Clinical History:

An elderly patient with a chronic history of myelofibrosis with recent myeloproliferative phase presented to the emergency room with swelling and erythema of the right hand.

Imaging Findings:

Two images of the right hand were obtained in posteroanterior and oblique views. These demonstrate pathognomonic changes of gout with focal thenar swelling, first metacarpal base and trapezium juxta-articular erosions, and overhanging edges. There is a background of diffuse osteopenia.

Discussion:

An elderly patient with a chronic history of myelofibrosis with recent myeloproliferative phase presented to the emergency room with swelling and erythema of the right hand.

Physical examination revealed a swollen, tender, warm, and erythematous right hand with a decreased range of motion. Hematological evaluations demonstrated leukopenia with elevated C-reactive protein and uric acid level.

Two images of the right hand were obtained in posteroanterior and oblique views. These demonstrate pathognomonic changes of gout with focal thenar swelling, first metacarpal base and trapezium juxta-articular erosions, and overhanging edges. There is a background of diffuse osteopenia.

A bone marrow biopsy revealed myeloid precursor with atypical megakaryocytes. This myeloproliferative phase resulted in excessive clonal proliferation, secondary destruction of abnormal platelets, and subsequent uremia.

Gouty arthritis stems from three basic pathways: idiopathic, familial, or high cellular turnover (usually cancer or chemotherapy)[1]. Most common pathophysiology is biochemical derangement of monosodium urate regulation and subsequent deposition within the soft tissue and joints over time leading to juxta-articular erosions [2].

Late manifestations of gout were revealed in hand radiographs in the background of thrombocytosis (with platelet counts over 700, 000/mm3) and elevated chronic uric acid levels (measuring over 12mg/dL).

Prophylactic use of uricosuric agents and xanthine oxidase inhibitors should be considered early to prevent gouty
arthrits in patients diagnosed with lymphoproliferative disorders and elevated uric acid levels [3].

**Differential Diagnosis List:** Secondary gout, Cellulitis, Septic arthritis

**Final Diagnosis:** Secondary gout

**References:**


Dalbeth N, McQueen FM (2009) Use of imaging to evaluate gout and other crystal deposition disorders. Current Opinions in Rheumatology 21:124-131

Figure 1

Description: Posteroanterior view of right hand demonstrates pathognomonic changes of gout with focal thenar swelling, first metacarpal base and trapezium juxta-articular erosions, and overhanging edges. There is a background of diffuse osteopenia. Origin: Department of Radiology, Augusta University, Augusta, GA
Description: Oblique view of right hand demonstrates pathognomonic changes of gout with focal thenar swelling, first metacarpal base and trapezium juxta-articular erosions, and overhanging edges. There is a background of diffuse osteopenia. Origin: Department of Radiology, Augusta University, Augusta, GA
**Description:** Juxta-articular erosions are present of the first carpometacarpal and triscaphe joints. Largest erosion at the base of the thumb metacarpal displays characteristic "overhanging edge" appearance. **Origin:** Department of Radiology, Augusta University, Augusta, GA