INFECTION OF A TOPHACEOUS NODULE OF THE WIRST AND HAND : A CASE REPORT
INFECTION D'UN NODULE GOUTTEUX DE LA MAIN ET DES DOIGTS : A PROPOS D'UN CAS

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Abstract

Tophaceous gout occurs years after recurrent attacks of acute inflammatory arthritis. The urate deposits are incriminated in the inflammatory process however their infection is exceptional. Observation: We report the observation of an infected gouty tophus of the little finger and the wrist at a 40-year-old man, presented as an excruciating inflammatory pain with buff-yellow swelling of the fifth right finger and wrist in a febrile context. Evolution was favorable after surgical excision and antibiotic therapy. Conclusion: The infection of a tophus is an exceptional complication of the gout. In daily practice, this diagnosis is a difficult challenge for the clinician. The systematic bacteriological examination of the tophi with cutaneous fistulation is necessary to introduce prematurely an adapted treatment.

Keywords: Infection; Gout; Tophus.

Résumé

Le tophus goutteux survient des années après des crises récurrentes d'arthrite inflammatoire aiguë. Les dépôts d'urate sont incriminés dans le processus inflammatoire mais leur infection est exceptionnelle. Nous rapportons l'observation d'un tophus goutteux infecté du 5ème doigt et du poignet chez un homme de 40 ans présenté comme une douleur inflammatoire atroce avec un gonflement dans un contexte fébrile. L'évolution était favorable après une excision chirurgicale et une antibiothérapie. L'infection d'un tophus est une complication exceptionnelle de la goutte. Dans la pratique quotidienne, ce diagnostic est un défi difficile pour le clinicien. L'examen bactériologique systématique du tophi avec fistulation cutanée est nécessaire pour introduire prématurément un traitement adapté.

Mots clés: Infection ; Goutte ; Tophus.

ملخص

يحدث الترس النقرسي بعد سنوات من الصدمات المتكررة من التهاب المفاصل الحاد. يتم ربط العلاقة السببية لوجود رواسب الإيرات في العملية الالتهابية، لكن الإصابة الخمجية بها تبدو استثنائية. نقدم تقريرا عن ملاحظة لترس النقرس بمستوى الإصبع الخامس والرسغ لدى رجل يبلغ من العمر 40 عاما قدم لعلاج ألم التهابي معقد و متورم في سياق الحمى. كان التطور إيجابيا بعد الاستئصال الجراحي والعلاج بالمضادات الحيوية. يعتبر التعفن الخمجي أو الترس من المضاعفات الاستثنائية لمرض النقرس. في الممارسة اليومية ، يعتبر هذا التشخيص تحديًا صعبًا بالنسبة إلى الطبيب. إن الفحص البكتريولوجي المنتظم للترس مع الناسور الجلدي ضروري لتقديم العلاج المناسب قبل الأوان.

الكلمات المفاتيح: الخمج ; النقرس ; الترس.

INTRODUCTION

Gout is the osteoarticular expression of hyperuricemia. It is characterized by recurrent attacks of acute inflammatory arthritis affecting one or multiple joints. Tophaceous gout occurs years after without a convenient treatment. The urate deposits have a typical eccentric asymmetric distribution mainly on the extensor surface of the joints. They are certainly incriminated in the inflammatory process however their infection is exceptional [1]. The localization of tophus in hands and wrists are possible though rare in the context of chronic gout. It affects essentially the interphalangeal joints and to a lesser extent the metacarpophalangeal joints, the carp and the carpometacarpal joint.

Through the observation of an infected gouty tophus of the little finger and the right wrist at a 40-year-old man, we suggest making a synthesis on the subject by insisting on the difficulty of the differential diagnosis with regard to the other affected septic ostéoarthritis of the hand and wirst.

CASE REPORT

A 40 year old male patient with a medical history of articular gout diagnosed 10 years ago and poorly monitored, presents with a excruciating inflammatory pain of the fifth right finger and wrist in a febrile context estimated at 39°C.The medical examination of the patient noticed a painful, buff-yellow swelling of the dorsal surface of the right wrist and fifth finger. Little necrotic periungual zones with the presence of a fistula and yellowish pus were also observed in the tumefaction (Fig.1). Multiple tophi with normal consistance and color around the proximal interphalangeal joint of the fourth right finger, the metacarpophalangeal joint of the right middle and ring fingers along with the dorsal surface of the left hand and wrist (Fig.2). The extensor surface of the right and left elbows were distinguished as well (Fig.3).

Raised levels of inflammatory markers were found (Sedimentation rate test =62mm in the first hour, C-reactive protein=399mg/ml, white blood cells =40 000 E/ml with a predominance of polynuclear leukocytosis), uricemia level 600 µmol/l (N: 200-420mmol/l), plasma creatinine =244mmol/l. Blood cultures had negative results. Hands X-Rays showed a gouty destructive arthropathy with multiple radiolucent images corresponding to the tophi (Fig.4A, B).

The patient underwent discharge incisions containing chalky deposits of uric acid with yellowish pus (Fig.5).The direct microscopic examination revealed the presence of sodium urate crystals but no germs were detected. The pus culture isolated a multisensitive staphylococcus aureus. Treatment was based on an antibiotherapy associating amoxicillin-clavulanic acid and ofloxacin. The post-operational follow-up was simple with a sustainable apyrexia .the functional state was satisfying after 12 months of hindsight (Fig.6).

