

Percutaneous ethanol sclerotherapy for head-and-neck lymphatic malformation: A systematic review and case report

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Introduction

- Lymphatic malformations (LM) are one of the more commonly encountered cystic head-and-neck tumors.
- Surgical excision is the traditional treatment with inherent peri-operative risks.
- Alternative treatment of these cystic tumors using percutaneous sclerotherapy agents has been proposed with no major consensus on the treatment approaches and sclerotherapy agent choices.

Case Report

- A 22-year-old female presented with left lower left neck swelling for 2 years, grew rapidly over the past 1 year and she experienced discomfort when sleeping.
- The mass was an 8 x 5cm smooth fluctuant mass within the left anterior neck triangle with no superimposed inflammation/ infection, or local mass effect resulting in significant airway compromise.



Figure 1. Pre-operative clinical pictures of the left neck swelling.

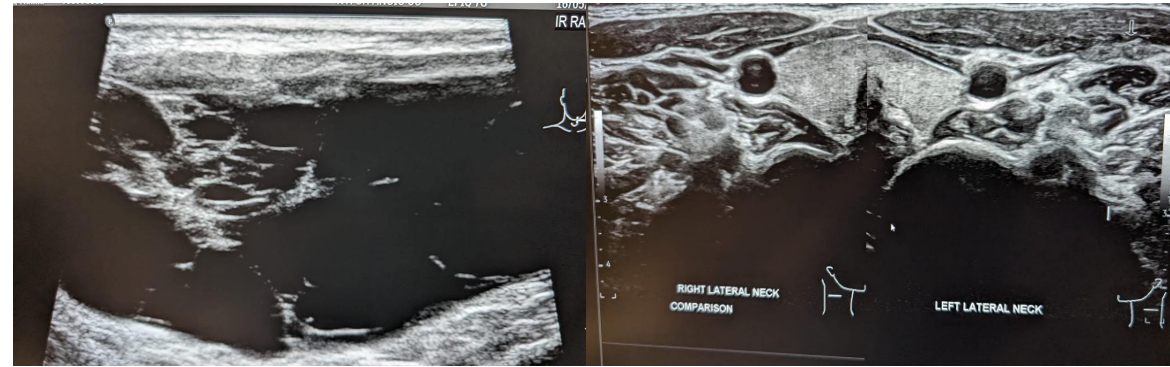


Figure 2. Pre-operative US images.

L: Cystic content of the lesion with multiloculated appearance.

R: Relationship between this lesion and the thyroid/carotid arteries.

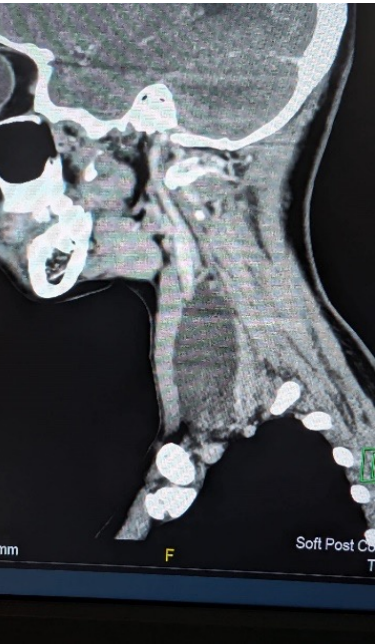
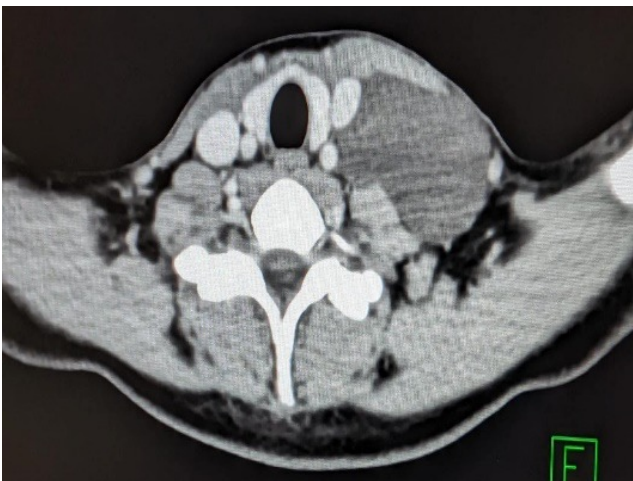
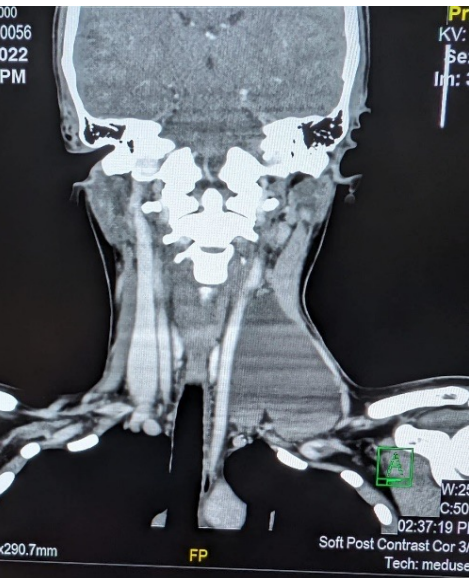


Figure 3. Pre-operative intravenous contrast-enhanced CT neck images in venous phase.

