Case Report

DOI: 10.7860/JCDR/2017/25300.9784

Blue Finger Syndrome: An Unusual Presentation of Rheumatoid Arthritis

Internal Medicine Section

ROBIN GEORGE MANAPPALLIL[1], JISHNU JAYARAJ[2]

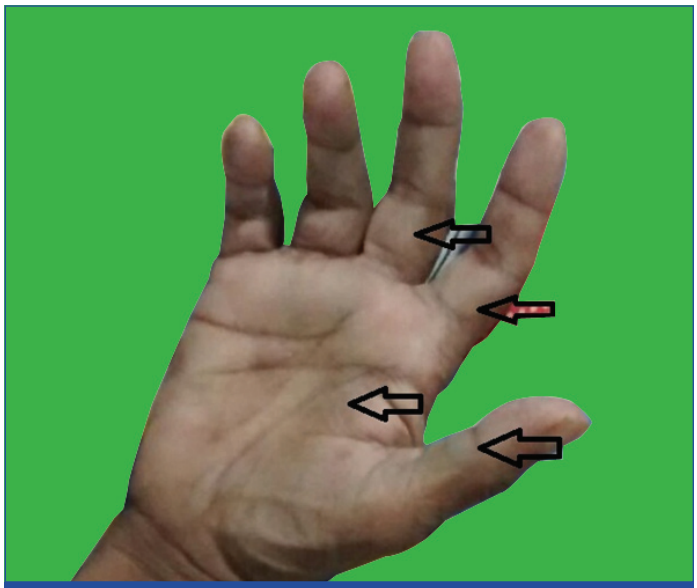
ABSTRACT

Blue Finger Syndrome (BFS) is a benign and rare condition with an idiopathic aetiology. It is characterised by an acute bluish discoloration of fingers which may be accompanied by pain. This is a case of a middle aged female who presented with painless bluish discoloration of right hand and was diagnosed to have BFS. Though BFS is idiopathic, our patient on evaluation was found to have an underlying Rheumatoid Arthritis (RA). Patients with RA are subject to Raynaud's phenomenon; but BFS presenting in a patient with RA is a rare scenario.

Keywords: Diabetes, Hypertension, Raynaud's phenomenon, Rheumatoid vasculitis

CASE REPORT

A 55-year-old female, homemaker, presented to the emergency department at night with complaints of acute bluish discoloration of right hand without any pain. She was a hypertensive (on telmisartan 40 mg once daily) and diabetic (on insulin therapy). She did not have any similar episodes in the past. On examination, she was a moderately built and nourished individual, conscious, oriented and afebrile. Her pulse was 80/minute, which was regular, good volume and felt equally in both upper limbs. Her blood pressure was 140/90 mmHg. Local examination of right hand revealed bluish discoloration of palm, thumb, index and middle fingers with sparing of tips [Table/Fig-1]. There was no swelling, tenderness, temperature variation, deformities or signs of trauma. Allen's test was normal and Adson's sign was absent. Cold and warm exposure did not show any changes in colour. Her systemic examinations were normal. Since the patient was very panicky and anxious with regard to her blue hands, she was admitted for observation and evaluation. Her complete blood count, renal and liver functions, Electrocardiogram (ECG), Echocardiography (ECHO) and chest X-ray were normal. Her thyroid stimulating hormone level was normal, serum cholesterol was 234 mg/dl and glycosated haemoglobin was 7.2%. Doppler study of her right upper limb vessels and ankle brachial index were also normal. A provisional diagnosis of BFS was made. On further probing, she gave history of infrequent episodes of small joint pain of both hands with early morning joint stiffness lasting for about 30 minutes for the past four months. The joint pains were very mild, not requiring any medications. She was also symptom free for the past one month. Her erythrocyte sedimentation rate was 40 mm/hour (0-20), C-reactive protein 3 mg/l (<1), Rheumatoid factor and anti-cyclic citrullinated peptide were positive. Antinuclear antibody and antidouble stranded DNA were negative. On the basis of history and investigation reports, RA was considered as the aetiology for BFS. Hydroxychloroquine 400 mg once daily and methotrexate 5 mg once weekly with folic acid supplementation were started. Since the patient had hypertension, diabetes, dyslipidemia and newly diagnosed RA, tablet clopidogrel 75 mg once daily and rosuvastatin 5 mg at night were prophylactically added to her medications (in view of the possibility of Raynaud's phenomenon). Within five days the bluish discoloration resolved completely and she was discharged. She was followed up for the next three months and continues to be asymptomatic.



