Top 5 tips: Idiopathic Inflammatory myopathies

Arthritis Subcommittee

June 2022

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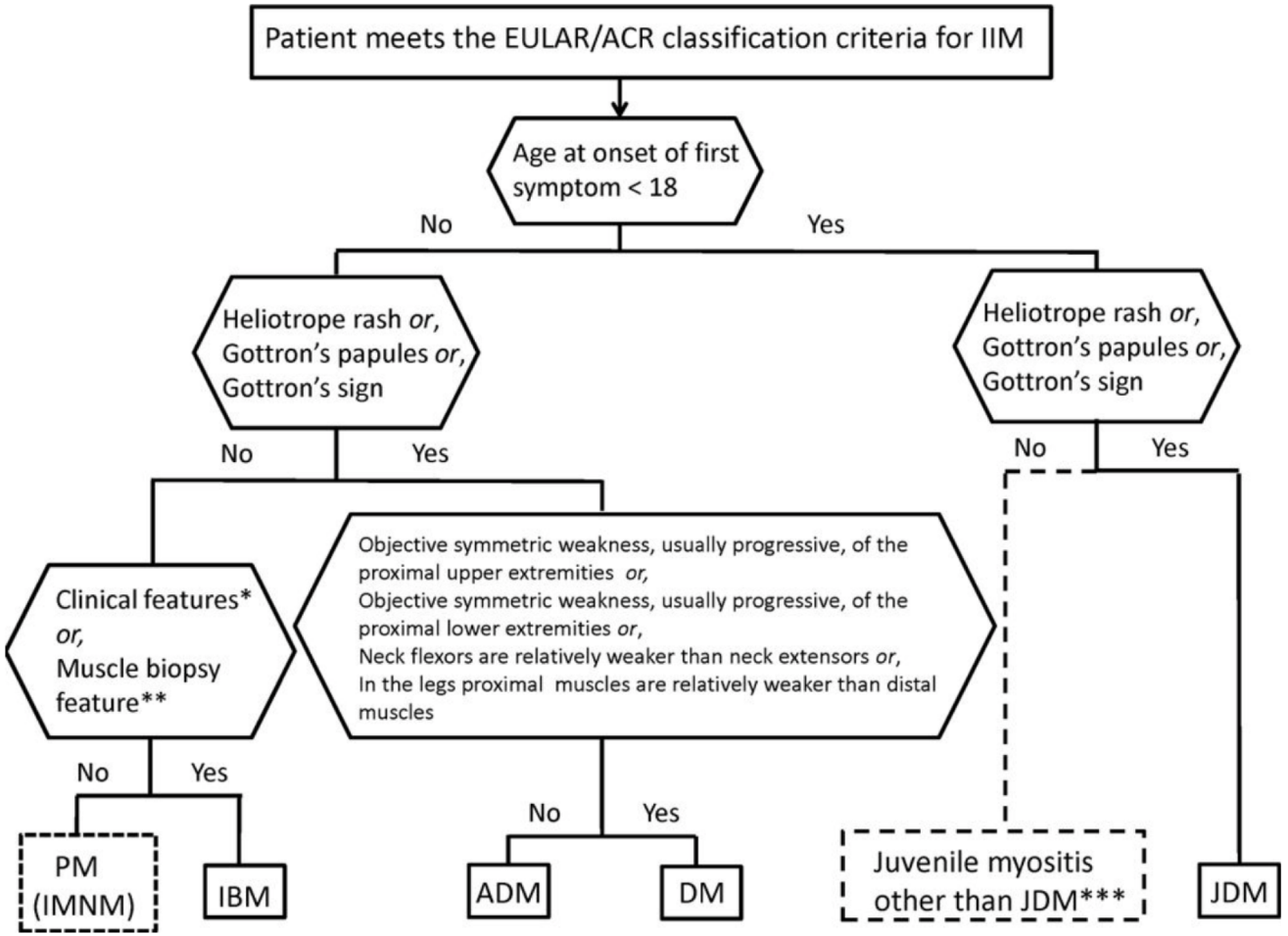
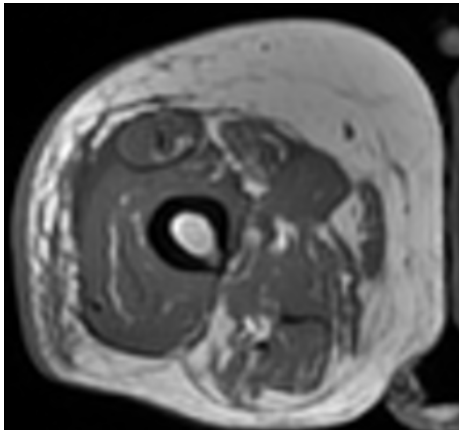
IIM CLASSIFICATION

