

Two-step, imaging-device–guided, precise filler-injection technique



Yau-Li Huang, MD,^{a,b} Shyue-Luen Chang, MD,^{a,b} and Chun-Yu Cheng, MD^{a,b,c}
Taoyuan, Taiwan

Key words: filler injection; ultrasound; vein finder.

SURGICAL CHALLENGE

Hyaluronic acid injection is one of the most common procedures for facial rejuvenation and volumization. Although it is generally considered safe, complications sometimes occur, such as bruising, cutaneous necrosis, and blindness. Although knowledge of facial anatomy may minimize the risk, the distribution of vessels varies for each patient.

SOLUTION

We used Vein Viewer (Christie Medical Holdings, Inc, Memphis, TN) and ultrasonography (Acuson X150, Siemens Medical Solutions USA, Mountain View, CA) to assist with filler injection. In the first step, we applied the Vein Viewer to detect superficial vein distribution over the treated area and to choose the entry point without venipuncture (Fig 1, A). In the second step, we performed ultrasonography with color Doppler to detect sequential deep anatomic structures and guide the pathway of the filler injection to prevent intravascular infusion (Fig 1, B-E).

Vein Viewer is a device that uses near-infrared light to illuminate the patient's skin.¹ The near-infrared light penetrates the skin and subcutis with low absorption. In contrast, near-infrared light is absorbed by blood, causing dark shadows. Therefore, it can show the superficial vasculature and help us choose an entry point to prevent venipuncture and bruising. The ultrasonography and color Doppler provide us real-time images of the location of blood vessels and anatomic structures in the treated area. Hence, we can inject filler in the correct anatomic layer and avoid intravascular infusion.² Under the guidance of both devices, we can perform filler injection more delicately and reduce the risk of complications.

From the Department of Dermatology, Chang Gung Memorial Hospital and Chang Gung University College of Medicine,^a Department of Cosmetic Science, Chang Gung University of Science and Technology,^b and the Center of Tissue Engineering, Chang Gung Memorial Hospital.^c

Funding sources: None.

Conflicts of interest: None disclosed.

Accepted for publication August 4, 2019.

Reprints not available from the authors.

Correspondence to: Chun-Yu Cheng, MD, Chang Gung Memorial Hospital, 199, Tun-Hwa North Rd, Taipei 105, Taiwan. E-mail: dermatology99999@gmail.com.

J Am Acad Dermatol 2020;83:e119-20.

0190-9622/\$36.00

© 2019 by the American Academy of Dermatology, Inc.

<https://doi.org/10.1016/j.jaad.2019.08.020>

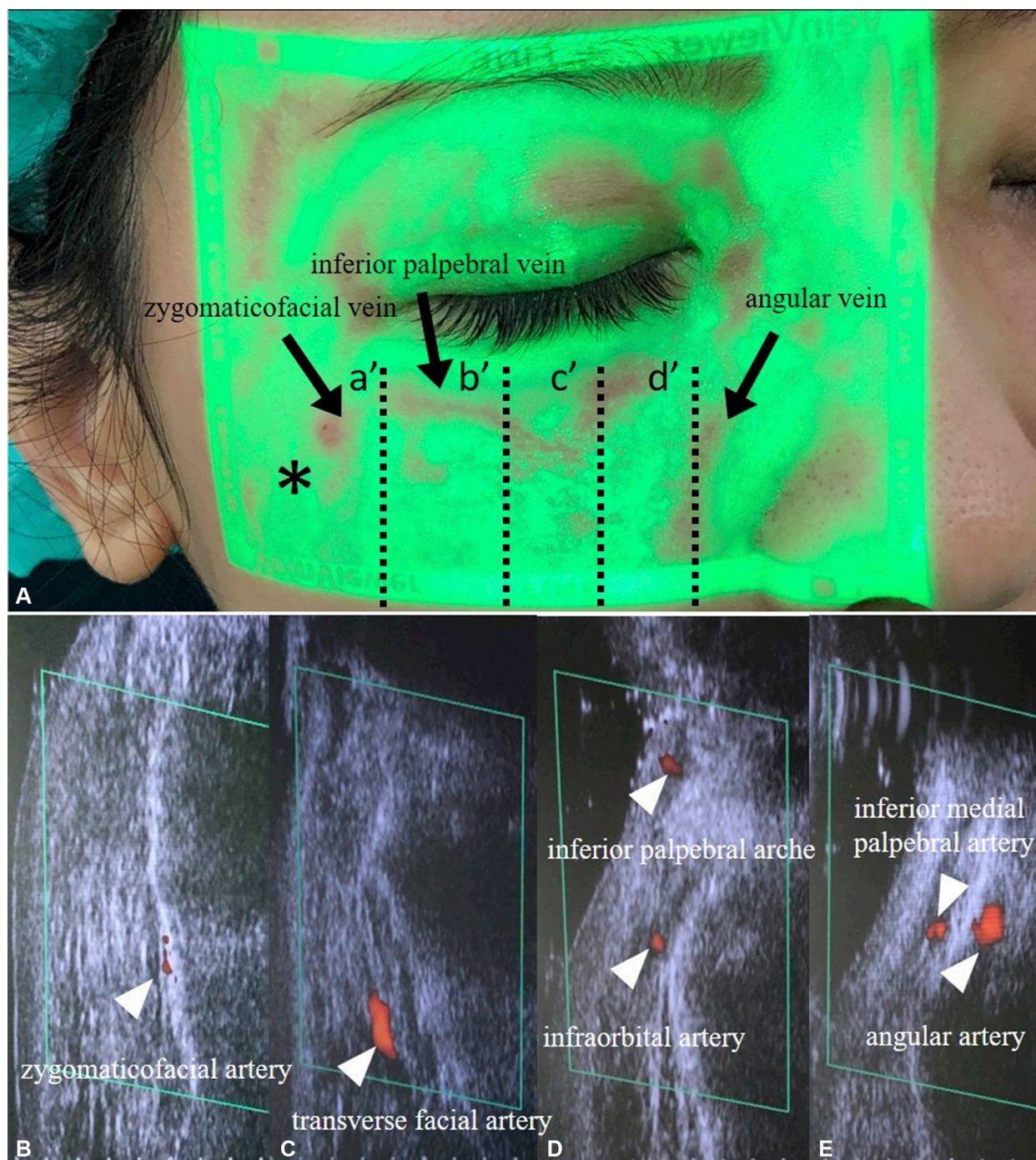


Fig 1. **A**, The Vein Viewer (Christie Medical Holdings, Inc, Memphis, TN) was used to detect the distribution of superficial veins and to choose the entry point (asterisk). Serial ultrasonographic examination with color Doppler was performed on dotted lines (a'-d') to detect sagittal anatomy of the treated area. **B**, Ultrasonography of dotted line a'. **C**, Ultrasonography of dotted line b'. **D**, Ultrasonography of dotted line c'. **E**, Ultrasonography of dotted line d'.

REFERENCES

1. Miyake RK, Zeman HD, Duarte FH, et al. Vein imaging: a new method of near infrared imaging, where a processed image is projected onto the skin for the enhancement of vein treatment. *Dermatol Surg*. 2006;32:1031-1038.
2. Iwayama T, Hashikawa K, Osaki T, Yamashiro K, Horita N, Fukumoto T. Ultrasonography-guided cannula method for hyaluronic acid filler injection with evaluation using laser speckle flowgraphy. *Plast Reconstr Surg Glob Open*. 2018;20:e1776.