

Laryngeal gout

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Abstract

A review of the literature reveals only 12 reported cases of laryngeal gout. We describe three further cases of laryngeal gout, the largest series ever published. The first case is previously undescribed acute gouty cricoarytenoiditis resulting in acute airway embarrassment requiring tracheotomy, and then we describe two cases of chronic tophaceous involvement of the thyroid lamina with computed tomography (CT) images of this process. The paucity of literature on this subject may not only be due to rarity but also lack of clinical awareness. Gouty involvement of the larynx must be considered in any patient with a history of gout who presents with hoarseness, odynophagia, dysphagia, stridor or neck lump.

Acute airway compromise may require tracheotomy, whereas chronic airway problems may necessitate endoscopic tophi removal, lateralization procedures or even permanent tracheostomy.

Key words: Laryngeal Diseases; Gout

Introduction

Gout is a crystal deposition disease whereby monosodium urate monohydrate crystals are deposited in previously normal tissues eliciting acute inflammation. This may progress to chronic tophaceous gout. Diverse manifestations of the disease occur in the head and neck region. The classic site of the involvement is the external ear, with chronic tophi developing in the external rim of the helix. In addition, tophi of the intervertebral discs,¹ oropharynx,² cartilages of the neck,^{2,3} and tongue⁴ have been described.

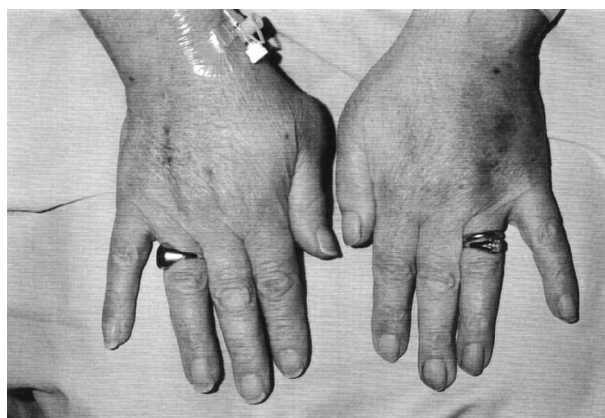
Laryngeal gout is extremely uncommon with only 12 cases reported in the world literature.^{5–16} The natural history of the disease within the larynx parallels that seen within other sites of the body. This is specifically, acute inflammation of the cricoarytenoid joints progressing to ankylosis, and chronic deposition of urate within the soft tissues and cartilages of the larynx.

To illustrate this range of pathology we describe three cases of laryngeal gout. Firstly, previously undescribed acute gouty cricoarytenoiditis resulting in acute airway embarrassment requiring tracheotomy, and secondly, chronic tophaceous involvement of the thyroid lamina with CT images of this process are presented.

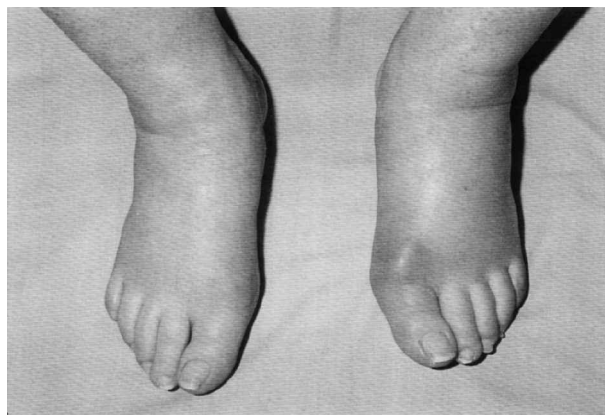
Case reports

Case 1

A 69-year-old male patient had a two-year history of gout. He presented to the accident and emergency department with a six-hour history of increasing difficulty in breathing, aphonia and pain in the neck radiating to both ears. Three days earlier he had started with an acute exacerbation of gout. On examination he had chronic tophi of his ears, swollen tender first metatarsophalangeal joints, and first metacarpophalangeal joints (Figure 1). He had marked biphasic stridor and flexible nasendoscopy revealed swollen mucosa over the arytenoids and posterior com-



(a)



(b)

FIG. 1

Photographs of (a) hands and (b) feet showing acute exacerbation of arthritis affecting first metatarsophalangeal and first metacarpophalangeal joints.

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missure. Both vocal folds were immobile and in the paramedian position. The patient was intubated in theatre and a tracheotomy performed. Direct laryngoscopy confirmed the original findings and a biopsy of the swollen mucosa was taken. This later showed non-specific acute inflammatory changes.

Haematological indices were normal apart from a raised erythrocytes sedimentation rate of 54 mm/hr, and biochemical investigations revealed a massively raised serum urate at 0.84 mmol/l (Normal value 0.15–0.38 mmol/l).

The patient was treated with intravenous hydrocortisone 200 mg b.d. for a period of two days together with colchicine 500 micrograms t.d.s. to good effect. Over a period of two weeks, there was complete resolution of the inflammation and his laryngeal function returned to normal. The patient was decannulated and discharged to out-patient review.

