

# Surgical and non-surgical treatment modalities for glomuvenous malformations

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To the Editor:

We have read, with great interest, an article published in the *Dermatology Online Journal* by Abbas et al. entitled "Glomuvenous malformations in a young man" [1]. In this paper, the authors report on a patient with a biopsy-proven glomuvenous malformation (GVM). On visual inspection, these malformations are often misconstrued with Blue Rubber Bleb Nevus Syndrome (BRBNS) which would require more extensive diagnostic evaluation for gastrointestinal arteriovenous malformations. Although this paper sheds light on diagnostic nuance, it is also important for physicians to be aware of the various treatment modalities for GVM to educate patients in the decision-making process. This letter is written to briefly discuss the various potential treatment options for GVM.

Since the 1920s, the literature has described surgical excision as the primary treatment modality for GVM [2]. Because these lesions are localized to the superficial cutaneous and subcutaneous tissues, excision provides complete and immediate relief [3]. Moreover, these malformations have a low recurrence rate owing to their benign nature [4]. Additional interventions such as sclerotherapy have demonstrated mixed efficacy in the literature. Mounayer et al. evaluated 7 patients with large facial GVMs and demonstrated that sclerotherapy with either Ethibloc, Aetoxisclerol, or ethanol embolotherapy did not improve facial contour nor discoloration; however, surgical resection improved

cosmesis in all seven patients [5]. In stark contrast, Parsi et al. reported on the case of a 59-year-old-man who demonstrated significant improvement of his GVM with sclerotherapy using sodium tetradecyl sulphate (STS) after failing surgical resection [6]. This patient had an extensive GVM which failed prior surgical attempts, developed significant scarring, and demonstrated recurrence.

Although excision has empirically been the primary treatment modality for GVM, preliminary data has demonstrated that laser therapy may be efficacious in cases where large, multiple GVMs are not amenable to surgical resection [7]. A retrospective cohort of 17 patients with GVM treated with dual wavelength pulsed dye laser (PDL) Nd:YAG demonstrated that 94% of these patients achieved at least a 60% reduction in GVM size [8]. There were minimal adverse events with only one patient developing ulceration that resulted in atrophic scarring. A case report by Nguyen et al. also demonstrated the safety and efficacy of combined PDL and Nd:YAG laser therapy in a 6-month-old with a GVM with moderate body surface area involvement that was not amenable to surgical resection [9]. Although there is a paucity of literature validating the use of lasers, data has shown that argon-carbon dioxide may be effective for superficial lesions, whereas PDL may be useful for pain relief and plaque flattening [9]. Because GVMs invade into the dermal and subcutaneous tissues, the 1064nm Nd:YAG laser may penetrate to the targeted chromophores and deliver effective thermal ablation. However, Nd:YAG lasers may also be

associated with a higher risk of scarring and ulceration [9].

The management of GVM should be evaluated on a case-by-case basis. Although smaller, superficial GVMs can be effectively treated with surgical excision, larger and more extensive GVMs may benefit from laser therapy and potentially sclerotherapy. We hope that this letter will help

providers discuss the risks and benefits associated with various treatment options with their patients. Awareness of all treatment modalities will aid in clinical decision-making and will result in better healthcare for our patients.

### Potential conflicts of interest

The authors declare no conflicts of interest.

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