

Physician - Venous and Lymphatic System Diseases and Surgery/Endovenous Interventions

[MSB-53]

Clinical Efficacy and Safety of Using N-Butyl Cyanoacrylate in the Treatment of Perforator Vein Insufficiency

Nur Dikmen¹, Evren Özçınar¹, Ahmet Kayan¹, Nadir Polat¹, Zeynep Eyileten¹, Mustafa Şırlak¹

¹Department of Cardiovascular Surgery, Ankara University Faculty of Medicine, Ankara, Türkiye

²Department of Cardiovascular Surgery, Kırıkkale High Specialization Hospital, Kırıkkale, Türkiye

Cardiovascular Surgery and Interventions 2024;11(Suppl 1):MSB-53

Doi: 10.5606/e-cvsi.2024.msb-53

E-mail: nadirpolat06@hotmail.com

Received: September 13, 2024 - Accepted: September 29, 2024

Objective: This study aimed to evaluate the efficacy of a nonthermal and nontumescent embolization method using N-butyl cyanoacrylate for managing perforator incompetence.

Methods: This single-center retrospective study analyzed 98 consecutive patients diagnosed with perforator vein insufficiency treated with N-butyl cyanoacrylate. The study protocol included physical examinations, Doppler ultrasonography, venous clinical severity scoring, CEAP (Clinical, Etiological, Anatomical, and Pathophysiological) classification, and quality of life assessments before and after the procedure. The primary goal was to compare clinical, functional, and duplex ultrasonography parameters in managing varicose vein diseases with isolated primary perforator incompetence using duplex ultrasonography-guided N-butyl cyanoacrylate treatment. Furthermore, the study evaluated the occlusion rate, procedural pain, phlebitis, ecchymosis, and paresthesia.

Results: The occlusion rate at six months was 96.9%, with a significant reduction in pain and other symptoms of chronic venous insufficiency. The incidence of complications was low. Phlebitis was observed in 3.4% of cases, ecchymosis in 2.8%, and transient paresthesia in 1.7%. There were no reports of severe adverse events, such as deep vein thrombosis or allergic reactions.

Conclusion: Interruption of perforators effectively reduces the symptoms of chronic venous insufficiency and promotes rapid ulcer healing. This nontumescent, nonthermal embolization method can be safely applied with high success rates. The results of this study suggest that N-butyl cyanoacrylate is a viable option for treating perforator incompetence.

Keywords: N-butyl cyanoacrylate, perforator vein incompetence, venous ulcer.



Figure 1. Image demonstrating perforator vein insufficiency.

References

1. Beebe-Dimmer JL, Pfeifer JR, Engle JS, Schottenfeld D. The epidemiology of chronic venous insufficiency and varicose veins. *Ann Epidemiol* 2005;15:175-84. doi: 10.1016/j.annepidem.2004.05.015.
2. Ballard JL, Bergan JJ, Sparks S. Pathogenesis of chronic venous insufficiency. In: Ballard JL, Bergan JJ, editors. *Chronic venous insufficiency: Diagnosis and treatment*. New York: Springer; 2000. p. 17-24.
3. Marrocco CJ, Atkins MD, Bohannon WT, Warren TR, Buckley CJ, Bush RL. Endovenous ablation for the treatment of chronic venous insufficiency and venous ulcerations. *World J Surg* 2010;34:2299-304. doi: 10.1007/s00268-010-0659-1.
4. Seidel A, Bergamasco N, Miranda F, Previdelli I, Barili E. The importance of small saphenous vein reflux on chronic venous disease clinic. *Int Angiol* 2015;34:30-5.
5. O'Donnell TF Jr, Iafrati MD. The small saphenous vein and other 'neglected' veins of the popliteal fossa: A review. *Phlebology* 2007;22:148-55. doi: 10.1258/026835507781477172.