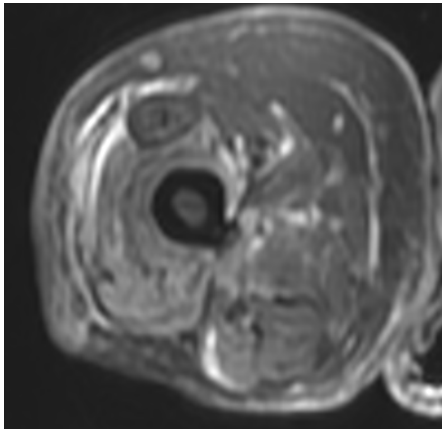


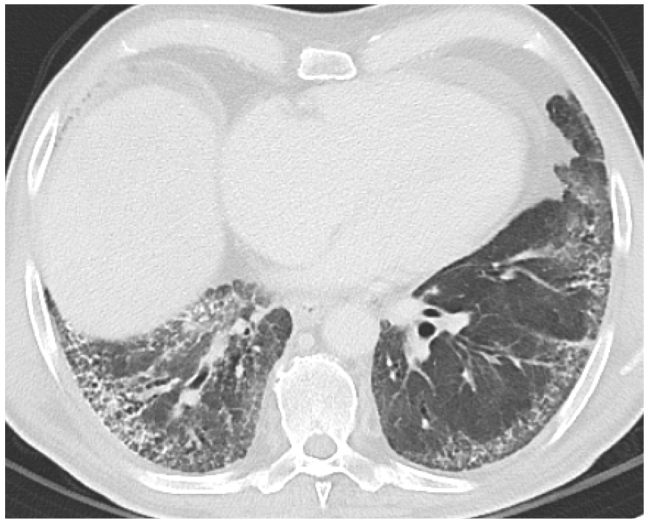
Lundberg IE, et al. EULAR/ACR Classification Criteria for Adult and Juvenile Idiopathic Inflammatory Myopathies and their Major Subgroups . Ann Rheum Dis. 2017 December ; 76(12): 1955–1964

*"*Finger flexor weakness and response to treatment: not improved, or **Muscle biopsy: rimmed vacuoles, is required for diagnosis. ***Juvenile myositis other than JDM was developed based on expert opinion. IMNM and hypomyopathic DM were too few to allow sub-classification.*
PM, polymyositis; IMNM, immune-mediated necrotizing myopathy; IBM, inclusion body myositis; ADM, amyopathic dermatomyositis; DM, dermatomyositis; JDM, juvenile dermatomyositis.'

TIP #1







MR imaging, based on **T1 + STIR or T2 DIXON** (Fat + Water), depicts muscle **edema** and **fatty replacement/atrophy** at diagnosis, may guide biopsies and is useful also to assess the response to treatment. Given the association of IIM with cancer and **interstitial lung diseases**, further imaging (e.g., HRCT, PET/CT) might be considered according to autoantibody profile.

