

胸锁关节痛风 1 例

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[摘 要] 痛风是嘌呤代谢异常和/或尿酸排泄障碍所致的代谢性疾病, 以单钠尿酸盐结晶沉积于关节或软组织引发的复发性急性关节炎为特征, 根据病因可分为原发性和继发性。多数病例与尿酸排泄障碍相关, 其自然病程包括无症状期、急性关节炎期与间歇期、痛风石及慢性关节炎期。急性痛风性关节炎常表现为突发性关节剧痛, 伴受累关节及周围软组织红肿、发热、压痛, 大关节受累时可出现关节积液, 发作常于夜间或清晨, 具有自限性, 多在两周内自行缓解。急性痛风发作最常见的部位是第一跖趾关节, 其次为中足、踝、膝、腕、指和肘关节, 极少累及中轴关节。疼痛常伴有活动受限, 严重影响患者的日常生活与生活质量。若累及罕见部位或血尿酸正常时易致误诊, 因此需结合病史、查体、实验室及影像学检查综合判断。本例为 19 岁男性, 因反复前胸痛入院, 外院曾疑诊强直性脊柱炎。查体可见双侧胸锁关节压痛、红肿, 皮温增高伴活动受限。骶髂关节 MRI 无异常, 血清尿酸正常。胸部双能量 CT 显示胸骨、双侧锁骨、肩胛骨、多根肋骨及胸骨边缘多处痛风石。依据患者病史、体征及影像学检查确诊为痛风, 给予降尿酸、镇痛及饮食调整治疗。随访两年, 患者胸痛未再发作, 多次血尿酸检查均低于 300 μmol/L, 复查双能量 CT 显示胸锁关节等处的痛风石明显减少。

[关键词] 痛风; 痛风石; 双能量 CT; 胸锁关节
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Gout of the manubriosternal joints: A case report

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SUMMARY Gout is a metabolic disorder caused by abnormalities in purine metabolism and/or impaired uric acid excretion. It is characterized by the deposition of monosodium urate crystals in joints or connective tissues, leading to recurrent episodes of acute arthritis. Gout can be categorized into two major types based on its etiology: primary and secondary. The majority of gout cases are associated with impaired uric acid excretion. The natural course of gout can be divided into three stages: (1) asymptomatic phase; (2) acute arthritis phase and intercritical phase; (3) chronic gouty arthritis and tophaceous phase. Acute gouty arthritis typically presents with sudden, severe joint pain, accompanied by redness, swelling, warmth, and tenderness of the affected joint and surrounding soft tissues. When large joints are involved, joint effusion may occur. Acute gouty arthritis often develops at night or in the early morning, is self-limiting, and usually resolves within two weeks. The most common site of acute gout flare-ups is the first metatarsophalangeal joint, followed by the midfoot, ankle, knee, wrist, fingers, and elbow joints. Acute gout attacks rarely affect the axial joints. Pain in these affected areas is often accompanied by limited function, significantly impacting a patient's daily activities and quality of life. Uncommon sites of gout involvement, as well as gout with normal serum uric acid levels, can easily lead to misdiagnosis. Therefore, a comprehensive diagnosis requires a detailed medical history, physical examination, laboratory tests, and imaging studies. This case report describes a 19-year-old male who was admitted with recurrent anterior chest pain. The diagnosis at another hospital suggested ankylosing spondylitis. Physical examination revealed significant tenderness, redness, and swelling of the bilateral sternoclavicular joints, with local warmth and mildly restricted movement. MRI of the sacroiliac joints showed no significant abnormalities, and serum uric acid levels were normal. Chest dual-energy CT scans revealed multiple tophi in the sternum, bilateral clavicles, scapulae, multiple ribs, and along the edges of the sternum. Based on the patient's medical history, physical findings, and imaging studies, a diagnosis of gout was confirmed. Treatment included urate-lowering therapy, pain management, and dietary adjustments. During a two-year follow-up period, the patient did not experience recurrent anterior chest pain, and multiple serum uric acid tests consistently showed levels below 300 μmol/L. Repeat chest dual-energy CT scans

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indicated significant reduction of tophi in the sternoclavicular joints and other affected areas.

