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Tophaceous gout presenting as a dorsal nasal lump

J P Hughes, MRCS(Eng), DOHNS*, Silvana Di Palma, MD†, J Rowe-Jones, FRCS(ORL)*

Abstract

A literature review reveals that gout has been described as affecting many sites in the head and neck region, both in the arthritic and tophaceous form. Gout can often mimic malignancy or infection, and has been described as causing acute airway problems requiring emergency tracheotomy. Here we describe the first published case of tophaceous gout affecting the soft tissues overlying the nasal bones. The patient presented with a bony, hard, dorsal hump and requested aesthetic rhinoplasty.

We also describe an endoscopic technique for removal of tophi using a powered microdebrider system with a protected burr head. Endoscopic powered microdebrider blade excision of tophi affecting the limbs has already been described, with reduced complications when compared with conventional curettage and debridement techniques. This is the first such application to the nose.

Key words: Gout; Nasal Surgery; Endoscopic

Introduction

Gout is an abnormality of uric acid metabolism as a consequence of an overproduction or, most commonly, under-excretion of purines. The resulting hyperuricaemia leads to deposition of monosodium urate crystals in the joints and soft tissues, causing arthritis and tophi. Neutrophils ingest the crystals and initiate an inflammatory reaction, causing recurrent intermittent attacks of gouty arthritis; followed by the development of tophaceous gout as a result of a long-term failure to control high urate levels.[1]

Gout has a prevalence of 9.5 per 1000 women and 16.4 per 1000 men in England.[2] Reported risk factors include age, alcohol consumption, hypertension, renal impairment, obesity, diuretics and a positive family history.[3]

The disease most commonly affects the first metatarsophalangeal joint. However, there have been diverse manifestations described in the head and neck region[4] including involvement of the cricoarytenoid, sternoclavicular and temporomandibular joints.[1] Tophaceous gout commonly affects the outer helix of the pinna,[5] but has also been reported as affecting the arytenoid cartilages,[6] thyroid cartilage,[7] vocal folds,[8,9] hyoid bone[10] and tongue.[11]

The diagnosis of gout is made by the identification of monosodium urate crystals in either synovial fluid or in a tissue specimen.

Surgical interventions are best avoided due to the high incidence of complications, resulting from difficulty in removing the firm tophi and surrounding fibrotic tissue.[3] However operative intervention may be indicated if there is infection, ulceration, or a need for pain control,[4] as well as for cosmesis.

We describe the first case of tophaceous gout affecting the nasal subcutaneous tissues and the successful use of an endoscopic approach for excision with a powered burr.

Case report

A 45-year-old man presented with a two-year history of a gradually enlarging, painless, hard swelling over his left nasal bone (Figure 1). He denied previous nasal trauma or intranasal symptoms. His past medical history included hypertension, hyperlipidaemia and a 10-year history of gouty arthritis affecting his right first metatarsophalangeal joint. His medications included Atenolol, Atorvastatin and Allopurinol. His body mass index was 24.2 kg/m^2 and he consumed 30 units of alcohol a week.

Surgery was indicated to enable diagnosis, as well as restoration of normal nasal aesthetics.

Intranasal transfixion and inter-cartilaginous incisions were made and sub-superficial musculo-aponeurotic system (SMAS) elevation of soft tissues performed to the radix. A 0º Hopkins rod endoscope was introduced to reveal a bony, hard swelling over the left nasal bone extending into the plane between the upper lateral cartilage and the bone. A Medtronic Straightshot® Magnum® II handpiece and Tardy MicroBur® (Medtronic Ltd, Suite One, Sherbourne House, Croxley Business Centre, Watford, WD18 8WW, UK) were used at 6000 rpm with saline irrigation. The outer surface of the lump was drilled away to reveal a friable mass of dry, white tissue. This left a concave impression on the outer surface of the upper lateral cartilage, which was removed with gentle blunt mobilization, dissection and suction. The sample was submitted for histology and the incision closed with a 5/O monocryl suture. The patient was discharged with co-amoxiclav 625 mg tds for one week.

A formalin-fixed and haematoxylin and eosin (H&E)-stained sample revealed dispersed circumscribed homogenous crystalline-like deposits surrounded by histiocytes and multinucleated giant cells of foreign body type, consistent with tophaceous gout (Figure 2).

On review in clinic six months later, he had a good cosmetic result, with no signs of recurrence (Figure 3).

From the *Departments of Otorhinolaryngology, Head & Neck Surgery/Facial Plastic Surgery and †Pathology, The Royal Surrey County Hospital, Guildford, Surrey, UK.
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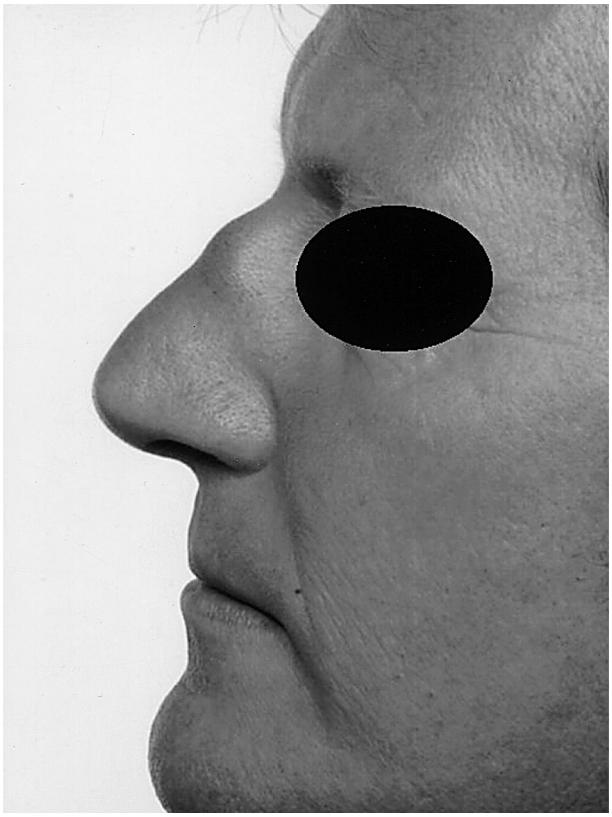

