Intervertebral disc calcification

Intervertebral disc calcification is an often overlooked disc phenotype that might have considerable clinical impact. IVD calcification is not a rare finding in aging or in degenerative and scoliotic spinal conditions but is often ignored and under-reported. IVD calcification may lead to stiffer IVDs and altered segmental biomechanics, more severe IVD degeneration, inflammation, and low back pain. Calcification is not restricted to the IVD but is also observed in the degeneration of other cartilaginous tissues, such as joint cartilage, and is involved in the tissue inflammatory process. Furthermore, IVD calcification may also affect the vertebral endplate, leading to Modic changes (non-neoplastic subchondral vertebral bone marrow lesions) and the generation of pain. Such effects in the spine might develop in similar ways to the development of subchondral marrow lesions of the knee, which are associated with osteoarthritis-related pain. We propose that IVD calcification is a phenotypic biomarker of clinically relevant disc degeneration and endplate changes. As IVD calcification has implications for the management and prognosis of degenerative spinal changes and could affect targeted therapeutics and regenerative approaches for the spine, awareness of IVD calcification should be raised in the spine community [1)]

Intervertebral disc calcification is seen with numerous conditions.

Intervertebral disc degeneration: relatively common and may occur in up to 6% in routine abdominal radiographs in adults

Postoperative/traumatic

Ochronosis: very dense central (nucleus pulposus) calcification associated with osteopaenia; begins in the lumbar spine and ascends..

Ankylosing spondylitis: associated findings should be visible

Pseudogout (CPPD): annulus fibrosis calcification

Haemochromatosis: annulus fibrosis calcification

Hypervitaminosis D: annulus fibrosis calcification (uncommon manifestation)

Transient intervertebral disc calcification is seen in children, typically in the cervical spine and spontaneoulsy regresses.

juvenile chronic arthritis (JCA)

amyloidosis

poliomyelitis

acromegaly

hyperparathyroidism.

see Pediatric idiopathic intervertebral disc calcification

1)

Zehra U, Tryfonidou M, Iatridis JC, Illien-Jünger S, Mwale F, Samartzis D. Mechanisms and clinical implications of intervertebral disc calcification. Nat Rev Rheumatol. 2022 May 9. doi: 10.1038/s41584-022-00783-7. Epub ahead of print. PMID: 35534553.