

A MIDDLE-AGED MAN WITH PAIN AND SWELLING OF THE HANDS

Esha Das Gupta *FRCP*, International Medical University

Address for correspondence: Associate Professor Esha Das Gupta, International Medical University, Jalan Rasah, 70300 Seremban, Negeri Sembilan Darul Khusus, Malaysia. Tel: 06-7677798, Fax: 06-7677709, Email: eshadas_gupta@imu.edu.my

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Mr RA a 48-year old Malay mechanic came with the complaints of pain and swelling of the hands. He gave no history of early morning stiffness. But he complained of occasional acute onset of pain in other joints. He admits to have hypertension for past eight years. Mr RA had a past history of injury to his right index finger, which had to be partially amputated.

Questions

1. What are the abnormalities seen?
2. What is the diagnosis?
3. What is your management?

Figure 1.



Figure 2



Answer

Mr RA has chronic tophaceous gout. The swellings around the knuckles and on both index fingers are tophi (Figure 1). Terminal phalanx of right index finger is amputated. He also has tophi over lateral malleolus of right foot (Figure 2), olecranon bursa (Figure 3) and helix of the pinna (Figure 4). When they are on the dorsum of the hand, they may be confused with the tendon xanthoma or ganglion. It is then advisable to look for chalky material within the swelling (as in gouty tophus) or fixity to the tendons (which occur in tendon xanthoma).

Figure 3



Figure4



Figure 5



Gout is a disorder of uric acid metabolism characterised by hyperuricaemia and deposits of uric acid crystals in and around the joints causing pain and arthritis. The stages of the disease are as follows: asymptomatic hyperuricaemia, acute gout, chronic tophaceous gout, urate nephropathy and uric acid nephrolithiasis. With repeated gout attacks, however, the lysosomal enzymes destroy cartilage and erode the joint. Many patients will have a long duration between 2 attacks. If untreated, the duration of time from initial attack to development of chronic symptoms or tophi is, on average, 10 years. Tophi are more common in patients with serum urate level >9 mg/dL ($535 \mu\text{mol/L}$).

Management chronic tophaceous gout is similar to those patients with frequent gouty attacks.

- Allopurinol, a xanthine oxidase inhibitor, prevents uric acid production. It can be given in a single daily dose of 300 mg (average effective dosage for patients with normal renal function). Allopurinol should be used at the lowest dose that lowers the serum urate level below 6 mg/dL ($357 \mu\text{mol/L}$). This most often achieved with doses of 300 mg per day, but a

maximum of 800 mg can be used. The sudden lowering of serum urate concentrations with initiation of allopurinol therapy may trigger acute gout attacks. Hence it is best to start allopurinol after 2 weeks after an acute attack. There is *no need* to withdraw allopurinol if a patient develops an acute gouty attack while still on allopurinol.

- Side effects from allopurinol include rash, gastrointestinal problems, headache, urticaria and interstitial nephritis. The most feared adverse reaction is hypersensitivity syndrome associated with fever, bone marrow suppression, hepatic toxicity, renal failure and a systemic hypersensitivity vasculitis.²
- Formation of tophi can be prevented with allopurinol therapy and established tophi will often gradually shrink and may ultimately disappear on allopurinol therapy.
- Small daily doses of colchicines (0.5-1.5 mg/day) as prophylaxis to prevent acute attacks is helpful in up to 85% of patients.
- Uricosuric drugs such as sulfinpyrazone and probenecid help to excrete uric acid.
- Lifestyle modification with low purine diet along with the about drug treatment helps to reduce the sizes of the tophi.
- For cosmetic purposes residual tophi can be surgically removed.

Further readings

1. Harris: Kelley's Textbook of Rheumatology, 7th ed. Saunders, 2005
2. Arellano F, Sacristan JA. Allopurinol hypersensitivity syndrome: a review. *Ann Pharmacother.* 1993;27(3):337-43 [[PubMed](#)]
3. Yu TF, Gutman AB. Efficacy of colchicine prophylaxis: prevention of recurrent gouty arthritis over a mean period of five years in 208 gouty subjects. *Ann Intern Med.* 1961;55:179 [[PubMed](#)]
4. Keith MP, Gilliland WR. Updates in the management of gout. *Am J Med.* 2007;120(3):221-4. [[PubMed](#)]
5. Prodigy Guidance – Gout. Prodigy, United Kingdom. 2005. [[Full text](#)]