FIG. 1
Pre-operative left lateral facial view showing the dorsal nasal lump.

- **This paper describes a patient with a gouty tophus over the nasal dorsum that was removed using an endoscopic approach and a powered instrument with a specialized shaving blade**
- **This is the first such case in the literature**

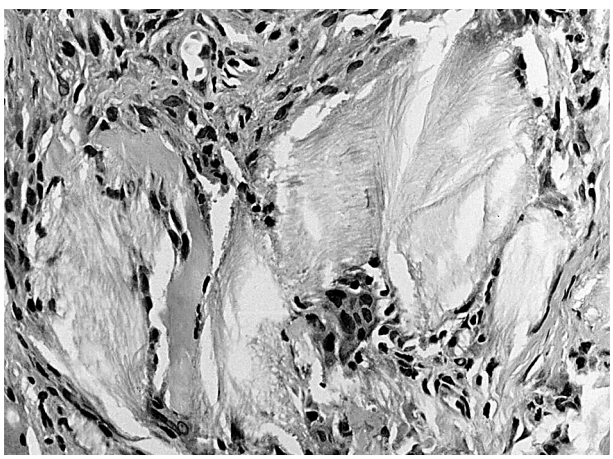

FIG. 2
Histology shows circumscribed homogenous crystalline-like deposits surrounded by histiocytes and multinucleated giant cells of foreign body type consistent with tophaceous gout.

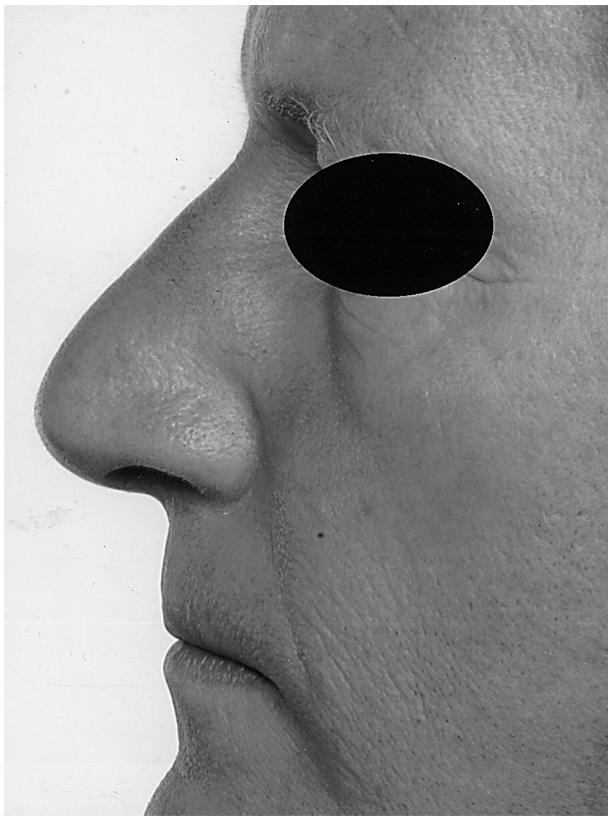

FIG. 3
Post-operative left lateral facial view showing restoration of normal nasal aesthetics.

Discussion

A review of the world literature reveals that although tophaceous gout has been described affecting many sites in the head and neck region, its manifestation in the soft tissues of the nose has not been documented.

Conventional techniques of manual curettage and debridement of joint and limb tophi have been shown to be problematic and have often been shown to produce undesirable results with high rates of complications and inadequate clearance.[3] It has been found that the use of a soft-tissue shaving system, more commonly used in the fields of arthroscopic and endoscopic sinus surgery, can reduce this complication rate and deliver improved results for tophi excision affecting the limbs.[3] In the current case, an endoscope was used to enable accurate visualization and localization of the lump and this allowed precise surgical management with minimal tissue dissection. We feel that the use of an osteotome or rasp would not have allowed such an accurate reduction of the abnormal tissues. We did not feel that use of a microdebrider blade (as opposed to the burr used here) was necessary as the tophaceous material was not adherent to surrounding tissues, and its use would have resulted in unnecessary tissue injury.

Acute gouty arthritis can be precipitated by surgery and therefore peri-operative colchine is recommended.[5] The development of tophaceous gout itself represents a chronic failure to control plasma urate and, therefore, post-operative risk factor modification and medical therapy needs to be maximized to prevent recurrence and further surgery.[4]

In conclusion, we describe the first documented case of nasal tophaceous gout removal with a powered microdebrider under endoscopic control.

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Address for correspondence:
Mr J P Hughes,
19 Hazledene Road,
Chiswick,
London W4 3JB, UK.

Fax: 020 8869 2964
E-mail: jph@dr.com

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