



The Double Line Sign: Thinking about a Bone Infarction

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Clinical Image

Bone Infarction results from loss or decrease in blood supply to the bone. The double line sign first described by MITCHELL in 1989, is pathognomonic of Bone Infarction [1]. The sign is visualized in T2-Weighted sequence or in proton density as a hypointense ring with upper and external concavity bordered internally by a hypersignal line. It circumscribes a subchondral hypointense zone [2]. The infarcted bone marrow preserves its signal because the devitalized fatty marrow maintains the signal in T1 and T2 in the non-advanced stages. The T2 hypointense zone represents a fibrous and sclerotic zone while the T2 hypersignal region represents the repairing granulation tissue more hydrated at the infarcted bone, normal bone interface and the necrosis focus itself constitutes the subchondral hypo intensity. Thus, bones infarcts occur in a particular pathogenic context in the occurrence of barotrauma, sickle cell anemia, Gaucher disease or in case of corticosteroid therapy [3] (Figure 1).

Keywords: MRI; Bone infarction; Double line sign

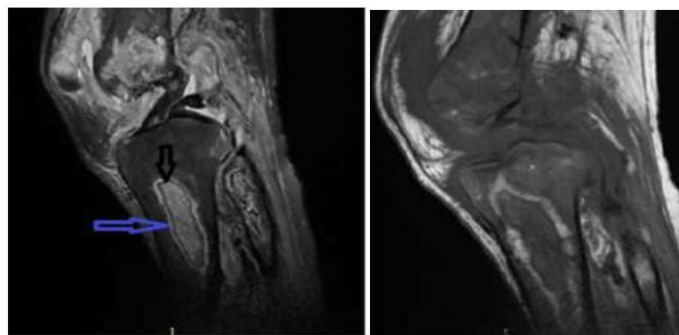


Figure 1: MRI of knee, sickle cell Anemia, Proton density and T1 Weighted sequence on sagittal plan illustrating the typical Double Line Sign of a tibial infarction.

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