KEY WORDS Gout; Tophus; Dual-energy computed tomography; Sternoclavicular joint

痛风是嘌呤代谢异常和/或尿酸排泄障碍所致的代谢性疾病,以单钠尿酸盐结晶沉积于关节或软组织引发的复发性急性关节炎为特征,根据病因可分为原发性和继发性。多数病例与尿酸排泄障碍相关,其自然病程包括无症状期、急性关节炎期与间歇期、痛风石及慢性关节炎期。急性痛风性关节炎常表现为突发性关节剧痛,伴受累关节及周围软组织红肿、发热、压痛,大关节受累时可出现关节积液,发作常于夜间或清晨,具有自限性,多在两周内自行缓解。急性痛风发作最常见的部位是第一跖趾关节,其次为中足、踝、膝、腕、指和肘关节,极少累及中轴关节^[1]。疼痛常伴有活动受限,严重影响患者的日常生活与生活质量。若累及罕见部位或血尿酸正常时易致误诊,因此需结合病史、查体、实验室及影像学检查综合判断。

本文报道 1 例反复前胸痛 的 19 岁男性,血清尿酸水平正常,行胸部双能量 CT 检查显示胸骨、双侧锁骨、肩胛骨、多根肋骨及胸骨边缘多处痛风石,而得以确诊为痛风的患者,现将诊疗过程报道如下。

1 临床资料

患者,男性,19 岁,主因“反复胸前区疼痛 2 月”就诊于南华大学附属第一医院风湿免疫科,患者于 2 个月前无明显诱因出现胸前区疼痛,伴有疼痛部位肿胀,无发热、畏寒,无第一跖趾关节等关节肿痛,无对称性多关节肿痛,无口干、眼干,无腰痛,无反复口腔溃疡,无光过敏,无面部红斑,无雷诺现象(Raynaud phenomenon),无皮肤黏膜出血点。患者否认既往高尿酸血症、冠心病、高血压、糖尿病、慢性肾病、乙型肝炎、结核等病史,否认既往长期使用药物史。患者曾于外院检查人类白细胞抗原 B27(human leukocyte antigen B27, HLA-B27)阳性,诊断考虑强直性脊柱炎,给予止痛药治疗后,疼痛症状较前好转,但病情仍有反复。患者为求进一步诊治,就诊于我院风湿免疫科门诊。

体格检查:双侧胸锁关节明显压痛、红肿,局部皮温升高,活动轻度受限,脊柱无畸形,活动可,骶髂关节无压痛,“4 字征”阴性。

实验室辅助检查:红细胞沉降率 34 mm/h,C 反应蛋白 5.73 mg/L,血尿酸 282.6 μmol/L,血常规、肝肾功能、抗核抗体谱、免疫球蛋白、补体、抗链球菌溶血素 O 等未见异常。

其他检查:胸部双能量 CT 检查提示,胸骨、双侧锁骨、肩胛骨、双侧多根肋骨、胸骨边缘多发痛风石,胸骨柄骨质密度减低(图 1)。常规 CT 图像见图 2。心电图、心脏彩超、髌髁关节 MRI 未见明显异常。

结合患者病史、临床表现及双能量 CT 检查结果,根据 2015 年美国风湿病学会/欧洲抗风湿病联盟发布的痛风分类标准^[2],本例患者的痛风诊断明确。治疗上给予非布司他 40 mg、每日一次,洛索洛芬钠 60 mg、每日三次。患者出院后 2 年内多次随访,血尿酸水平分别为 270.0、271.1、226.0、265.7 μmol/L,未再发胸锁关节疼痛,双能量 CT 检查提示胸锁关节及其他部位的痛风石较前明显减少(图 3)。

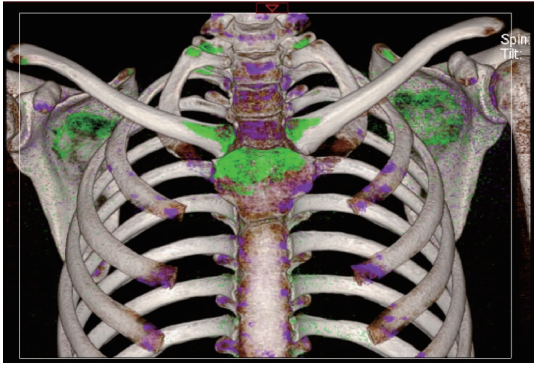


图 1 双能量 CT 显示胸骨、双侧锁骨、肩胛骨、双侧多根肋骨、胸骨边缘多处有尿酸盐结晶沉积(绿色显示)

