Failure of fat suppression? MRI of serous atrophy of the bone marrow: a follow-up case with the literature review

Versagen der Fettunterdrückung? MRT der serösen Atrophie des Knochenmarks: ein Fallbericht mit Verlaufsuntersuchungen und Literaturrecherche

Teaching point. SABM can be misinterpreted as failed fat suppression on MRI due to a technical error resulting in unnecessary repetition of MRI.

Introduction

Discussion
In SABM there is histopathologically significant atrophy of hematopoietic and fat cells with deposition of extracellular gelatinous material, composed of hyaluronic acid-rich mucopolysaccaride, in the bone marrow stroma (Böhm J. Gelatinous transformation of the bone marrow: the spectrum of underlying diseases. Am J Surg Pathol. 2000; 24(1):56–65; Boutin RD et al. MRI findings of serous atrophy of bone marrow and associated complications. Eur Radiol. 2015; 25(9):2771–8).

Row signal and fat may be misinterpreted as technical error from insufficient fat suppression resulting in unnecessary repeated imaging (Boutin RD et al. MRI findings of serous atrophy of bone marrow and associated complications. Eur Radiol. 2015; 25(9):2771–8). Usually thin layers of subcutaneous and deep soft tissue fat show the same abnormal signal characteristics as the bone marrow (Boutin RD et al. MRI findings of serous atrophy of bone marrow and associated complications. Eur Radiol. 2015; 25(9):2771–8).


Interpreting MRI bone marrow changes in cachectic patient is challenging. SABM...


Conclusions

SABM is characterized by fluid-like serous replacement of fatty marrow components, resulting in the inability for MRI to suppress fat marrow. The atypical MRI appearance of SABM may be misinterpreted as failed fat suppression. Correlation with clinical history and sequence parameters are useful. Insufficiency fracture may be more difficult to diagnose due to the absence of detectable bone marrow edema.

Conflict of Interest

The authors declare that they have no conflict of interest.

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