INTRODUCTION

Gout usually affects middle-aged to elderly men. Women represent only 5%-20% of all patients with gout, and premenopausal gout is particularly rare. However, anorexic females represent one of the few exceptional subsets.

CASE REPORT

A 34-year-old woman presented with hand swelling and finger pain at our outpatient clinic. She had a history of anorexia nervosa from the age of 17, and had not had any regular menstrual periods from that time. Although she was hospitalized several times for liver dysfunction and urolithiasis in the past, she had not received any medical treatment in recent years. Physical examination revealed erythema and mild swelling in the base of the right thumb. The patient mentioned that she had injured her right hand while cooking a few days earlier. She had a diagnosis of cellulitis and was treated with oral antibiotics for seven days, following which her finger pain was relieved. Four months later, she visited our hospital presenting with the same condition. A dermatologist also diagnosed and treated the condition as cellulitis. Her finger pain was relieved within a few days; however, six months later, the patient visited our hospital presenting with finger pain and nodular lesions on her hands.

On examination, she was afebrile, and extremely underweight with a body mass index was 14.5 (Height: 155 cm, weight: 35 kg). Her blood pressure was 95/52 mmHg, and her pulse rate was 66/min. Multiple small subcutaneous nodules were observed along the ventral creases of her fingers, and the affected finger were swollen and erythematous. Other joints, including the ankles, feet, and knees, were unaffected. Her salivary glands were enlarged. Cardiovascular, respiratory, and gastrointestinal systems were normal. No peripheral edema was observed. A radiograph of the fingers revealed no bone erosion or destruction. Blood analysis revealed renal insufficiency (blood urea nitrogen, 53 mg/dL, serum

We present a case of a 34-year-old woman with tophaceous gout and a history of anorexia nervosa from the age of 17. She presented with recurrent finger pain, which was initially treated as cellulitis. However, multiple subcutaneous nodules developed a year later, and tophaceous gout was diagnosed. Although gout is uncommon in young women, anorexic states carry a risk of hyperuricemia. In addition, the practice of habitual self-induced vomiting and an overuse of laxatives may precipitate gout.

Tophaceous Gout in Anorexia Nervosa

Keiichiro Kita, Maiko Kuroiwa Namie Kawabuchi, Hiroko Nakagaito, Tomoyuki Koura, Seiji Yamashiro

Department of General Medicine, Toyama University Hospital

We present a case of a 34-year-old woman with tophaceous gout and a history of anorexia nervosa from the age of 17. She presented with recurrent finger pain, which was initially treated as cellulitis. However, multiple subcutaneous nodules developed a year later, and tophaceous gout was diagnosed. Although gout is uncommon in young women, anorexic states carry a risk of hyperuricemia. In addition, the practice of habitual self-induced vomiting and an overuse of laxatives may precipitate gout.

Corresponding Author : Keiichiro Kita, MD, PhD, Department of General Medicine, Toyama University Hospital
E-mail: keikita@med.u-toyama.ac.jp
Received for publication 3 August 2012 and accepted in revised form 6 February 2013
creatinine, 2.2 mg/dL), hyperuricemia (uric acid 14.2 mg/dL), and hypokalemia (2.3 mEq/L). A fractional white substance was obtained from the finger nodules using needle puncture. Compensated polarized light microscopy of the aspirates revealed numerous monosodium urate crystals (Fig. 2). Tophaceous gout was diagnosed, and it was suggested that the previous cellulitis episodes might have been gout attacks. Daily fluid replacement therapy improved her renal condition and decreased serum uric acid levels (serum creatinine 1.2 mg/dL, uric acid 7.8 mg/dL). She was administered low-dose allopurinol and was followed up at our clinic. Later, she disclosed that she practiced self-induced vomiting and had taken high doses of laxatives after each meal for many years.

DISCUSSION

Several mechanisms may be involved in the pathogenesis of hyperuricemia with anorexia nervosa. First, chronic dehydration induces renal insufficiency and decreases renal uric acid clearance. Second, functional hypothalamic amenorrhea causes decreased levels of estrogen, which may enhance renal uric acid excretion. In this case, urine uric acid to urine creatinine ratio was low (0.16), indicating under secretion of uric acid.

Although anorexia nervosa causes hyperuricemia, it is rarely concomitant with tophaceous gout, especially in young woman. Our study of the literature revealed nine anorexia cases with tophaceous gout published in English. These cases had several characteristics in common. Each patient had a long history of anorexia with amenorrhea, most of them for more than twenty years. In addition they had similar precipitating factors: addictive use of diuretics (n = 4); 4,5 laxatives with diuretics (n = 1); 6 habitual self-induced vomiting (n = 2); 7,8 and, alcoholism (n = 1).9 The details of one case were unavailable.10 These conditions may evoke tophaceous gout as complication of hyperuricemia. In the case of our patient, enlarged salivary glands and hypokalemia suggested her habitual self-induced vomiting with addictive use of laxatives. Her history of urolithiasis also suggested that her hyperuricemia was a preexisting condition. Oral laxatives are easily obtained from pharmacies in Japan. Therefore, laxative use may be a hidden addiction, particularly in young women who fear gaining weight.

Figure 1. Small subcutaneous nodules (tophi) observed along the ventral creases of fingers.

Figure 2. Needle-shaped monosodium urate (MSU) crystals visible on compensated polarized light microscopy.
The appropriate treatment for gout with anorexia nervosa is confounding. The affected patients should consume adequate amounts of food and not restrict their diet. Allopurinol should be administered even in the absence of urate overproduction, because it may regress or decrease the number of tophi. Uricosuric drugs are ineffective in patients with renal insufficiency and should be avoided in cases with a history of uric acid nephrolithiasis.

Previously the patient had refused every treatment for anorexia in fear of weight gain, but this time she received medical treatment without much resistance, including fluid replacement therapy. We considered that she wanted to be treated as a physically ill patient, not as a psychotic one. This could be a clue to approaching such patients.

CONCLUSION

Acute gout is often confused with cellulitis. The probability of gout is usually underestimated in young women. However, gouty arthritis should be considered a differential diagnosis of cellulitis with anorexia nervosa.

References
9 Thomas E; Olive P; Canovas F; Medioni D et al. Tophaceous Gout of the Navicular Bone as a Cause of medial Inflammatory Tumor of the Foot. Foot Ankle Int. 1998, vol. 19, p. 48–51.