Figure 1 Dual-energy CT demonstrated the urate crystal deposition (shown in green) in the sternum, bilateral clavicles, scapulae, multiple ribs on both sides, and along the edges of the sternum

2 分析与讨论

本例患者的血尿酸水平并不高,由于患者受累关节的特殊性,无法行关节腔穿刺抽取关节液,排除其他相关疾病后,根据 2015 年美国风湿病学会/欧洲抗风湿病联盟发布的痛风分类标准:(1)患者受累关节不能忍受触摸、按压(2 分);(2)反复典型症状发作,且发作间期完全缓解(2 分);(3)双能量 CT 证实尿酸盐沉积(4 分);患者总得分为 8 分,符合痛风分类诊断标准,故该患者诊断为痛风。

2018 年欧洲抗风湿病联盟更新的痛风循证建议中指出,不应仅根据高尿酸血症来诊断痛风^[3]。高尿酸血症应被视为痛风的一个主要危险因素,而不是作为其诊断的主要指标,没有高尿酸血症并不

能完全排除痛风的诊断。一项研究发现,有 14% 的痛风患者在痛风急性发作期间血尿酸水平低于 6 mg/dL (360 μ mol/L)^[4]。在痛风急性发作期,血尿

酸水平的诊断价值相对有限。因此,对于血尿酸水平正常,但有反复关节疼痛的患者,临床医生也需考虑痛风的诊断。

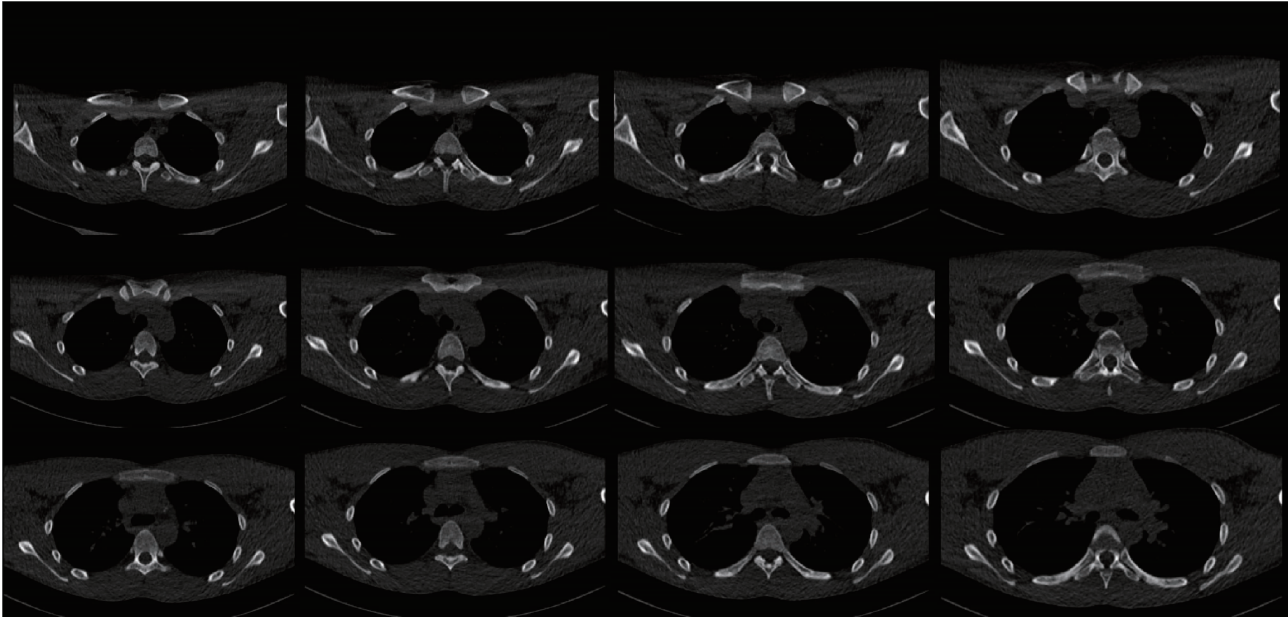


图 2 患者胸部 CT
Figure 2 Chest CT of the patient

能量谱获得的衰减测量值,并利用两种谱之间已知的衰减变化来区分和量化材料,然后通过彩色编码技术,使痛风石呈现出来^[5]。双能量 CT 诊断痛风的敏感度为 90% ~ 100%,特异度为 83% ~ 89%^[6],但由于其潜在的辐射危险和价格偏高,使其在临床上并未成为检查首选。

