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Tophaceous Gout in Adults: Case Report and Review of the Literature

Harine Abdel Aziz Garba[1], Adama Bah[2*], Ramadhane Bouchrane[1], Vanessa Lienou Tagne[1], Adamou Hamidou Saoudatou [1], Moustapha Niasse[1], Saïdou Diallo[1]

[1]Service de Rhumatologie, CHU Aristide le Dantec de Dakar, Sénégal
[2] Service de Rhumatologie, Hôpital National Ignace Deen, Conakry, Guinée

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***Corresponding author:** Dr. Adama Bah
Service de Rhumatologie, Hôpital National Ignace Deen, Conakry, Guinée
Email:dradamabah@gmail.com

Abstract **Case Report**

Gout is a microcrystalline arthropathy resulting from the deposition of sodium urate microcrystals in the articular and periarticular tissues, and even in the extra-articular tissues. It affects mainly men and its mechanism is at the origin of a delay in diagnosis, and consequently its severe forms can occur. We report a case of tophaceous gout in a 59 year old adult, with no family history of gout. Gout, whose first attack was at the age of 40, was polyarticular and affected the left wrist, elbows, knees, ankles and the left big toe. The diagnosis was based on clinical signs (tophi at the elbows, ankles, hands, and auricles) and paraclinical signs (hyperuricemia at 620 µmol/l With normal at150-360 µmol/l in women and 310-420 µmol/l in men, presence of sodium urate cristals in the puncture fluid of the right knee, double-contour image on ultrasonography) by the ACR/Eular classification criteria. The background treatment was based on 120mg of Febuxostat per day with a favorable follow-up marked by the regression of signs.

Keywords: Tophaceous gout, Adult, Sénégal, Dakar.

INTRODUCTION

Gout is a microcrystalline arthropathy resulting from the deposition of sodium urate microcrystals in joint and periarticular tissues, and even in extra-articular tissues. It mainly affects men [1].

In patients under 65 years of age, men have a prevalence 4 times higher than women [1, 2]. The impact of hormones cannot be neglected as estradiol can lower uricemia in women before menopause [1].

Tophi appear relatively early; several risk factors are involved, including metabolic syndrome [3-5]. These data, which exist throughout the world, are also present in Africa [6]. Its apparent frequency in Europe and the United States, where 1% of the population is said to have gout [7].

We report the case of a 59 year old adult with multiple tophi which will be supported by the literature review.

OBSERVATION

This was a 59 year old patient, father of two children, whose groin presented a Lesch nyhan syndrome of fortuitous discovery, hypertensive known for 10 years under amlodipine 10mg per day, who presented a chronic peripheral polyarthritis of interest to the right wrist elbows, knees and ankles of inflammatory schedule, evolving like a chain, especially on the big toe and the right knee, associated with conjunctival pallor and emaciation (body mass index at 16.5 kg/m²), The physical examination revealed swollen valgus knees, the exploratory puncture of which brought back 60cc of inflammatory liquid with a chalky appearance (figure 1), a painful swelling of the big toe hindering walking and obliging the use of canes, tophi on the auricles (figure 2), elbows, ankles, wrists and hands (figure 3), opposite the IPP (proximal interphalangeal) of the 2nd toe on the left and right, and opposite the MTPS (metatarsophalangeal) of the big toes (figure 4).

The paraclinical examination found macroscopically several sodium urate microcrystals in clusters (figure 5) with 4100 leukocytes/mm3 and 89% polynuclear. A biological inflammatory syndrome was evidenced by hypochromic microcytic anemia

(hemoglobin 10.6g/dl) and an accelerated sedimentation rate of 78 mm at the first hour.

Total cholesterol:3g/l, HDL:0.8g/l; Triglycerides: 1.34 g/l uricemia: 620 µmol/l (normal at150-360 µmol/l in women and 310-420 µmol/l in men), creatinemia at 42mg/dl with glomerular filtration rate at 16.32 ml/min.

X-ray of the feet showed signs of joint destruction associated with signs of construction (Figure 6).

Ultrasound of the joints showed double-contouring of the left knee with hyperechoic pitting at the tophus on the left 2nd toe.

The diagnosis of gout was retained in common agreement with the 2015 ACR Eular criteria.

The metabolic syndrome was retained according to the IDF definition criteria of 2005.

Gout responded favorably to treatment with Colchicine (0.5 mg daily) and Febuxostat with close monitoring of creatinine levels.