[Table/Fig-1]: Bluish discoloration of palm, thumb, index and middle fingers with sparing of tips of right hand.

DISCUSSION

Bluish discoloration of limbs can occur due to ischemia or vasospasm. Some of the other causes include Raynaud's syndrome, trauma, atherosclerosis, thoracic outlet syndrome, Buerger's disease, micro-emboli, venous thrombosis and frost-bite [1].

Raynaud's phenomenon is characterised by episodic digital ischemia with development of blanching, cyanosis and redness of fingers and toes after cold exposure and subsequent rewarming. These bluish discolorations are usually seen at the finger tips and are associated with pain or numbness. Patients with RA are subject to Raynaud's phenomenon due to intimal proliferation in digital arteries [2]. Rheumatoid vasculitis presents with cutaneous manifestations like digital infarcts, petechaie, purpura, gangrene and painful ulcers [3].

Spontaneous BFS is a benign acute condition, presenting in the absence of trauma or systemic illness. Subcutaneous bruising has been proposed as the probable mechanism; and the resolution occurs rapidly, within days, without any treatment. Unlike Raynaud's phenomenon, the bluish discoloration is seen over hands and fingers with sparring of tips. It is rarely associated with pain. The

discolorations usually disappear without going through the phases of ecchymosis resorption. Clinically, the sparing of finger tips along with negative history of rheumatologic diseases or an embolic phenomenon are indicative of a benign aetiology [4,5].

Reports of patients presenting with BFS are limited. This may be either due to its benign nature or due to lack of knowledge. In a retrospective study by Cowen R et al., majority of the patients presenting with acute bluish discolouration of fingers had an idiopathic aetiology, while others were due to Raynaud's phenomenon, polycythaemia and thoracic outlet syndrome [1]. Another case study had branded BFS as an insignificant condition [6]. However, our patient who presented with features of BFS was found to have an underlying RA.

CONCLUSION

BFS is a benign and rare condition; with only a handful of cases being reported. These patients present with painless bluish discolouration of hands with sparing of finger tips and no changes in colour when subject to temperature changes. These features enable physicians to distinguish it from Raynaud's phenomenon. Bluish discoloration of fingers may be seen in patients with RA as a result of either Raynaud's phenomenon or vasculitis. As per the definition, BFS has an idiopathic cause. But our patient presented with features of BFS (not Raynaud's phenomenon) and was found to have an underlying RA. To the best of our knowledge, this might be the first case of BFS secondary to RA. This case, therefore, highlights the fact that BFS need not always be idiopathic, and it is important to rule out systemic causes in such patients.

REFERENCES

[1] Cowen R, Richards T, Dharmadasa A, Handa A, Perkins JMT. The acute blue finger: management and outcome. Ann R Coll Surg Engl. 2008; 90:557-60.
[2] Creager MA, Loscalzo J. Arterial diseases of the extremities. In : Kasper, Fauci, Hauser, Longo, Jameson, Loscalzo (ed). Harrison's Principles of Internal Medicine. 19th ed. McGraw Hill education. pp. 1647-49.
[3] Shah A, St. Clair EW. Rheumatoid Arthritis. In : Kasper, Fauci, Hauser, Longo, Jameson, Loscalzo (ed). Harrison's Principles of Internal Medicine. 19th ed. McGraw Hill education. pp. 2138.
[4] Khaira HS, Rittoo D, Vohra RK, Smith SRG. The non-ischaemic bluefinger. Ann R Coll Surg Engl. 2001; 83:154-57.
[5] Weinberg I, Jaff MR. Spontaneous blue finger syndrome: a benign process. Am J Med 2012;125:1-2.
[6] Deliss LJ, Wilson JN. Acute blue fingers in women. J Bone Joint Surg Br. 1982;64(4):458-59.

PARTICULARS OF CONTRIBUTORS:
1. Consultant-Physician, Department of Internal Medicine, Baby Memorial Hospital, Calicut, Kerala, India.
2. Resident, Department of Internal Medicine, Baby Memorial Hospital, Calicut, Kerala, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Robin George Manappallil,
Baby Memorial Hospital, Calicut-673004, Kerala, India.
E-mail: drrobingeorgempl@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Nov 08, 2016**
Date of Peer Review: **Jan 28, 2017**
Date of Acceptance: **Mar 25, 2017**
Date of Publishing: **May 01, 2017**