Case Report
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Frequent debridement with vacuum assisted closure dressing for severe first metatarsal and metatarsophalangeal joint gouty arthritis as infectious arthritis

Abstract

Introduction: Gout is a common inflammatory arthritis caused by articular precipitation of monosodium urate crystals. It usually affects the first metatarsophalangeal joint of the foot and less commonly other joints, such as wrists, elbows, knees and ankles.

Case presentation: I present the case of a 31 year old male patient Known case of Acute renal failure, with history of recurrent renal stone presented with progressive swelling of right big toe, associated with ulceration. Local examination revealed swelling 8×10×10 cm occupying the distal part of the 1st metatarsal bone as well as the metatarsophalangeal joint. Multiple ulcers with whitish-colored bases were seen scattered over the swelling.

Conclusion: Ulcers due to tophaceous gout are currently uncommon considering the positive effect of pharmaceutical treatment in controlling hyperuricemia. Non-Surgical treatment is an option for gout and Surgical treatment reserved for cases of recurrent attacks with deformities, non functional limb.

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Naif Bin Nwihad
Prince Sattam bin Abdulaziz University, Saudi Arabia

Correspondence: Dr. Naif Bin Nwihadh Al-shahrani BSc (PT), MD, Orthopedic surgeon, Assistant Professor, College of Medicine, Sattam Bin Abdulaziz University, Saudi Arabia, Email nalf1982@gmail.com

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Introduction

Gout is a common disorder of uric acid metabolism, characterized by recurrent episodes of inflammatory arthritis, tophaceous soft tissue deposits of monosodium urate crystals, uric acid renal calculi and chronic nephropathy, I present the case of a 31 year old male patient Known case of Acute renal failure , with history of recurrent renal stone presented with progressive swelling of right big toe suffering from tophaceous gout.

Case presentation

This case was followed up since 2013 to 2018 .He is 31 Year old male patient Known case of Acute renal failure, with history of recurrent renal stone and long-standing history of tophaceous gout and several recurrent episodes of arthritis during the past two years presented with a large, painful, ulcerated tophus located on the first metatarsophalangeal joint of his right foot to our emergency department. With history of six months of right big toe swelling, five days before presenting to the emergency department, a tophus on the first toe of his right foot had become painful, red and swollen (Figure 1). He tried a course of non-steroidal anti-inflammatory drugs (NSAIDs) without improvement. Ten hours before seeking medical assistance, the tophus burst releasing a viscous, cheesy -like material.

On physical examination he had a mild fever of 37.8°C. A greyish, voluminous and ulcerated nodule containing cheesy material was located on the first metatarsophalangeal joint of his right foot. Further examination revealed multiple other tophi overlying the first and second metatarsaophalangeal joints of his left foot. The first metatarsophalangeal joint of his right foot was totally nonfunctional (Figure 2 & 3).

Figure 1

Figure 2

Figure 3

Laboratory workup revealed leukocytosis (15.9/mm^3), elevated C-reactive protein (7.21 mg/dl) and elevated serum uric acid (14 mg/dl). Radiographs of the foot showed soft tissue swelling and total destruction of the first metatarsophalangeal joint (Figure 3). Cultures from the ulcerated tophus were positive (staphylococcus aures). Antibiotic treatment with cefazoline (1g Intravenous every 8 hours/day), and intravenous administration of paracetamol (1g Intravenous every 6 hours PRN) was initiated.

Radiographs of the foot Total destruction of the first metatarsophalangeal joint and soft tissue swelling is shown as is focal involvement of dorsal and plantar surface of the foot (panniculitis)as shown MRI (Figure 4&5).