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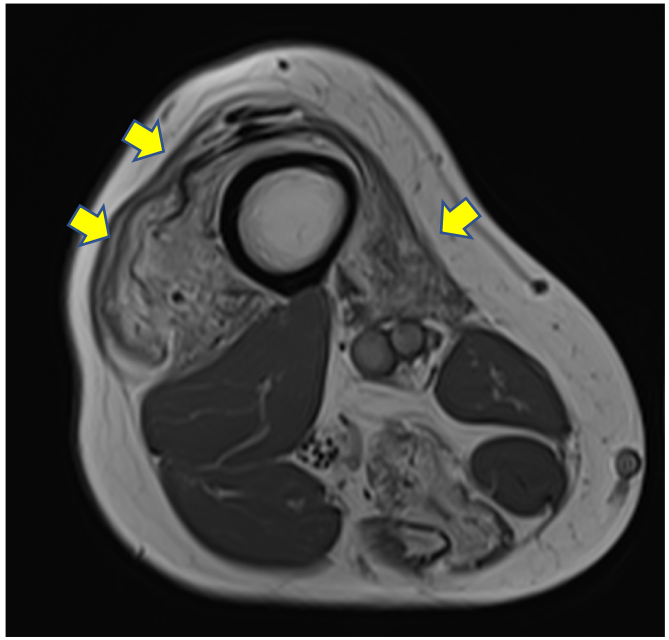
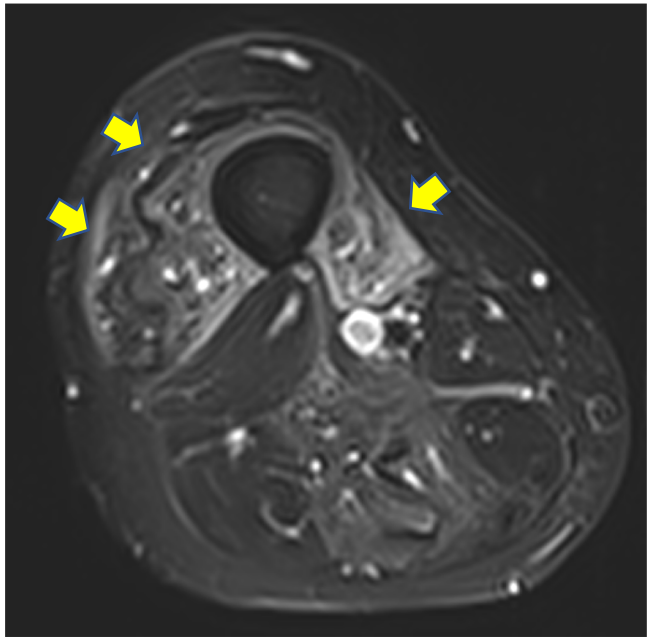
TIP #2





In **inclusion body myositis** the inflammation frequently affects the anterior muscles of the thigh and forearm.

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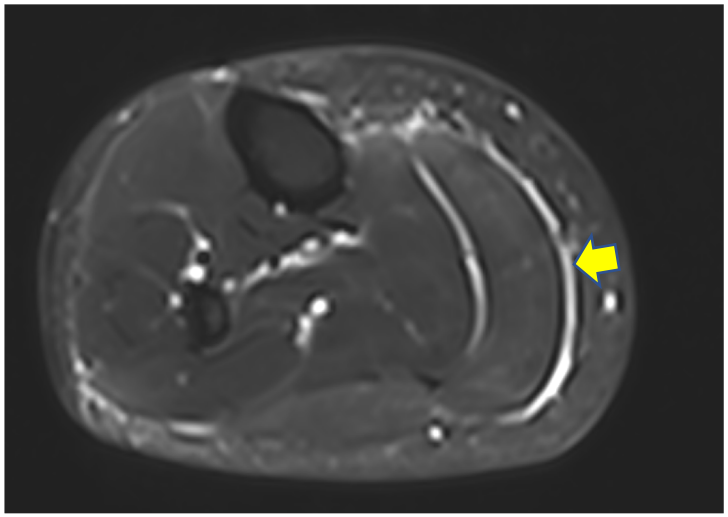
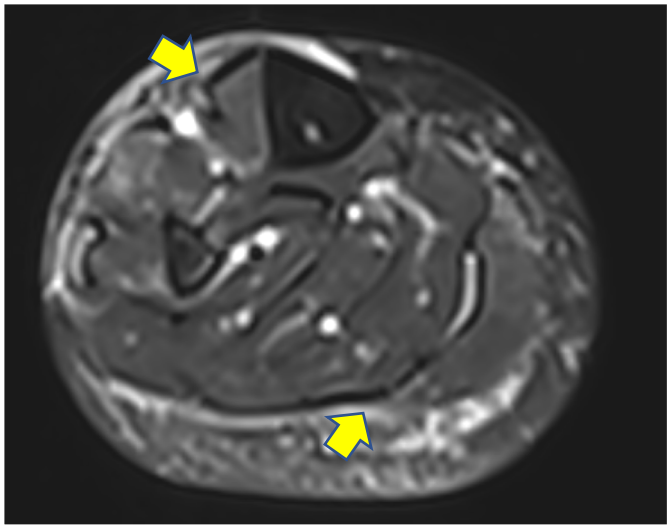
TIP #3





Dermatomyositis is usually characterized by subcutaneous edema, fascial edema, and muscle edema with peripheral distribution.

