Untreated tophaceous gout

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Marina P Okoshi**

ABSTRACT

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CASE REPORT

A 59-year-old male was hospitalized with heart failure. He had presented progressive dyspnea for two years and lower limb edema for six months. Despite severe symptoms, he had not been previously treated. His medical history was remarkable showing smoking and alcohol consumption since the age of 12 and hyperuricemia and gout diagnosed 18 years ago. He reported no regular medication or dietary restriction. Gout initially manifested as acute monoarticular arthritis in hand and foot joints. Colchicine and xanthine oxidase inhibitor allopurinol were prescribed but taken irregularly, mostly during acute attacks when he also took nonsteroidal anti-inflammatory drugs. Over the last 10 years he had had gout crises at least once a month, with polyarticular involvement progressing to chronic tophaceous gout. Physical examination revealed multiple tender subcutaneous nodules in the ears and periarticular structures of the hands, feet, knees, ankles, and elbows. Serum urate was 11.6 mg/dL (660 μ mol/L), creatinine 2.8 mg/dL (247 μ mol/L), and thyroid function was normal. Laboratory investigation revealed left ventricular ejection fraction of 0.24 and severe obstruction of the coronary

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Received: 04 July 2013

Accepted: 30 July 2013

Published: 01 January 2014

Figure 1: (A) Nodules located in elbow and, (B) Proximal interphalangeal joint.

arteries and left renal artery. As the patient declined surgery, heart failure was controlled clinically. He was discharged receiving carvedilol, digoxin, acetylsalicylic acid, and simvastatin. He was also prescribed allopurinol and advised to avoid alcohol, excessive meat or seafood consumption, and sugar-sweetened drinks which can lead to increased urate levels [1, 2].

DISCUSSION

Gout is associated with hyperuricemia and characterized by inflammatory arthritis induced by monosodium urate crystal deposition in synovial fluid and other tissues. Tophi can occur in soft and osseous tissue, ligaments, and different organs, either in presence or absence of gouty arthritis [3–5]. If left untreated, hyperuricemic patients (serum urate level ≥ 6.8 mg/dL or $400 \mu\text{mol/L}$) can evolve from intermittent arthritis to polyarticular tophaceous gout with symptoms between attacks. Lowering serum urate levels with xanthine oxidase inhibitors or uricosuric agents prevents acute flares and tophi development. Synovial fluid crystals slowly dissolve and can disappear after normalization of serum urate levels [6]. Uricosuric agents are, generally, ineffective in patients with renal impairment. The recommended target serum uric acid concentration is <6 mg/dL ($357 \mu\text{mol/L}$) [1, 2]. Although controversial, recommendations have been made to achieve a target serum urate level <5 mg/dL ($297 \mu\text{mol/L}$) in severe chronic gout patients, as this concentration may be associated with greater depletion of synovial fluid crystals and a reduction in tophus size [1, 7]. Therapy is usually continued indefinitely. Several urate-lowering agents are currently under clinical investigation. These include uricase agents and inhibitors of renal urate transporter proteins [7]. Interventions which enhance patient education and treatment adherence are considered important in improving gout management [7].

For a long time, reference has been made to the link between serum urate levels and hypertension, obesity, metabolic syndrome, chronic kidney disease, heart failure, and cardiovascular events. However, there is still limited evidence of a causal relationship [8].

CONCLUSION

The key learning element in this case is the importance of chronically treating patients with acute gout attacks to avoid progression to tophaceous gout and systemic complications.

How to cite this article

Assuncao PM, Giampietro RR, Paiva SAR, Okoshi MP. Untreated tophaceous gout. International Journal of Case Reports and Images 2014;5(1):89–91.

doi:10.5348/ijcri-2014-01-447-CL-20

Author Contributions

Paola M Assuncao – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Final approval of the version to be published
Rodrigo R Giampietro – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Final approval of the version to be published
Sergio AR Paiva – Substantial contributions to conception and design, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Marina P Okoshi – Substantial contributions to conception and design, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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ACKNOWLEDGEMENTS

The authors thank CNPq, Brazil, for financial support, and Colin Edward Knaggs for English editing.

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