ABSTRACT

Introduction: Some venous malformations (VMs) of the head and neck (HN) may respond well to laser therapy, but the majority of HN VMs require multimodality therapy. The use of GentleYAG® laser in the single modality laser therapy of cutaneous pediatric HN VMs has not yet been described.

Objectives: We sought to report our outcomes and laser settings for use of the GentleYAG® laser on pediatric HN VMs that were treated with single modality laser therapy.

Methods: Retrospective chart review was performed on all pediatric patients with HN VMs treated at our institution with single modality laser therapy between 2002 and 2014. Clinical data including patient demographics, other lasers used, laser settings, complications, and outcomes were recorded.

Results: Eight children received single modality laser therapy that included GentleYAG® laser. The average age at presentation was 1.8 years (0.1 to 5.9 years). Average length of follow-up was 4.1 years (0.8 to 12.6 years). The GentleYAG® laser was the primary laser used for cutaneous disease. Average number of laser sessions per patient was 6 (1 to 8 sessions), with approximately 3-6 months between GentleYAG® laser treatments. Average operative time per session was 6.9 minutes. Typical GentleYAG® laser settings were 3 or 8 mm spot size, 1 Hz, 20 mJ/pulse duration, and 80-220 Joules/cm². All patients demonstrated decreased skin discoloration and decreased VM bulk after use of the GentleYAG® laser. There were no major complications.

Conclusion: When appropriately selected, pediatric HN VMs may be safely treated and have improvement of cutaneous disease with use of the GentleYAG® laser.

METHODS

A retrospective chart review was performed on all pediatric patients with HN VMs treated at our institution with single modality laser therapy between 2002 and 2014. Only those patients whose treatment involved use of the GentleYAG® laser were included in the study. Clinical data including patient demographics, other lasers used, laser settings, complications, and outcomes were recorded.

RESULTS

Eight children received single modality laser therapy that included GentleYAG® laser. The average age at presentation for diagnosis of the VM was 1.8 years (0.1 to 5.9 years). Average length of follow-up from time of diagnosis was 4.1 years (0.8 to 12.6 years). Only 1 of the 8 patients had bilateral disease, while the remaining 7 had unilateral lesions. The severity of the disease was diffuse involvement of the HN in 6 of the 8 patients, 1 had multifocal lesions, and 1 had a single focal lesion. The GentleYAG® laser was the primary laser used for cutaneous disease, though during the study period, 6 of the 8 patients also received treatment(s) with other lasers such as the pulsed dye laser for any red telangiectasias (2 patients), alexandrite laser (2 patients), and Altus Coolglide® Nd:YAG laser (2 patients). Seven of the patients also required used of another Nd:YAG laser for mucosal disease, but the improvement of mucosal disease was not assessed in this study. Average number of laser sessions per patient during the study period was 6 (1 to 8 sessions), with approximately 3-6 months between GentleYAG® laser treatments. Average operative time per session was 6.9 minutes. Typical GentleYAG® laser settings were 3 or 8 mm spot size, 1 Hz, 20 mJ/pulse duration, and 80-220 Joules/cm². All patients demonstrated decreased skin discoloration and decreased VM distention after use of the GentleYAG® laser as reported by clinicians and patients’ family (Figure 1-3). There were no major complications.

DISCUSSION

The Altus and alexandrite lasers were mainly used at our institution during the time period prior to our acquiring a GentleYAG® laser in 2010. Since using the GentleYAG® laser, our use of the alexandrite laser has become much less frequent because our outcomes with the GentleYAG® laser have been excellent with rare complications. No major complications were seen in the current study, though mild atrophic scarring occurred in one patient with eyelid involvement (Figure 2). Corneal shields are extremely important to protect the eyes during treatment in the periorbital area. To our knowledge, this is the first case series that discusses the use of the GentleYAG® laser on this patient population.

CONCLUSIONS

When appropriately selected, pediatric HN VMs may be safely treated and have improvement of cutaneous disease with use of the GentleYAG® laser. In our experience, use of the GentleYAG® laser in this patient population is a safe, effective treatment option for cutaneous involvement of HN VMs.

REFERENCES