



A CASE OF PAINFUL HETEROTOPIC BONE OSSIFICATION WITH INTERFERON BETA IN MULTIPLE SCLEROSIS

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INTRODUCTION

Patients with Mutiple sclerosis can have pain due to neuropathy and mechanical complications from early osteoarthritis. Before the 1990s, treatment for multiple sclerosis (MS) largely comprised the management of relapses, primarily with systemic corticosteroids, and short-term management of symptoms. Interferon beta was the first Disease Modifying agent that reduced disease relapses and prevented overuse of steroids by immune modulation. It also helped symptomatically by reducing nerve damage and reducing overall pain burden. Here we present a case of a painful hard mass around the site of interferon injections due to heterotopic bone formation.

CASE PRESENTATION

A 66-year-old male with a history of multiple sclerosis, diagnosed in 1989, hypertension, and hyperlipidemia was referred to the orthopedic clinic in 2022 for a painful right thigh mass and right hip osteoarthritis. He had been injecting interferon beta injections for 12 years. The mass had been present for 8 years now. He used to inject both his thighs, and then he developed a left thigh infection that required irrigation and debridement followed by split-thickness skin grafting in 2013, and since then he only injected his right thigh and lower abdomen. He had plain radiographs showing concern for possible new bone formation in the area.

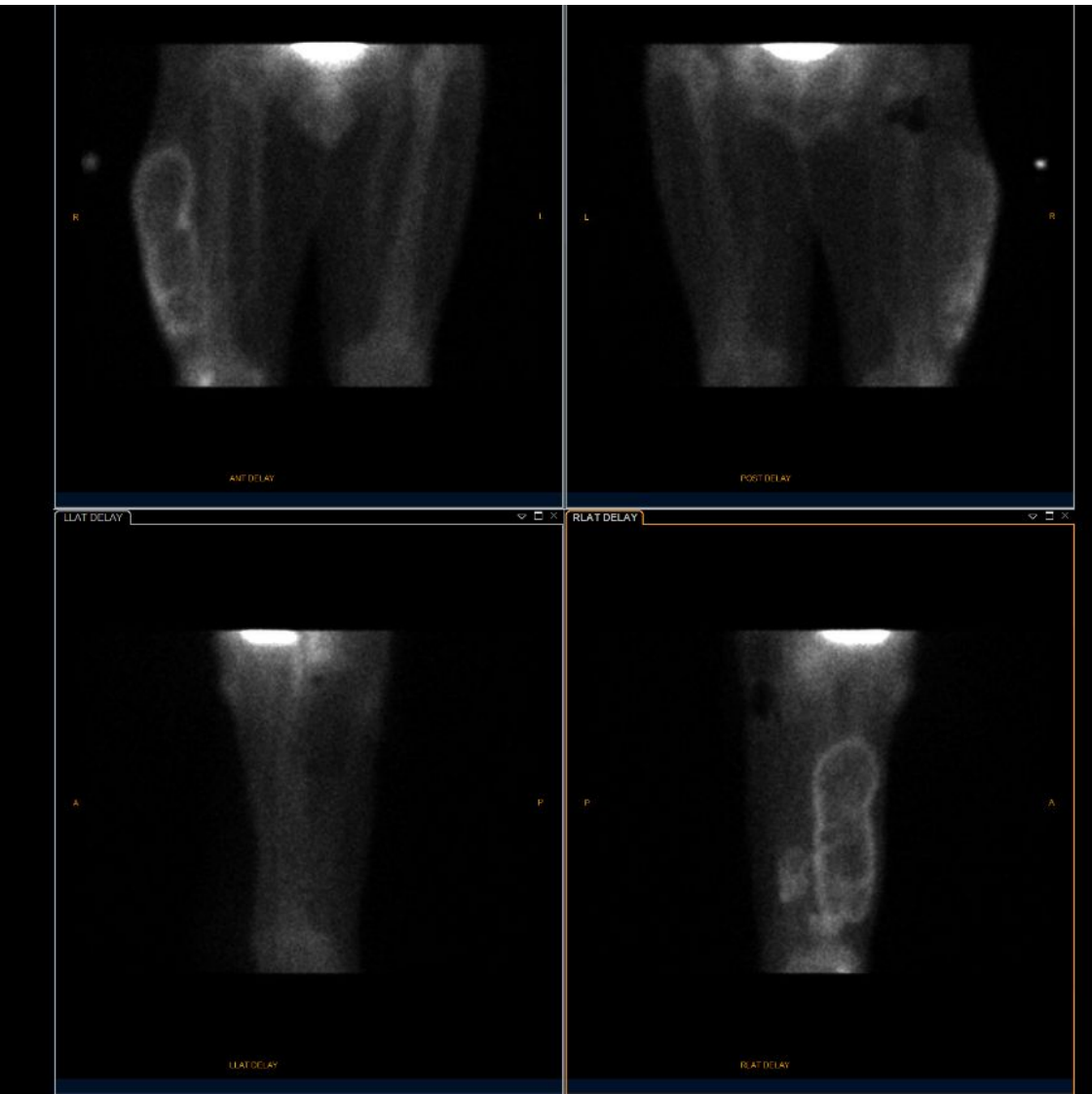
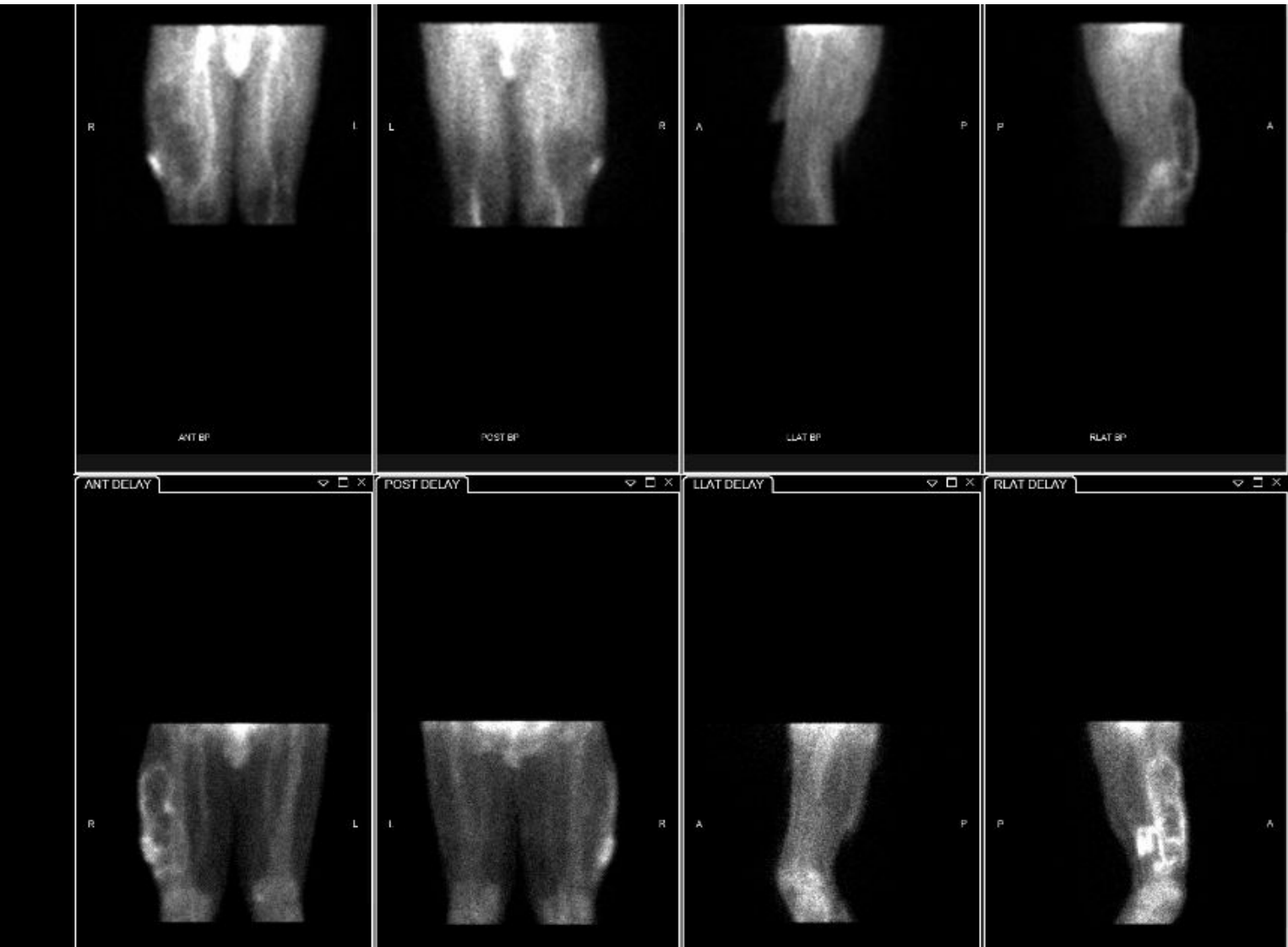
On physical exam, he had a painful mass about 30 cm in length and 15-16 cm breath, and had two other lesions in the abdomen on both sides about 2 cm each. All these lesions were hard and tender on palpation.