本例青年男性患者因反复胸前区疼痛 2 个月就诊,血尿酸检查正常,HLA-B27 阳性,外院曾误诊为强直性脊柱炎,且并没有完善骶髂关节 CT 或 MRI 进一步明确诊断,仅给予止痛等对症治疗,虽然症状较前有所缓解,但病情仍有反复,患者无典型的第一跖趾关节红肿热痛,也是导致患者误诊的原因之一。虽然这些不典型部位的痛风比较少见,但临床医生仍不能掉以轻心。关于不典型部位痛风的既往文献报道发现,不仅在胸锁关节,脊柱、颈髓、支气管、阴囊、心脏二尖瓣、肝脏、中耳和乳房等部位均有报道^[7-14]。

目前,难治性痛风越来越受到临床医生的重视,根据 2019 年中华医学会内分泌学会发布的相关指南,难治性痛风定义为:(1)单用或联用常规降尿酸药物足量、足疗程,但血尿酸仍 $\geq 360 \mu$ mol/L;(2)接受规范化治疗,痛风仍发作 ≥ 2 次/年;(3)存在多发性 and/或进展性痛风石^[15]。长期的高尿酸血症如果不能得到控制,最终会导致关节骨质破坏、痛风性

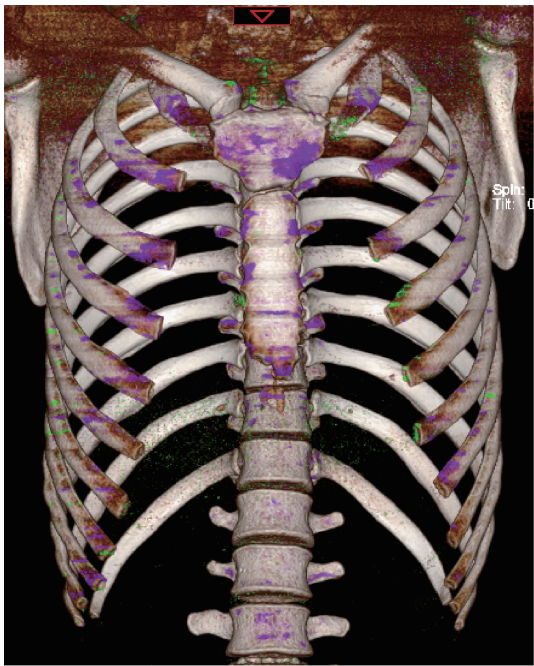


图 3 患者 2 年后随访复查双能量 CT 见尿酸盐结晶沉积较前明显较少

Figure 3 Follow-up after two years with dual-energy CT showed significantly fewer urate crystal deposits compared to before

目前,关节液或痛风石在偏振光显微镜下呈针状和负性双折光是诊断痛风的金标准,但由于该检查的侵入性,在临床上很少进行。近些年,双能量 CT 在临床上的使用越来越普遍,其原理为使用不同

肾病甚至是急性肾衰竭,目前该指南建议使用普瑞凯希来控制难治性痛风。普瑞凯希是一种尿酸氧化酶,能催化尿酸盐氧化为尿囊素。一项重复、随机、双盲、安慰剂对照试验提示,在患有慢性痛风、血清尿酸水平升高和别嘌呤醇不耐受或难治性的患者中,普瑞凯希能降低尿酸水平^[16]。近些年,白细胞介素 1 (interleukin 1, IL-1)拮抗剂(如阿纳白滞素、卡那单抗和利纳西普)也被批准用于痛风的治疗与预防。

综上所述,随着目前诊断与治疗手段的增多,对于临床医生而言,需要精准地做出诊断,避免误诊和漏诊一些不常见部位的痛风以及血尿酸水平正常的痛风。

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作者贡献声明 甘地:总结病例资料,撰写论文;付强:提出研究思路和诊断思路,指导论文撰写;唐小惠、李楚炜:查阅、整理文献;舒兆平:总体把关和审定论文。所有作者均参与论文修改,并对最终文稿进行审读和确认。

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