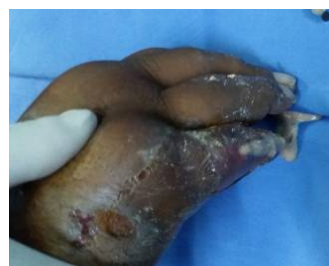


Fig.1: Voluminous, erupted and ulcerated nodule on the the fifth right finger containing chalky material

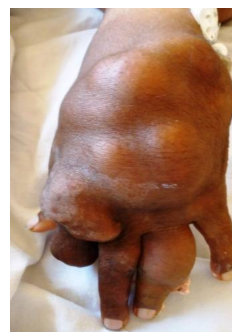


Fig.2: Voluminous tophi of the first and second metacarpophalangeal joint of the left hand and wrist

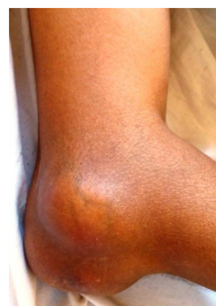
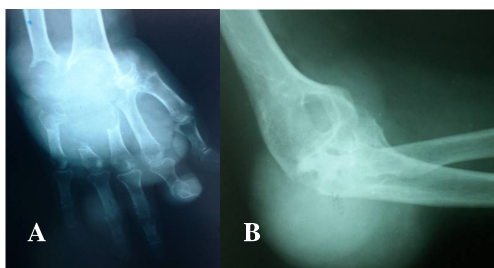


Fig.3: Tophus at the back of left elbow



Figs.4 A, B: Radiographic features of gout, showing characteristic well-defined lytic and erosive lesions of the metacarpal-phalangeal joints of the hand (A) and the elbow (B).

Fig.5: Chalky deposits of uric acid with yellowish pus

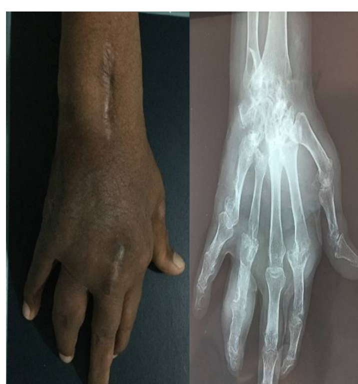


Fig.6: Clinical and radiographic aspect at follow-up.

DISCUSSION

The articular and periarticular inflammation caused by deposits of monosodium urate (MSU) microcrystals had been known since the antiquity with the classical descriptions of the Podagra by Hippocrates [2].
The chronic Tophaceous gout is expressed tardively (within the five years after the first gout flare) among 30% of the patients [3]. It is characterized by the presence of tophus, an uratic tissular deposit which development is correlated with the level and the duration of hyperuricemia [4]. Those tophi affect the hypoderma, the tendons and their sheaths, the articular and paraarticular structures and the bone. They are firm, whitish, painless and grow progressively in the absence of treatment and expressed by typical asymmetric excentric swellings against the joint [2]. They can witness an inflammation, ulceration, a cutaneous fistulation letting flow chalky deposits of uric acid exposing the patient to the risk of soft tissue infection and septic osteoarthritis.
When the deposits progression arrive to the hand synovial the principal differential diagnosis are articular chondrocalcinosis, rheumatoid polyarthritis or an infectious condition in the subacute forms [5] ,we should be well aware that the association is possible. Indeed, Yu et al. reported 30 cases of concomitant septic and gouty arthritis [6].
Since patients with gout and septic arthritis can present with fever, joint swelling, pain and redness, prompt aspiration of the synovial fluid for analysis is imperative to reach an accurate diagnosis. There was a wide range of organisms involved. Staph. aureus is the most common causative organism and Gram-negative bacilli were found in 30% of cases [6]. The secondary infection of these ulcerated tophi is rare since the uratic acid is unfavourable to the microbial growth. An Immunodeficiency disorder can help its happening and so should be systematically researched. In case of infection, the tophus is abnormally calcified and becomes visible to X-Ray. At this stage, the osteoarticular destruction is generally important and evolving. We can exceptionally observe a liquefaction of the tophus by the infection causing afterward a fistula as we saw on that observation.
The liquid is purulent and the isolation of the germ represents a crucial step to adapt the treatment. An adapted antibiotherapy ensures, typically, a good evolution.
In some cases, the tophus may act as a foreign body and sustain the suppuration, as in the osteomyelitis sequestrum, which explains the necessity of surgical resection.
The surgical intervention is also unavoidable when the skin next to the tophus is ulcerated and when it is associated with an infection of the wound [7], as in that patient’s case.

CONCLUSION

The infection of a tophus is an exceptional complication of the gout. In daily practice, this diagnosis remains a difficult challenge for the clinician.

The systematic bacteriological examination of the tophi with cutaneous fistulation is necessary to introduce prematurely an adapted treatment to reduce the complications.

REFERENCES

[1] Lioté F, Hang-Korng E. Physiopathogénie de l'inflammation microcristalline. Rev Rhum 2007;74:31–37.
[2] Kuntz D, Lioté F. Goutte. Encycl Med Chir. Ed. Scientifiques et Médicales Elsevier SAS. Paris. Appareil locomoteur 2003, 14-270-A-10.
[3]Richette P, Bardin T. Gout. Lancet 2010;375:318–328.
[4] Wernick R, Winkler C, Campbell S. Tophi as the initial manifestation of gout. Arch Intern Med 1992; 152:873–876.
[5] Aslam N, Lo S, Mcnab I. Gouty flexor tenosynovitis mimicking infection: a case report emphasising the value of ultrasound in diagnosis. Acta Orthop Belg 2004; 70:368–370.
[6] Yu KH, Luo SF, Liou LB,Wu YJ, Tsai WP, Chenand JY, et al. Concomitant septic and gouty arthritis, an analysis of 30 cases. Rheumatology 2003; 42:1062–1066.
[7] Lee SS, Sun IF, Lu YM, Chang KP, Lai CS, Lin SD. Surgical treatment of the chronic tophaceous deformity in upper extremities – the shaving technique. J Plast Reconstr Aesthet Surg 2009;62(5):669–674.