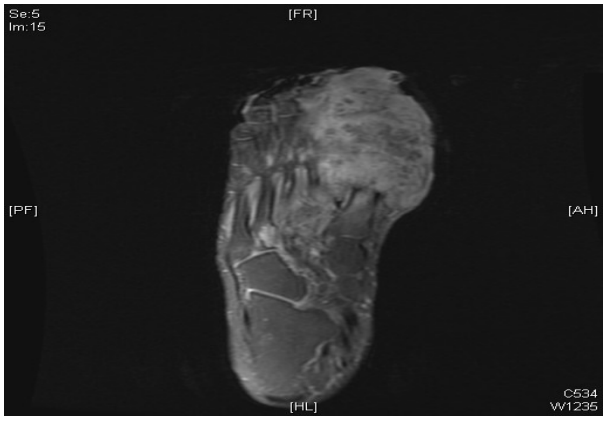

Figure 4

Due to the extraordinary size of the ulcer and the complete destruction of the underlying joint, amputation of the right foot was considered. However, before resorting to this solution, a surgical debridement with lavage of the joint was performed (Figure 6). Debridement was also performed on the minor ulcers. Five days after admission treatment with allopurinol (300 mg/day) was initiated and Uric acid normalized and infection was controlled. The WBC and CRP return to normal level. The patient underwent multiple irrigation and debridement then negative–pressure wound therapy (NPWT) was applied with many times change, after that wound improved and I closed it with nylon.

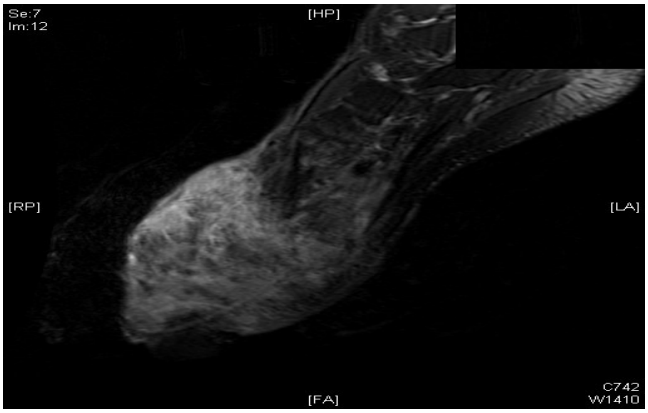

Figure 5

Figure 6

On an outpatient basis follow up, while efforts were made to keep serum uric acid levels within normal limits. ulcers healed completely within 14 days after initial presentation and bone of the first metatarsophalangeal joint grow up (Figures 7–12) again patient can walk on his Right foot normally. 3 months after treatment, he remains symptom free, and on 2018 follow up the radiography show Figure 13 & 14.

Figure 7

Citation: Nwihad NB. Frequent debridement with vacuum assisted closure dressing for severe first metatarsal and metatarsophalangeal joint gouty arthritis as infectious arthritis. *MOJ Orthop Rheumatol.* 2018;10(6):377–381. DOI: 10.15406/mojor.2018.10.00453

Figure 8

Figure 9

Figure 10

Figure 11

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Figure 12

Figure 13

Figure 14

Discussion

Gout is a frequent form of arthritis.[1] Gout most commonly affects peripheral structures of the foot and ankle with a propensity for the first metatarsophalangeal joint and Achilles tendon.[2] It is characterised by tissue deposition of monosodiumurate crystals as a result of hyperuricaemia, which can lead to acute attacks of gouty arthritis or formation of tophi[3] mostly of the first metatarsophalangeal joint (podagra).[4] The cells interacting and responding to crystals are leukocytes, in particular neu-trophils and macrophages, but also en-dothelial cells, synoviocytes and mast cells.[5] Obesity is an important risk factor for development of gout.[6] The increasing prevalence of gout worldwide indicates a need for improved effort to identify these patients early in the disease process.[1] Most people with gout experience acute 1MTPJ arthritis at some point during the course of the disease.[7] Moreover, there were increased reports of unusual concomi-tant gout and infection such as septic arthritis and necrotizing fasciites in that area.[8] People with gout experience flares of severe inflammtory arthritis as a response to the presence of urate crys-tals deposited in joints and soft tissues.[3,4] gouty involvement of the axial skeleton is usually asymptomatic and typical radiological findings, such as erosive change and tophi, appear after several years.

Acknowledgment

None.

Conflicts of interest

None.

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