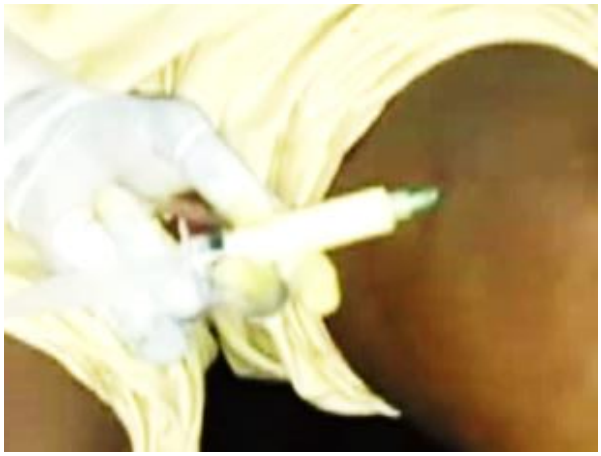

Figure 1: Puncture of the left knee bringing back chalky fluid in a 59-year-old adult with gout at the rheumatology department of Aristide Ledantec Hospital in Dakar, Senegal

Figure 2: **Tophi in the right auricular pinna of a 59-year-old adult with gout in the rheumatology department of Aristide Ledantec Hospital in Dakar, Sénégal**

Figure 3: Tophi of the left hand and wrist in a 59-year-old adult with gout at the rheumatology department of Aristide Ledantec Hospital in Dakar, Sénégal

Figure 4: **Tophi over the PPI of the left 2nd toe and over MTPS of the big toes in a 59-year-old adult in the rheumatology big toes in a 59-year-old adult in the rheumatology department of Aristide Ledantec Hospital in Dakar, Sénégal**

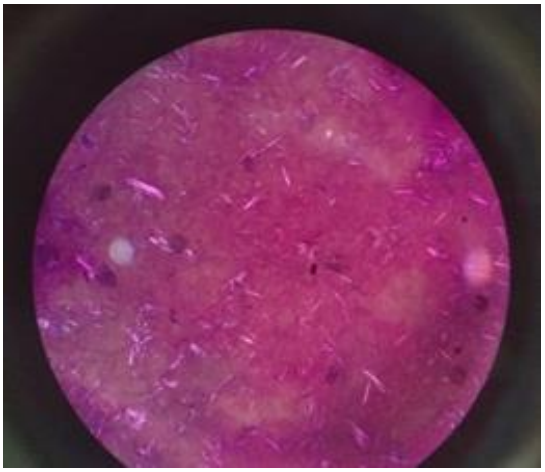

Figure 5: Clusters of sodium urate microcrystals under polarized light microscope with first order red compensator

a

Figure 6: **X-ray of the left foot showing signs of joint destruction associated with signs of left constructions in a 59-year-old adult with gout at the rheumatology department of the Aristide Ledantec Hospital in Dakar, Sénégal**

DISCUSSION

Our observation is that of gout with multiple tophi of fortuitous discovery and whose benignity is known. The fundamental question would be relative to the multiple localization of the tophi rare and even exceptional in the black race. The data in the literature do not support such a hypothesis, as gout is common in black men, hypertension from which the patient has suffered for more than a decade is one of the factors favoring this gout, especially since his treatment has included diuretics, which may also promote the occurrence of this microcrystalline pathology. Several studies have shown an association between diuretic use and increased uricemia [6, 8]. Meyers *et al.*, found diuretic use in 78 of 92 women with gout. The same observation has been made by other authors (18% of premenopausal women developed diuretic-induced gout, and tophaceous gout in women abusing diuretics for weight loss purposes) [6, 9]. In addition, in our patient, arterial hypertension was certainly the favoring factor that fits into the metabolic syndrome. The initial polyarticular involvement observed in our patient is most often the mode of onset of female gout, as reported by Meyers *et al.*, 70% of polyarticular involvement, whereas in men, the mode of onset is generally first monoarticular, then oligoarticular and finally polyarticular after about ten years [10]. The tophaceous nature of our patient, occurring in various locations, is noteworthy because of its rarity both in our daily rheumatological practice and in the literature.

CONCLUSION

Gout is a microcrystalline arthropathy consecutive to the deposits of microcrystals of sodium urate in the articular and periarticular tissues, see extra-articular frequent in men, women are not spared after the menopause.

The diagnosis is based essentially on the presence of monosodium urate crystals.

Its early management improves the functional and vital prognosis.

Its good knowledge makes it possible to avoid the diagnostic delay that to as one of the consequences of the multiple localizations of the tophi.

Sincere Thanks: To all those who participated in the care of this patient in one way or another with a special mention to all the staff of the rheumatology department of the Aristide Ledantec Hospital in Dakar, Sénégal.

Conflicts of Interest: None.

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