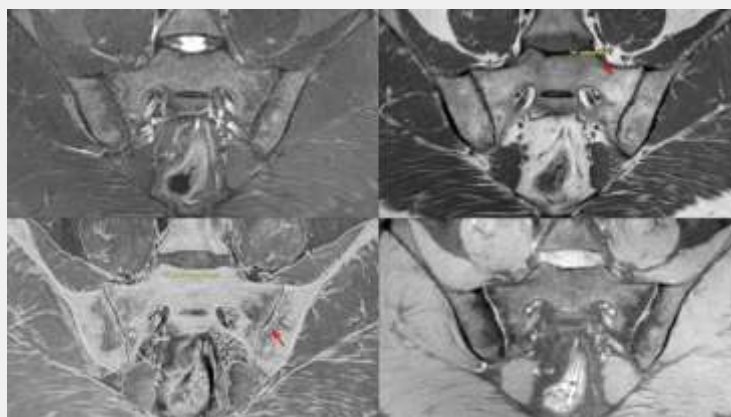
The CT-like bone image sequence helps us confirm that the joint is normal (Fig. 1) or is involved in an axial spondylarthritis (Fig. 2) or is just stress-induced osteitis condensans ili (Fig. 3) or if there is an infectious arthritis such as tuberculosis (Fig. 4).

Fig. 1: Normal sacroiliac joint.



The MRI images and the CT-like bone image (left lower) confirm that the joints are normal.

Fig. 2: Bilateral inflammatory sacroiliitis (axial spondyloarthritis).



In this patient with long-standing ankylosing spondylitis, the MRI images show an erosive inflammatory arthropathy with erosions and marrow edema. The CT-like bone image (left lower) shows the erosions and mild sclerosis well, complementing the MRI diagnosis.



#### At a glance

- ◆ MRI has been the gold standard tool for sacro-iliac joint pathology evaluation
- ◆ ZTE/UTE MRI sequences can provide CT-like bone images and help obviate the need for a CT in many instances.
- ◆ CT-like bone images help improve our ability to diagnose sacroiliac joint pathologies.

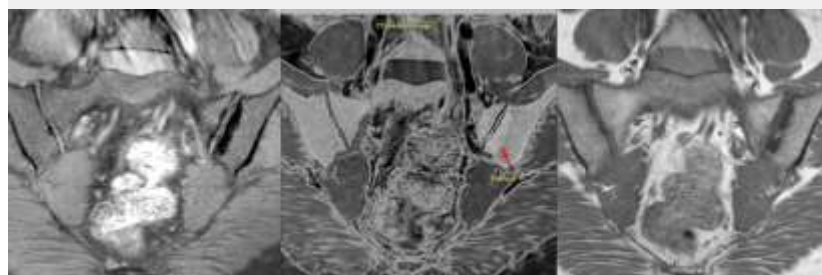


Fig. 3: 29-years old woman with two children. The MRI shows left subarticular likely sclerosis without erosions. The CT-like bone image (middle image) clearly shows the flame-shaped subarticular sclerosis without erosions, characteristic of osteitis condensans ili (OCI).

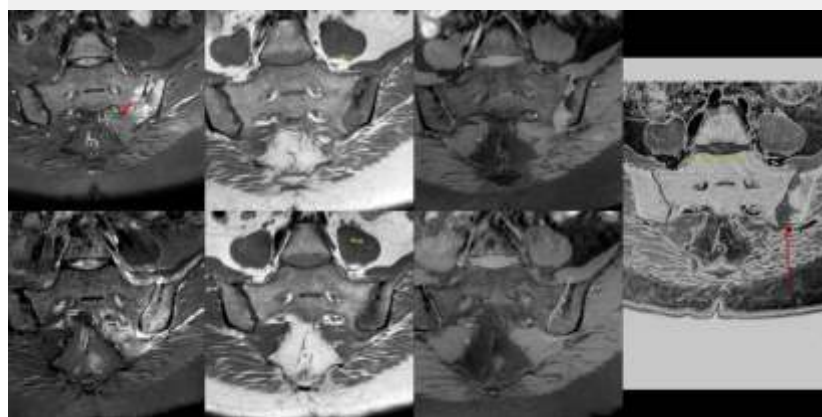


Fig. 4. Tuberculous sacroiliitis. In August, the patient had unilateral left sacroiliitis, which was biopsied and showed tuberculosis. In October, the MRI shows further destruction of bone, though the marrow edema has improved, suggesting a mixed response. The CT-like bone image (extreme right) shows the large subarticular erosions in the iliac bone (red arrow), again complementing the MRI findings.

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