Treatment of Lymphatic Malformations: A Systematic Review

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ABSTRACT

Objectives: Systematically review the literature pertaining to head and neck lymphatic malformation (LM) treatment, and use individual-level data presented in qualifying case series to compare efficacy, complications, and functional impact among surgical and sclerotherapy modalities. Determine whether treatment modalities differed by LM stage.

Methods: Systematic Review.

Results: Review articles used a wide range of reporting methods precluding a formal meta-analysis. Most reports were case series (324/332, 97%). In all reports, the primary treatment modality was sclerotherapy (37/41, 91%) followed by surgery (20/41, 49%) and surgery combined with another modality (9/41, 22%). Individual data was present in 289 patients. From this analysis, no treatment modality clearly resulted in superior treatment outcomes. Complications were more frequent in surgical series than were reported in previous case series. Reports did not discuss long-term outcomes.

Conclusion: Standardized guidelines for reporting LM case series do not currently exist, making it difficult to compare treatments and draw definitive conclusions. Future reports of LM treatment outcomes must use the recommended reporting guidelines to allow rigorous comparisons between differing treatment modalities.

INTRODUCTION

Lymphatic malformations (LMs) are rare, acquired anomalies that occur in the head and neck. No consensus has been reached on optimal treatment approach; this uncertainty is, at least in part, due to the fact that treatment responses were not uniform across studies. Treatment modalities include surgery, partial or complete excision and sclerotherapy. Additional options include novel inflammatory drugs or antibiotics; however, their efficacy remains unclear. This study was conducted to review medical literature on LM treatment for the purpose of describing current LM practice and determining evidence to support use of either surgical therapy or sclerotherapy based on imaging description, LM staging, incidence of complications, LM natural history, and resolution of functional impairment from LM.

METHODS

Overview of LM Treatment: Primary therapy was surgical in 16 articles, sclerotherapy in 17, and mixed in 9. Reported LM Treatment Complications: Death related to LM or LM treatment was reported in 41 patients. In 33 LM treatment series, LM-related complications included a range from functional disturbance to vocal cord paralysis, and patients having extracranial treatment under one year of age.

TREATMENT OUTCOMES / COMPLICATIONS IN INDIVIDUAL LEVEL TREATMENT (Table): Patients treated with sclerotherapy reported complete resolution in 1/3 of treated cases. Complications were more frequent in surgical series than were reported in previous case series.

CONCLUSION

To identify the most effective treatments for LM and allow each patient to receive the best possible treatment, we recommend a protocol for future LM treatment reports:

1. Pre-treatment assessment of LM
2. Clinical: age, location, prior treatments, functional impact
3. Radiological findings: to assist in staging
4. Treatment indications: philosophy
5. Postoperative evaluation: duration of hospital stay, number of procedures, duration of follow-up, and functional impact

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