He had a bone scan done, which showed areas of calcification adjacent to the large right thigh mass indicating metabolically active bone formation in that area(Figure 1). He had aspirational biopsy of that area done showing necrotic tissue. His blood calcium, phosphorus, parathyroid hormone, Vitamin D, and Procollagen 1 N-terminal propeptide levels were within normal limits.

CASE PRESENTATION

His interferon injections were switched to glatiramer and he no longer injected along the same sites. He was followed serially with orthopedics, endocrine, and neurology clinics. Pain management was also involved, and his pain was better controlled with acetaminophen, short courses of steroids, and as-needed ibuprofen. His pain got better with time and the lesion got softer. He was serially monitored for two years and the lesion remained similar in size, but the character was more soft and less tender to palpation. He underwent a right hip replacement in the meantime.

For his Multiple Sclerosis, his disease remained stable with changing therapies too. A repeat bone scan was done which showed overall decreased bone uptake activity in the area of the mass(Figure 2). We plan to get a biopsy of the area to see if there are any changes, however, with overall stable size, reduced pain, and softer character of the mass, and appearance on bone scan, the plan will be to continue monitoring serially.



DISCUSSION

This case highlights the importance that interferon beta although can reduce the disease activity and is a disease modifying agent for MS, however there is association of interferon with heterotopic ossification, and it can be painful. So far, only a few case reports have mentioned this association(1).

A multidisciplinary team is needed to manage these patients. Most of the lesions are benign and progression is halted with switching therapies. There is some role of glucocorticoids in reducing pain and halting the new bone formation(2).

REFERENCES

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