

# Difficult Venesections: An Easy Solution

Sanjeev Gupta, Ravi Shankar Jangra<sup>1</sup>, Sunita Gupta<sup>2</sup>, Meghna Khatri, Namya Gupta<sup>3</sup>

Department of Dermatology, Maharishi Markandeshwar Institute of Medical Sciences and Research (MMIMSR), Maharishi Markandeshwar Deemed to be University (MMDU), Ambala, <sup>1</sup>Sun Skin Clinic, Ambala City, <sup>2</sup>Department of Internal Medicine, Maharishi Markandeshwar Institute of Medical Sciences and Research (MMIMSR), Maharishi Markandeshwar Deemed to be University (MMDU), Ambala, <sup>3</sup>Kalpana Chawla Government Medical College, Karnal, Haryana, India

## Abstract

Venesection is common procedure performed in day to day life of every doctor. Conventional vein finders available are costly and not easily available. The present paper highlights the use of makeshift vein finder.

**Keywords:** Customized, infrared light, innovation, procedure, red light, venesection

## PROBLEM FACED

Venesection is a routine procedure performed frequently in indoor and outdoor patients. In dermatology, it is routinely required for the preparation of platelet-rich plasma apart from blood sampling. Sometimes it is difficult to find a good vein because of obesity old age. There are a

lot of vein finders and smartphone applications available in the market and online, which are based on infrared



Figure 1: Poor visibility of vein in normal light



Figure 2: Prominent vein seen after using red light in contact with skin

**Address for correspondence:** Dr. Sanjeev Gupta,  
#B2, MM Medical College Residential Campus, Mullana,  
Ambala, Haryana, India.  
E-mail: sanjeevguptadr@gmail.com

### Access this article online

Quick Response Code:



Website:  
[www.jcasonline.com](http://www.jcasonline.com)

DOI:  
10.4103/JCAS.JCAS\_84\_23

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** [reprints@medknow.com](mailto:reprints@medknow.com)

**How to cite this article:** Gupta S, Jangra RS, Gupta S, Khatri M, Gupta N. Difficult venesections: An easy solution. J Cutan Aesthet Surg 2024;17:158-9.

technology; unfortunately, they are costly and not easily available, especially in remote areas and poor-resource settings.

## **SOLUTION PROPOSED**

To overcome this problem, we tried to devise an in-house vein finder with easily accessible components. Veins are located deep in subcutaneous tissue, where normal white light fails to penetrate [Figure 1]. Wavelengths of 600–700 nm (red color) penetrate the subcutaneous tissue where the superficial blood vessels reside. When the red light is flashed close to the skin, the hemoglobin in the blood vessels acts as a chromophore and absorbs red light better than the surrounding tissue. Therefore, the blood vessels are clearly delineated and better visualized as dark areas against red light surrounding subcutaneous tissue [Figure 2].<sup>[1,2]</sup> To make an indigenous red light source, a piece of red cellophane paper was taken which was wrapped on an LED torch, or any portable light source. The piece of cellophane sheet can be cleaned with an antiseptic solution before use and can be discarded after use. The red light emitted has deeper penetration and gives a better visualization of the veins that are not easily seen in white light. Even a cellphone flashlight after cleaning with an antiseptic solution can be used in direct contact with the skin for better penetration of light and serves the same purpose.

This makeshift device is economical and can be easily customized and may be of help in emergency situations, especially in poor resource settings where the vein is not easily visible.

## **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## **Financial support and sponsorship**

Nil.

## **Conflicts of interest**

There are no conflicts of interest.

## **REFERENCES**

1. Mohammed A. Low cost blood vein detection system based on near-infrared LEDs and image-processing techniques. *Polish J Med Phys Eng* 2020;26:61-7.
2. Franky C, Wahyudianto A, Yasin M. Design of vein finder with multi tuning wavelength using RGB LED. *J Phys Conf Ser* 2017;853:012019. doi:10.1088/1742-6596/853/1/012019.