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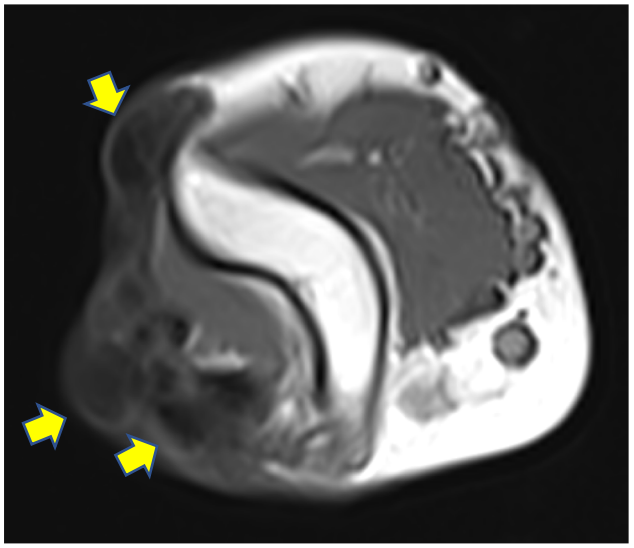
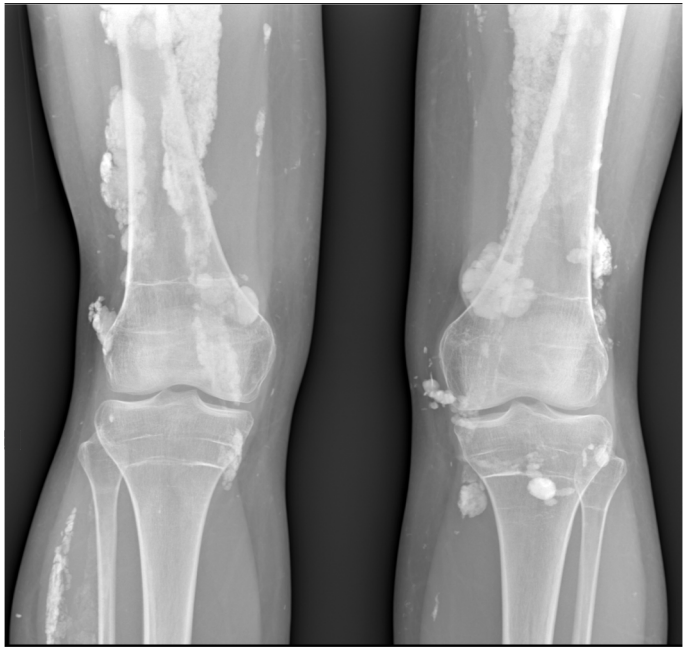
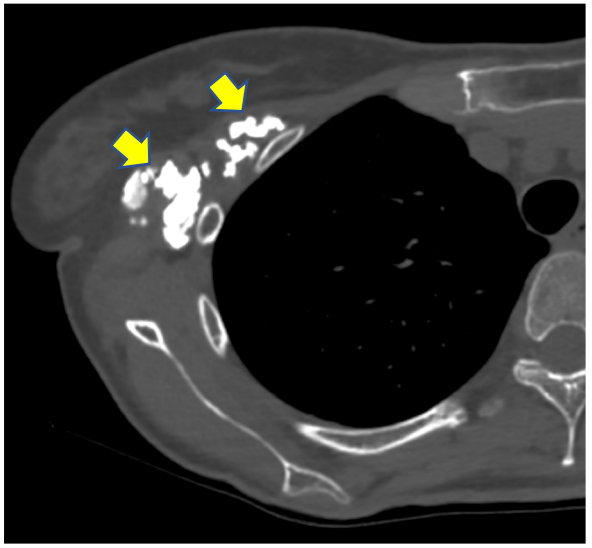
TIP #4







Dystrophic soft tissue calcifications (calcinosis) typically occur in **juvenile dermatomyositis** and most frequently affect elbows, knees, trunk, hands, feet, and head.

