Imaging of Sciatic Lymphoma

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Peripheral nerve infiltration in lymphoma is a rare condition. The most common clinical manifestation is painful polyradiculopathy,[1] but presentation can vary, mimicking other common causes of neuropathy. Therefore, diagnosis is often challenging. Here we provide imaging of a 72-year-old woman who presented with right foot drop due to a primary sciatic nerve lymphoma. Neurological examination revealed severe weakness in the distribution of the right common peroneal and tibial nerves, sensory impairment in the sural and deep peroneal nerve distributions, an absent right ankle jerk, and a palpable mass in the posterior lower right thigh. Magnetic resonance imaging (Figure 1) showed a fusiform bilobed mass with a medial necrotic and a lateral solid component, predominantly hypo-isointense to muscle (3.8 x 3 x 10.7 cm) in T1-weighted sequences without and with gadolinium enhancement, and heterogeneous signal in T2-weighted sequences. Diffusion-weighted imaging (DWI) and apparent diffusion coefficient (ADC) sequences showed restricted diffusion with low ADC values (0.8 mm^2/s). Because the diffusivity of water molecules is restricted by high cellularity, these findings suggested increased cellularity[2,3] and malignancy[2].

A computed tomography scan (Figures 2A, 2B), ^{18}fluorodeoxyglucose positron emission tomography (^{18}FDG)-PET (Figures 2C, 2D), and fusion-PET/CT (^{18}FDG)-PET/CT (Figures 2E, 2F) showed increased uptake and enlargement of the right sciatic nerve, including the tibial and peroneal branches. An open surgical nerve biopsy confirmed a diffuse large B-cell sciatic lymphoma. The patient was treated with systemic chemotherapy. After 3 months, no disease progression was evident, but the neurological deficit remained unchanged. Although nerve biopsy represents the gold standard for diagnosis, MRI with functional sequences (DWI and ADC) and PET can play a pivotal role in the early recognition of peripheral nerve lymphoma.

References

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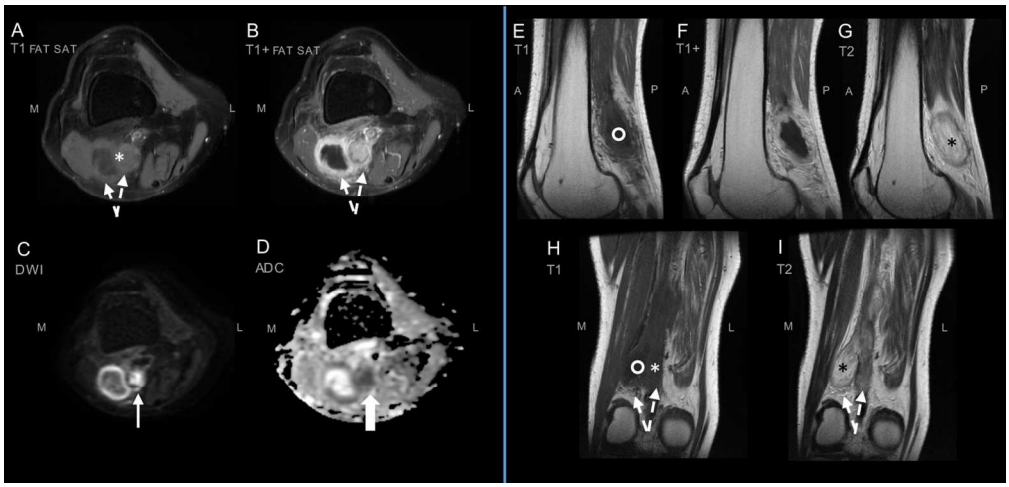
Figure Legends

Figure 1: Note the fusiform bilobed mass (dashed arrows) with a medial necrotic and a lateral solid component, predominantly hypo-isointense (hypointense marked with white circle, isointense with white asterisk) to muscle in axial (A), sagittal (E) and coronal (H) T1-weighted (T1W) MRI sequences. Note abnormal gadolinium enhancement in axial (B) and sagittal (F) postcontrast T1W sequences, and heterogeneous signal (black asterisk) in coronal (I) and sagittal (G) T2-weighted sequences. Diffusion Weighted Imaging (C) shows restricted diffusion (thin arrow) with low values (thick arrow) on Apparent Diffusion Coefficient imaging (D).

Figure 2: CT scan (A, B), ^{18}Fluorodeoxyglucose positron emission tomography (^{18}FDG)-PET (C, D) and Fusion-PET/CT (^{18}FDG)-PET-CT (E and F) showing increased uptake and enlargement of the right sciatic nerve (indicated by arrow in B, D and F and targeted in A, C and E).



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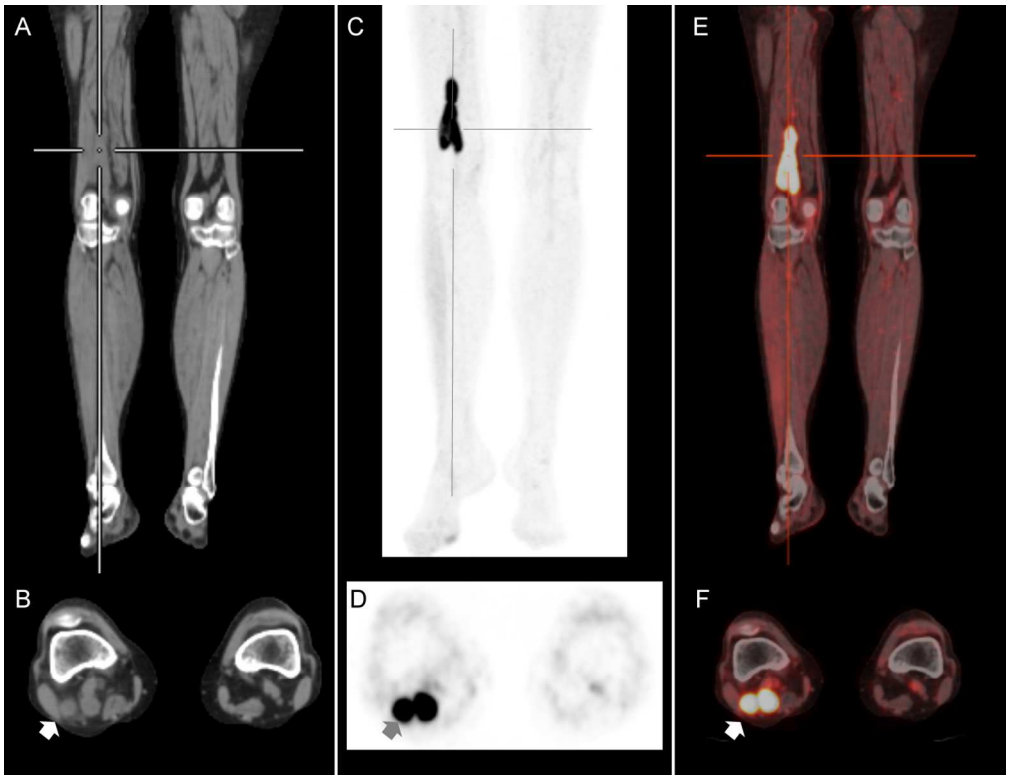

Figure 2: CT scan (A, B), 18Fluorodeoxyglucose positron emission tomography (18FDG)-PET (C, D) and Fusion-PET/CT (18FDG)-PET-CT (E and F) showing increased uptake and enlargement of the right sciatic nerve (arrowed in B, D and F and targeted in A, C and E).

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