Small incisions in small patients: Continued advancement in pediatric thoracoscopy

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Just as thoracic surgeons were undertaking more complex thoroscopic procedures in adults in the early 1990s,¹ our pediatric surgery colleagues were exploring the use of thoracoscopy in infants and children.^{2,3} Advancement of minimally invasive techniques in children required development of appropriately sized instrumentation, including high-definition thoroscopes of smaller diameter and shorter length.⁴ In this issue of the *Journal of Thoracic and Cardiovascular Surgery*, Cheng and colleagues⁵ report the use of thoracoscopy in 3 children for large, symptomatic mediastinal lymphatic malformations. Although the second patient required upsizing of a port for extraction of the cystic malformation, the ports used were either 3 mm or 5 mm in diameter.

Particularly notable was the thoracoscopy performed in a month-old infant who underwent ex utero intrapartum treatment for endotracheal intubation to alleviate the tracheal compression from the large lymphatic malformation (Figure 1).

Potential benefits of thoroscopic resection include (1) avoidance of thoracotomy, with subsequent risk of scoliosis, asymmetric breast growth, and areolar sensitivity⁶⁻¹¹; (2) decreased pain; (3) decreased recovery

Example pediatric thoroscopic port sites.

Central Message

Thoracoscopy can be used safely in pediatric patients to resect symptomatic lymphatic malformations.

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time; and (4) improved scar cosmesis.¹² Risks include (1) incomplete excision of the lymphatic malformation, with recurrence, and (2) damage to intrathoracic structures (eg, phrenic nerves, thoracic duct, and venous structures). These risks also apply to open resection of these malformations, which often have multiple interdigitating portions.

Less-invasive treatments for mediastinal lymphangiomas in children include sclerotherapy, laser therapy, and radiation.¹³⁻¹⁵ Only sporadic case reports or series without long-term follow-up, however, are found in the literature.

This report supports the concept that thoroscopic resection at experienced centers allows a safe, definitive treatment for these compressive malformations. As minimally invasive surgery progresses, the use of smaller incisions for small (and large) patients will continue to require collaboration from industry to provide appropriate technologic advances.

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FIGURE 1. Large mediastinal lymphatic malformation.

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