Case 2

A 54-year-old male with a seven-year history of gout, initially presented with acute arthritis of the distal interphalangeal joint of the right middle finger. This was subsequently well controlled with allopurinol. He was referred to the neck lump clinic, with a four-month history of intermittent pain and swelling over the mid-neck associated with violaceous discolouration of the skin. Since these symptoms he had become aware of a permanent swelling anteriorly in the midline of his neck at the level of the thyroid cartilage. He had no other laryngeal symptoms. Examination revealed a normal-looking internal larynx with direct endoscopy. Palpation of the thyroid lamina revealed an irregular, hard immobile mass to the right of the midline. The patient also had a chronic tophus affecting the distal end of the right terminal pharynx (Figure 2). CT scan of the larynx showed the thyroid cartilage to be disrupted to the left of the midline and irregularly expanded. To the right of the midline there was an excrescence, with calcification of the tip (Figure 3). These appearances were considered in keeping with chronic tophaceous gout.

Over a period of six months, there has been no change in this patient's condition.

Case 3

A 60-year-old man was referred to the ENT clinic. He had known chronic tophaceous gout of the larynx that had flared up and developed into what appeared clinically to be an abscess, bursting through the skin overlying the thyroid cartilage. This was treated initially with co-fluampicil from the general practitioner which resolved the infection.

The patient had no problems with his speech or swallowing. On examination the patient had three palpable tophi affecting the thyroid cartilage, and indirect laryngoscopy was unremarkable. CT of the larynx was organized



FIG. 2

Plain X-ray of right middle finger showing tophus involving end of distal phalanx.

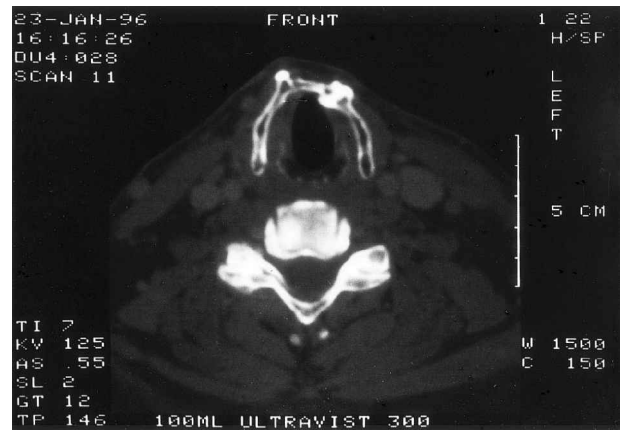


FIG. 3

CT scan of larynx showing gouty involvement of thyroid lamina with destruction of normal architecture and right excrescence.

and the uric acid level was checked. Appearances were consistent with chronic gout and consecutive follow-up was arranged.

Discussion

A review of the world literature shows that laryngeal gout manifests as either chronic involvement of the cricoarytenoid joint or as a tophaceous deposition within the tissues of the larynx. This paper adds further presentations of the disease with acute airway embarrassment and tophaceous destruction of the thyroid cartilage.

An acute gouty arthritis involves the crystallization of supersaturated sodium urate within the joint, causing an acute inflammatory response. The cricoarytenoid joint is a true arthrodiar joint with supportive capsule lined by synovium. As such, it is subject to any of the arthritic processes. Acute inflammation of this joint can give rise to pain within the larynx radiating to the ears, odynophagia, dysphagia, dysphonia or stridor. As the urate deposits gradually destroy the articular cartilage with pannus formation, fibrous ankylosis occurs causing chronicity of the symptoms.^{8,9,13}

With acute cricoarytenoid inflammation and/or fixation the differential diagnosis includes other inflammatory diseases particularly rheumatoid arthritis, systemic lupus erythematosus and relapsing polychondritis. Acute viral or bacterial infections must also be considered, along with allergic conditions such as angioneurotic oedema. Malignancy in the larynx can also present in this way. Post-radiotherapy, and chemotherapy and rare conditions such as myopathies can also give this picture.

Chronic tophaceous deposits can involve the soft tissues and cartilages of the larynx. The first description was by Garrod⁴ in 1863, who reported urate specks on the arytenoid cartilage, followed by Virchow⁵ in 1868 who described tophaceous involvement of the true vocal folds^{6,7,11,12} (that may mimic the appearances of carcinoma)⁷, and it was also described in the laryngeal ventricles,¹⁰ subglottis,¹¹ and cricoarytenoid joint.¹⁶

The mainstay of treatment with gout depends upon the elimination of provoking factors, treating acute exacerbations with colchicine, non-steroidal anti-inflammatory drugs or steroids, and maintenance therapy with allopurinol. For the otolaryngologist, involvement of the larynx may necessitate surgical intervention. Acute airway compromise

may require tracheotomy and more chronic airway problems require endoscopic tophi removal, lateralization procedures or even permanent tracheostomy.

The paucity of world literature on this subject may not only be due to its rarity, but also the lack of clinical awareness and possible underdiagnosis. Gouty involvement of the larynx must be considered in any patient with a history of a gout who presents with hoarseness, odynophagia, dysphagia, stridor or neck lump.

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