Rowan University
Rowan Digital Works

May 2nd, 12:00 AM

Pseudogout, A Case of Rejection-Associated Pain

Emily Clark
Rowan University

Ziqian Wang
Rowan University

Follow this and additional works at: https://rdw.rowan.edu/stratford_research_day

Part of the Musculoskeletal Diseases Commons, Pathological Conditions, Signs and Symptoms Commons, and the Pharmaceutical Preparations Commons

Let us know how access to this document benefits you - share your thoughts on our feedback form.

Clark, Emily and Wang, Ziqian, "Pseudogout, A Case of Rejection-Associated Pain" (2024). *Rowan-Virtua Research Day*. 12.
https://rdw.rowan.edu/stratford_research_day/2024/may2/12

This Poster is brought to you for free and open access by the Conferences, Events, and Symposia at Rowan Digital Works. It has been accepted for inclusion in Rowan-Virtua Research Day by an authorized administrator of Rowan Digital Works.

Pseudogout, A Case of Rejection-Associated Pain

Emily Clark, MD[1]

Ziqian Wang, DO[2, 3]

1. Internal Medicine, Inspira Mullica Hill Hospital, Mullica Hill NJ, USA
2. Department of Medicine, Cooper Medical School of Rowan University, Camden NJ, USA
3. Division of Hospital Medicine, Cooper University Healthcare, Camden NJ, USA

Introduction

- Calcium pyrophosphate dihydrate deposition in a joint can present as acute synovitis, known as pseudogout
- This condition has been long associated with hyperparathyroidism, however, its connection with Tacrolimus use has only recently been documented.[1]

Case Presentation

History

- 66-year-old male who presented for evaluation of pain and swelling of his right knee and left ankle, impeding his ability to ambulate. He had a history of a liver transplant for which he was taking 7 mg of Tacrolimus daily for about a year. He was admitted to the hospital to rule out septic arthritis.

Physical Exam

- Swelling and erythema were noted in his right knee and left ankle joints
- Difficulty and pain with ambulation

Investigations

- His calcium was low at 8 mg/dL
- Parathyroid hormone level was elevated to 127 pg/mL
- Alkaline phosphatase level elevated to 121 unit/L
- Tacrolimus level was within goal range 10.3 mcg/L (10-12)

Clinical Course

- The patient was empirically started on broad-spectrum antibiotics in the Emergency Department
- Aspiration of his knee joint space yielded calcium pyrophosphate crystals without evidence of infection (nucleated cell count 20,000, culture had no growth at 3 days)
- Xray of his knee demonstrated moderate chondrocalcinosis of the menisci and a moderate joint effusion
- Antibiotics were discontinued; he was treated with systemic IV methylprednisolone.

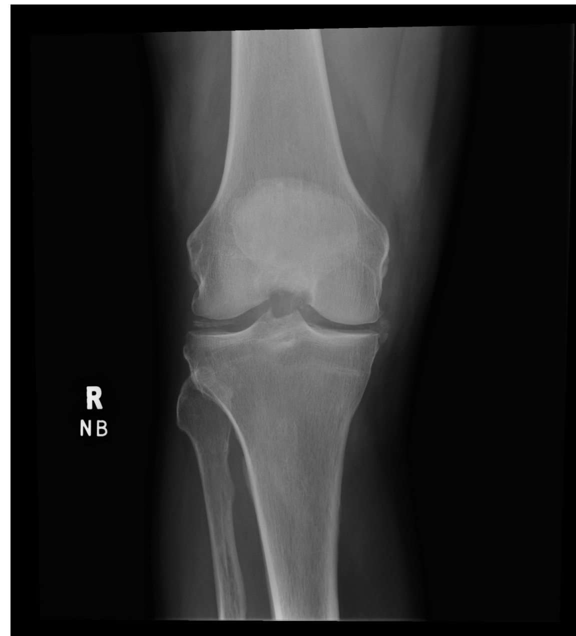

Image 1: Calcium pyrophosphate depositions in the lateral joint space

Discussion

- This is a unique case of a 66-year-old male presenting with pseudogout in the setting of tacrolimus use after liver transplant
- His tacrolimus level was within the goal range for allograft transplant rejection
- Tacrolimus is thought to cause hypocalcemia by increasing calcium excretion at the level of the kidney[2]
- The decrease in serum calcium because of Tacrolimus use is suspected to have caused secondary hyperparathyroidism in this patient, leading to acute calcium pyrophosphate crystal arthritis.

References

1. Cenin DA, Freyer CW, Ligon CB, Luger SM, McCurdy SR, Martin ME, Frey NV. Tacrolimus induced pseudogout following allogeneic hematopoietic cell transplant. J Oncol Pharm Pract. 2021 Apr;27(3):771-775. doi: 10.1177/1078155220951241. Epub 2020 Aug 20. PMID: 32819196.
2. Gratreak, BDK, Swanson, EA, Lazelle, RA, et al. Tacrolimus-induced hypomagnesemia and hypercalciuria requires FKBP12 suggesting a role for calcineurin. *Physiol Rep*. 2020; 8:e14316. https://doi.org/10.14814/phy2.14316