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Buerger's Disease: A Rare Case Report

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Abstract **Case Report**

Buerger's disease is a nonatherosclerotic segmental inflammatory disease of small- and medium-sized arteries of the distal extremities. It's typically affects young male smokers; however, there is an increasing prevalence in women. It is more prevalent in the Middle East and Far East than in North America and Western Europe. Immunohistological examinations and the detections of various autoantibodies led to the new paradigm of an immunopathogenesis of TAO. Clinically it is characterized by distal ischemia syndromes in young people and high amputation rates. We report BD in a 34-year-old male presenting with arterial insufficiency of left foot and history of smoking cigarettes and cannabis for 20 years. BD was diagnosed based on history of smoking in combination with clinical, laboratory, and radiologic findings. Buerger's disease is a diagnosis of exclusion. Therefore, smoking cessation is the most effective treatment and is crucial to prevent disease progression.

Keywords: Buerger's disease, Thromboangiitis Obliterans (TAO), Smoking, Painful ulcers, Arterial insufficiency.

INTRODUCTION

Buerger's disease or thromboangiitis obliterans (TAO) is a segmental nonatherosclerotic inflammatory disorder that involves the small and medium arteries, veins, and nerves of the extremities primarily. In 1879 Von Winiwarter provided the first description of a patient with thromboangiitis obliterans. But it was Leo Buerger who published a detailed description of the pathological findings in patients with the disease in 1908, hence the name Buerger's disease. Cigarette smoking has been clearly implicated as the main etiology of the disease. A clear relation between cigarette smoking and initiation, exacerbation, and remission of the disease has been established [1, 2].

CASE REPORT

34-year-old male smoker with a 6 months history of numbness, pain, and discoloration of the right greater, 2nd, and 3rd toe presented with right lower leg discomfort and blackish discoloration of all 5 digits of the lower limb. On examination, the patient had blackish ischemic gangrenous tissue on his right foot. The right femoral, popliteal, and pedal pulses were palpable. Ankle: brachial indices were normal. The history of the disease dates back 20 days with the onset of edema in both lower limbs with pain in the calves and cyanosis of the big toe. On examination, the patient had blackish ischemic gangrenous tissue on his right foot with absence of tibial and pedal pulse. CT angiography showed a multi-stage stenosis of the posterior tibial artery. Autoimmune, thrombophilic and cardiovascular diseases were excluded. Continuous intravenous infusion of heparin and antiplatelet drug (aspirin) was administered. The patient was heavily encouraged to stop smoking completely and immediately.

DISCUSSION

Buerger's disease or thromboangiitis obliterans is characterized by the absence or minimal presence of atheromas and vasoocclusive phenomenon [3]. Patients with TAO comprise only 4 to 5% of all those with ischemic peripheral vascular disease [4]. Localization is typically infrapopliteal in the lower extremities and brachial artery in the upper extremities. Ischemic arterial findings include rest pain, intermittent claudication, ischemic ulcers, Raynaud's phenomenon, and gangrene.

The most frequent clinical symptom is felt on the lower limb. There is no adequate data about the very early stages of TAO. Most patients who seek help have undergone ulceration and or pain at rest.

Raynaud's phenomenon is usually unilateral, found in half of TAO patients, and superficial thrombophlebitis is found in 40-6 0% of cases. Raynaud's phenomenon occurs because of reversible spasm of the peripheral arterioladue to response to cold

or stress. Critical ischemia can occur and particularly very painful, which lead to ulceration or gangrene

There is no specific laboratory examination to diagnose Buerger's disease. A complete examination should be done to exclude other causes of vasculitis. Including complete blood test, liver and renal function test, fasting blood sugar, CRP, ANA test, Rheumatoid factor, serological marker for CREST syndrome (Calcinosis cutis, Raynaud's phenomenon, Sclerodactyly, Telangiectasia, and Scleroderma),and screening for hypercoagulability, including examination of antiphospholipid antibodies.

The conventional diagnosis of TAO is based on these criteria; smoking history, beginning before the age of 50, infrapopliteal arterial occlusive disease, upper extremity involvement or phlebitis migrans and absence of atherosclerotic risk factors except smoking [5].

There is no specific treatment for TAO. The main treatment for TAO patients is to give up smoking or other use of tobacco in any form. Medical treatment such as antiplatelets, anticoagulants, thrombolytics, vasodilators pentoxifylline, cilostazol, prostaglandins and endothelin-antagonist can be used to treat a patient with TAO. Surgical procedures can be performed in selected cases [6].

TAO is a predominantly clinical diagnosis that should be suspected in male patients who smoke and who present with ischemia of the hands and/or feet. Emergency physicians should keep TAO in mind in patients with pain and discoloration in the toe because early detection and treatment reduce the symptoms of the patients and prevent amputation.

REFERENCES

1. Grove, W. J., & Stansby, G. P. (1992). Buerger's disease and cigarette smoking in Bangladesh. *Annals of the Royal College of Surgeons of England*, *74*(2), 115-118. Accessed May 17, 2023.
2. Papa, M., Bass, A., Adar, R., Halperin, Z., Schneiderman, J., Becker, C. G., ... & Mozes, E. (1992). Autoimmune mechanisms in thromboangiitis obliterans (Buerger's disease): the role of tobacco antigen and the major histocompatibility complex. *Surgery*, *111*(5), 527-531.
3. Olin, J. W. (2000). Thromboangiitis obliterans (Buerger's disease). *New England Journal of Medicine*, *343*(12), 864-869.
4. Wadud, M. A., Taimur, S. D. M., Kabir, C. S., & Roy, S. P. (2015). Buerger s disease (thromboangiitis obliterans): A diagnostic challenge-a rare case report. *BIRDEM Medical Journal*, *5*(1), 37-41.
5. Shionoya, S. (1998). Diagnostic criteria of Buerger's disease. *International journal of cardiology*, *66*, S243-S245.
6. Vijayakumar, A., Tiwari, R., & Kumar Prabhuswamy, V. (2013). Thromboangiitis obliterans (Buerger's disease)—current practices. *International journal of inflammation*, *2013*(1), 156905.