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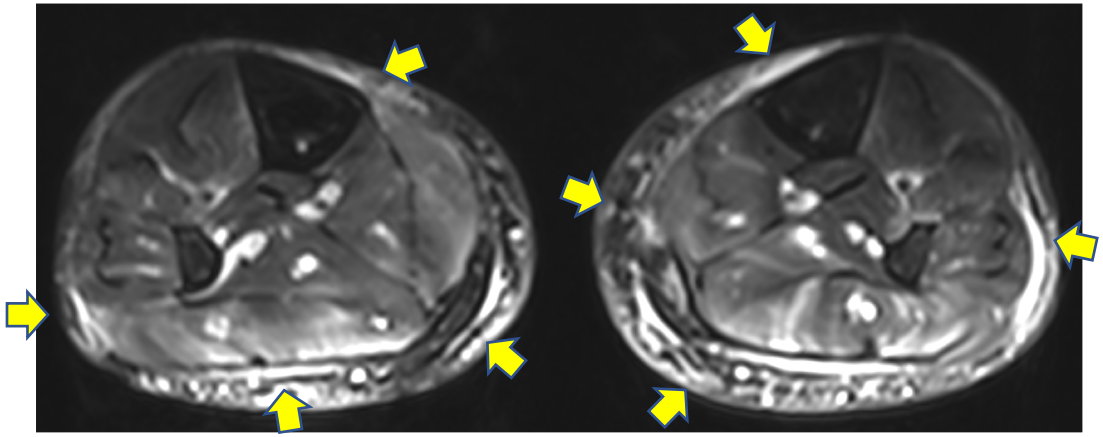
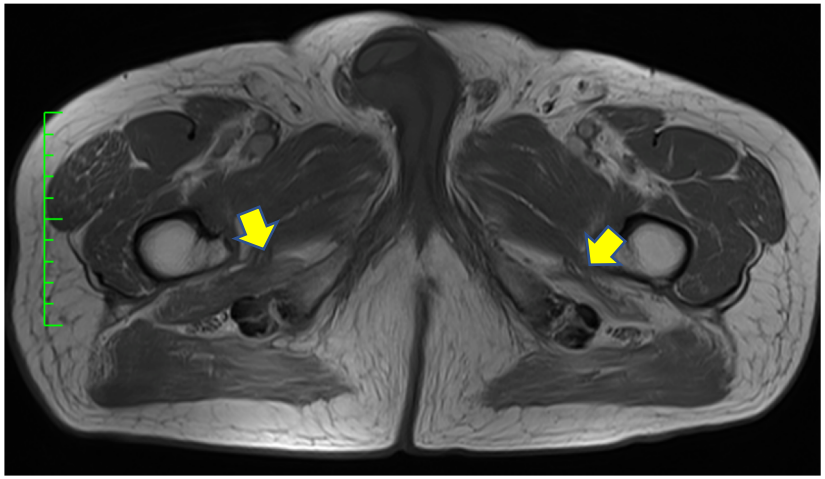
TIP #5





Immune-mediated necrotizing myopathy causes more widespread muscle edema, atrophy, and fatty replacement than dermatomyositis and it might be associated with the use of statins; moreover adductor brevis edema and obturator externus atrophy are especially common.

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References

- Lundberg IE, Tjarnlund A, Bottai M, et al. EULAR/ACR Classification Criteria for Adult and Juvenile Idiopathic Inflammatory Myopathies and their Major Subgroups . Ann Rheum Dis. 2017 December ; 76(12): 1955–1964

- Malartre S, Bachasson D, Mercy G, et al. MRI and muscle imaging for idiopathic inflammatory myopathies. Brain Pathology. 2021;31:e12954.

- Ukichi T, Yoshida K, Matsushima S, et al. MRI of skeletal muscles in patients with idiopathic inflammatory myopathies: characteristic findings and diagnostic performance in dermatomyositis. RMD Open 2019;5:e000850. doi:10.1136/rmdopen-2018-000850.

- Hoeltzel MF, Oberle EJ, Robinson AB, et al. The Presentation, Assessment, Pathogenesis, and Treatment of Calcinosis in Juvenile Dermatomyositis. Curr Rheumatol Rep. 2014 December ; 16(12): 467. doi:10.1007/s11926-014-0467-y.

- Pinal- Fernandez I, Casal-Dominguez M, Carrino JA, et al. Thigh muscle MRI in immune-mediated necrotising myopathy: extensive oedema, early muscle damage and role of anti-SRP autoantibodies as a marker of severity. Ann Rheum Dis. 2017 April ; 76(4): 681–687. doi:10.1136/annrheumdis-2016-210198.

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