A Rare Case of Tolosa-Hunt Syndrome Imaged With FDG PET/CT and MRI

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Abstract: We report on the imaging findings of Tolosa-Hunt syndrome in a 59-year-old patient. Clinical findings included periorbital pain, ptosis, disordered eye movements, and blurred vision. Treatment with intravenous administration of steroid resolved all symptoms. Currently, magnetic resonance imaging plays a key role in the diagnosis of Tolosa-Hunter syndrome for locating the inflammatory tissue and follow-up. This case of Tolosa-Hunter syndrome with representative (FDG PET/CT) images may imply that FDG PET/CT is a useful tool in detecting and monitoring of this disease.

Key Words: Tolosa-Hunt syndrome, FDG PET/CT, MRI

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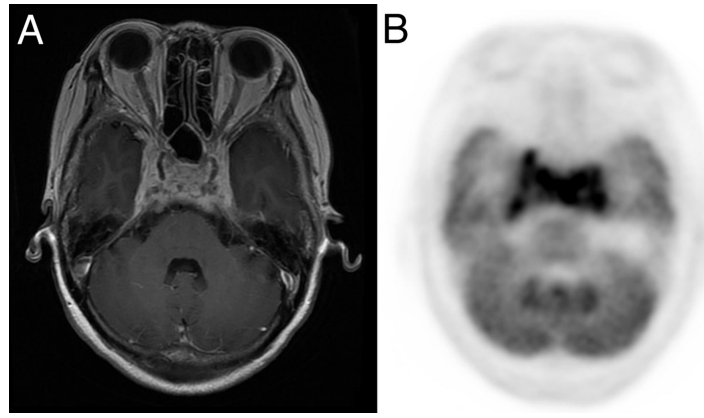

FIGURE 1. A 59-year-old woman presented with periorbital pain and dizziness for more than 10 days. Despite symptomatic treatment with acetaminophen and prochlorperazine, symptoms persisted and aggravated in the following week. Additionally, she presented with ptosis, disordered eye movements, and blurred vision (right third and bilateral sixth cranial nerve palsy). However, computed tomography of the brain did not reveal any lesions. Laboratory testing including complete blood count, serum chemistry profile, serum tumor markers, serum rheumatologic testing, and cerebrospinal fluid analysis was unremarkable except for an elevated erythrocyte sedimentation rate of 41 mm/h (normal range, 0–20 mm/h). Subsequently, magnetic resonance imaging (**A**) showed bilateral cavernous sinus/sella enhancement with extension to right orbital fissure on contrasted T1-weighted images.[1] F-18 fluorodeoxyglucose positron emission tomography and computed tomography (FDG PET/CT; **B**) demonstrated a hypermetabolic lesion in the corresponding area. Thus, the condition was considered to be an inflammatory process and not to be primary/metastatic brain tumor, carotid-cavernous fistula, sinus thrombosis, multiple sclerosis, or central nervous system infection. Thus, the presumptive diagnosis was Tolosa-Hunt syndrome. For that, she was treated with intravenous hydrocortisone (300 mg/d for 5 days) followed by a tapering oral dose with prednisolone 20 mg/d. One week later, she was well and discharged. Four weeks after discharge, she had similar symptoms again. Also, treatment with intravenous administration of high-dose steroid resolved all symptoms. She remained stable for more than 5 months after recurrence. Tolosa-Hunter syndrome is a rare disorder caused by granulomatous inflammatory processes with a typical relapsing-remitting course, characterized by painful ophthalmoplegia, oculomotor paresis, and a dramatic response to corticosteroids.[2–4] The use of corticosteroids has been suggested as a diagnostic test as well as a therapeutic procedure.[5,6] Additionally, there have been a number of other therapies used in treating this condition including methotrexate, mycophenolate mofetil, infliximab, and radiotherapy.[7–10] Currently, magnetic resonance imaging plays a key role in diagnosis of Tolosa-Hunter syndrome for locating the inflammatory tissue and follow-up.[11,12] It is well recognized that FDG PET/CT is helpful to detect inflammatory tissue.[13–16] This case of Tolosa-Hunter syndrome with unique representative FDG PET/CT images may imply that FDG PET/CT is a useful tool in detecting and monitoring of this disease.

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