Axial, coronal and sagittal reformatted CT images showing the cystic lesion with no suspicious solid component. The lesion splayed and compressed the vascular structures, most pronounced along the jugular veins.



Procedure

Ultrasound-guided 4Fr coaxial needle system drain was performed under local anesthesia. A total of 85ml of clear serous fluid was manually aspirated.

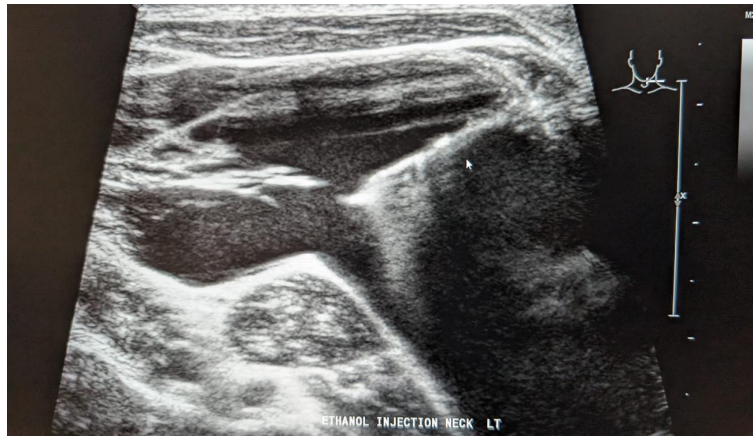


Figure 4. Ultrasound-guided access of the neck LM with a 4Fr coaxial needle.

A total of 40ml of absolute ethanol was instilled into the cyst. Aspiration-instillation cycles with a 25ml syringe were done over 10 min of alcohol indwelling time to circulate the alcohol within the cystic cavity.

3 Month Follow-up

Post-procedural US demonstrated residual cystic lesion measuring 4.3 x 1.5 x 0.4 cm (>50% size reduction) with mixed echogenicity, likely due to wall remnants

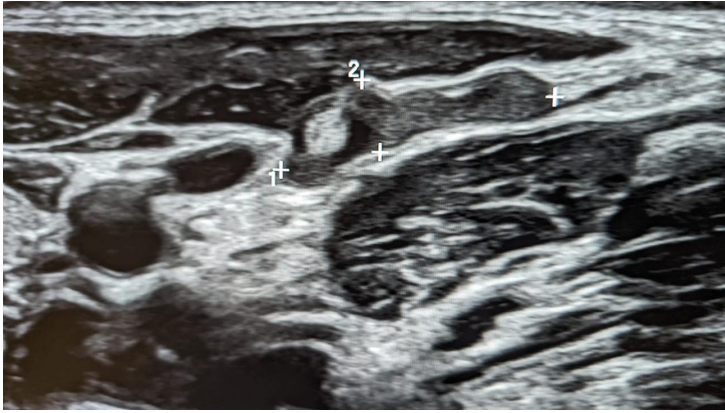


Figure 5. US 3 months after procedure demonstrates residual lesion after percutaneous ethanol sclerotherapy.

Discussion

- Primary excision surgery and primary percutaneous sclerotherapy for head-and-neck LMs produced comparable effectiveness in a multisite comparison retrospective study.¹⁵
- Ethanol is widely available, economical and possesses potent sclerosing properties.⁶
- Potential complications including local skin necrosis/ulceration, nerve damage and systemic effects (hypotension, intoxication, death).^{6,9}
- Individualized approach to management should consider functional limitations, aesthetic concerns, and pain. Surgery and sclerotherapy are both effective treatments for macrocystic lymphatic malformations.¹⁵
- Surgery for microcystic LMs remains challenging due to their infiltrative nature, whereas percutaneous sclerotherapy is often impossible.²¹

Conclusion

- Treatment should be tailored to each patient's specific needs and availability of experienced operators / centers with appropriate volume in either primary excisional surgery or percutaneous sclerotherapy.
- Percutaneous ethanol sclerotherapy is an acceptable option and demonstrated favorable response and good cosmesis result in our young adult patient presented with macrocystic neck LMs.
- Ethanol has benefits of widespread availability and cost-effectiveness in our South-East Asia (SEA) region.
- Limitations of our review are largely due to significant study heterogeneity. Proposed standardization approaches for pre-treatment findings and treatment outcomes include de Serres staging system and Cologne Disease Score (CDS).