

## Case Report

# Buerger's Disease: A Case Report of Concerned Patient

Vemparala Priyatha<sup>1</sup>; Saba Ijaz<sup>2</sup>; Shilpa Samayam<sup>3</sup>;  
Simon Tsegaye Geleta<sup>4</sup>; Ruth Betremariam Abebe<sup>4</sup>;  
Motuma Gonfa Ayana<sup>4</sup>; Helina Endazezew Tebeje<sup>4</sup>;  
Rahul Kumar<sup>5</sup>; Musa Bin Bashir<sup>6\*</sup>

<sup>1</sup>All India Institute of Medical Sciences, Bhubaneswar, India

<sup>2</sup>Department of Internal Medicine, Life Line Medical and Diagnostic Center, Islamabad, Pakistan

<sup>3</sup>Department of General Medicine, Government Medical College Siddipet, Telangana, India

<sup>4</sup>Department of Internal Medicine, University of Gondar, Ethiopia

<sup>5</sup>Xi'an Jiaotong University School of Medicine, Xi'an Shaanxi, China

<sup>6</sup>Department of Cardiology, Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an Shaanxi, China

**\*Corresponding author: Musa Bin Bashir**

Department of Cardiology, Second Affiliated Hospital Of Xi'an Jiaotong University, Xi'an Shaanxi, China.

Email: royalbolan@gmail.com

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## Introduction

Thromboangiitis Obliterans (TO), also termed as Buerger's disease, is a disease of male smokers. Small and medium sized vessels of legs are affected with segmental inflammation without any atherosclerosis (Olin). Diagnostic criteria for TO is provided in previous study by Mills et.al. [5]. Digital subtraction angiogram reveals Corkscrew collateral appearance in lower extremities which is hallmark of TO [2]. Vasa nervorum of the tibial nerve is responsible for origin of corkscrew collaterals in TO [1]. The corkscrew signs are classified into four types on the basis of arterial helical signs as described by Fujii et.al. Patients with smaller corkscrew segments have higher prevalence rate of ischemic ulceration as compared to larger corkscrew segments [3]. The clinical signs of TO includes pain or coldness in fingers which further develop into pain during rest, ulcerative skin, gangrene. The presence of gangrene leads to surgical amputation. [11]. Younger males aged 25-40 years are at risk of developing disease. In the worst-case scenario might lead to gangrene and limb amputation in patients. Cigarette smoking is the primary cause of the disease and immediate cessation of smoking can remedy against worsening of symptoms.

## Case Representation

A 30 years male, being a smoker, was admitted in our department. Both feet's toes were ulcerated and necrotic lesions were visible on each of them. Allen test was done as palms were cold and pale at the baseline. Angiogram was conducted, which showed the presence of arterial occlusion without any atherosclerotic plaque. He was normal, healthy patient with decreased risk factors associated with atherosclerosis. Shionoya's diagnostic criteria was utilized to rule out TO [10]. He was a smoker with age less than 50 years, arteries supplying limbs were infected and risk factor associated with atherosclerosis were absent. Legs were painful, typical of TO. Beside these, Corkscrew collateral was also present which confirmed TO. Treatment of disease includes: debridement of necrotic ulcerations, Nifedipine and Iloprost were prescribed to reduce vasospasm, dilate arterial vascular beds and decrease the pain. He was advised total smoking abstinence, adopt plenty of fluids intake and remain active. Failure of smoking cessation can lead to surgical sympathectomy or limb amputation. It was advised to consult physiotherapist in case limb had to be amputated.



Figure 1: Lesioned Toe.

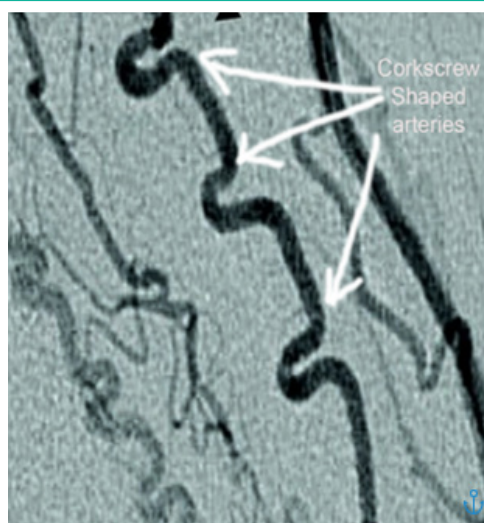


Figure 2: Corkscrew Collateral.

### Discussion

Buerger's disease is disease of young smokers aged less than 50 years. It is an inflammatory disease which infects smaller and medium small sized arteries in limbs. The disease is losing grounds in the western countries due to decreased smoking practices while in Asian countries it has still higher prevalence, with highest numbers in Indian, Korean and Japanese ancestry [7-9]. In case under discussion patient was fulfilling diagnostic criteria framed for TO. As neuropathy and gangrene typically in dictates diabetes. Gangrene was also present in this case but corkscrew appearance of arteries in the limb is major sign of this disease which are usually confirmed through diagnostic tools. As disease is rare with not much evident symptoms so patient response wasn't alarming. With the passage of time, clogged arteries because of clotted blood cause blockade of blood supply to toes and tissues began to die because of lack of ischemia and lack of nutrients. Gangrene surfaced when sufficient, evident damage was done to toes. Angiogram, MRI are used to investigate disease in young patients. In this angiogram, photograph of toes is present as Figure 1 & 2 these two were used as evidence to rule out TO. Tobacco smoke is considered responsible for disease with mechanism of disease still not well defined. It is attributed to possible tobacco hypersensitivity and immunological dysfunction [6]. TO is usually corrected through bypass surgeries and drugs are usually prescribed to alleviate symptoms of disease [4]. Drugs can not cure corkscrew collater-

als of the vessels. If symptoms persist it can lead to gangrene. If necrotic debridement of the limbs doesn't act as protective measure against invasion of disease, then limb is amputated to prevent septicemia.

### Conclusion

Patient's infected limb was debrided, CCB and Prostacyclin analogue was prescribed and was advised to avoid smoking to prevent further progression of disease.

### Author Statements

### Competing Interests

The authors declare that they no known competing financial interests or personal relationship that could have appeared to influence the work reported in this paper.

### Author Contributions

All authors contributed to the study conception and design. Material preparation, data collection by [Vemparala Priyatha] and [Saba Ljaz] analysis were performed by [Motuma Gonfa Ayana] and [Shilpa Samayam] The first draft of the manuscript was written by [Ruth Betremariam Abebe] and [Simon Tsegaye Geleta] literature review by [Helina Endazew Tebeje] and [Rahul Kumar] all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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