



Discussion

Slide tracheoplasty for the management of complete tracheal rings

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1. Commentary

Complete tracheal rings are rare, and historically are associated with a high mortality. There are several methods for managing children with complete tracheal rings, and our unit has extensive experience with most of these. We commenced utilizing the tracheal slide technique for operative repair of complete tracheal rings in February 2001, and the same surgical team operated on 10 children with complete tracheal rings over the next 18 months. Some of these children were extremely tenuous, with multiple congenital anomalies. Nine were repaired under cardiac bypass. In all cases, the tracheal surgery was successful. There was one late death not related to the tracheal repair.

We have found slide tracheoplasty to be vastly superior to previous methods of tracheoplasty that we have utilized for the management of complete tracheal rings (Figs. 1–18).

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Fig. 1. Endoscopic view of complete tracheal rings.

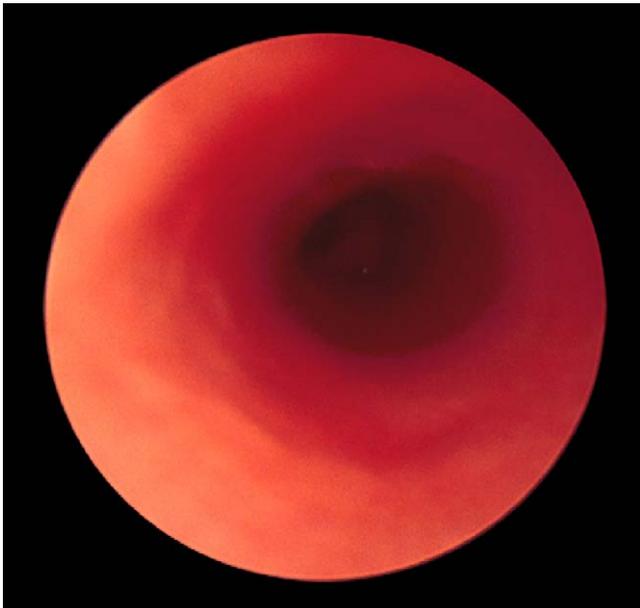


Fig. 2. Pre-op view of 2 1/2 year old boy with complete tracheal rings.

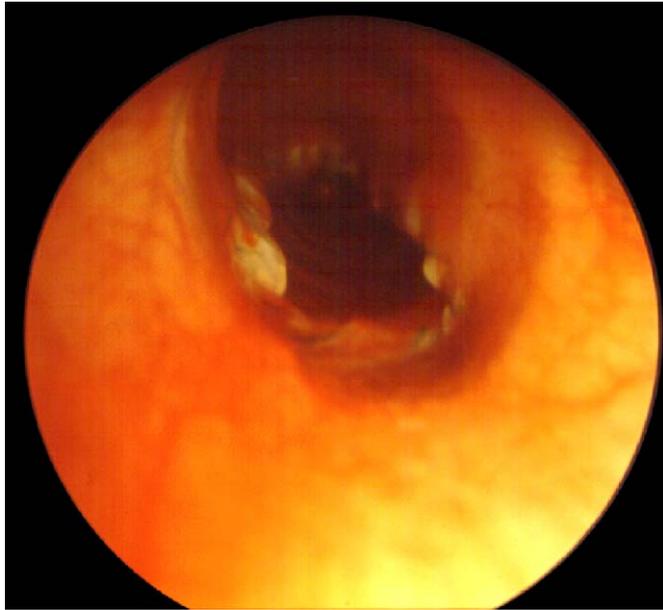


Fig. 3. Post-op view of 2 1/2 year old boy—upper trachea.

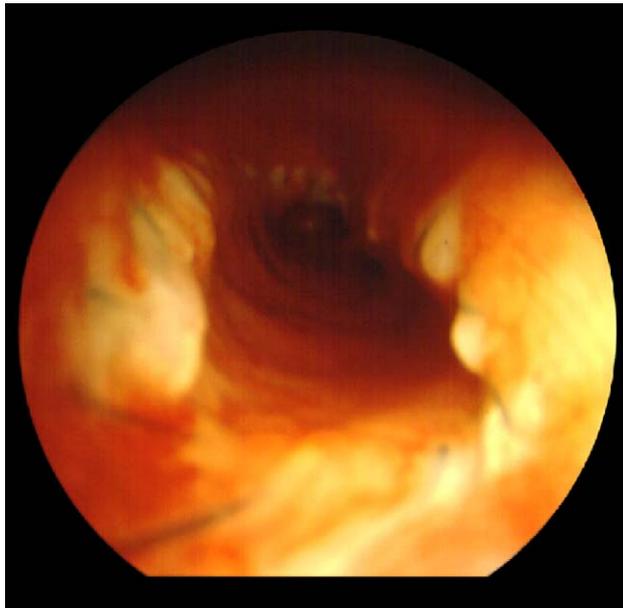


Fig. 4. Post-op view of 2 1/2 year old boy—mid trachea.

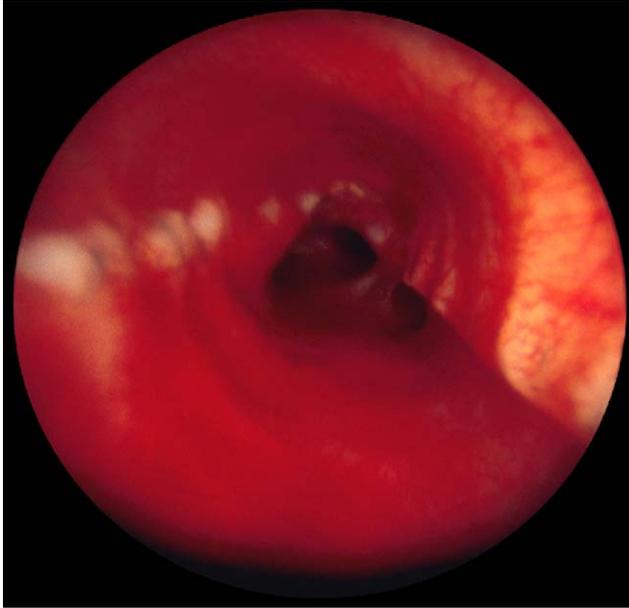


Fig. 5. Post-op view of 2 1/2 year old boy—lower trachea.

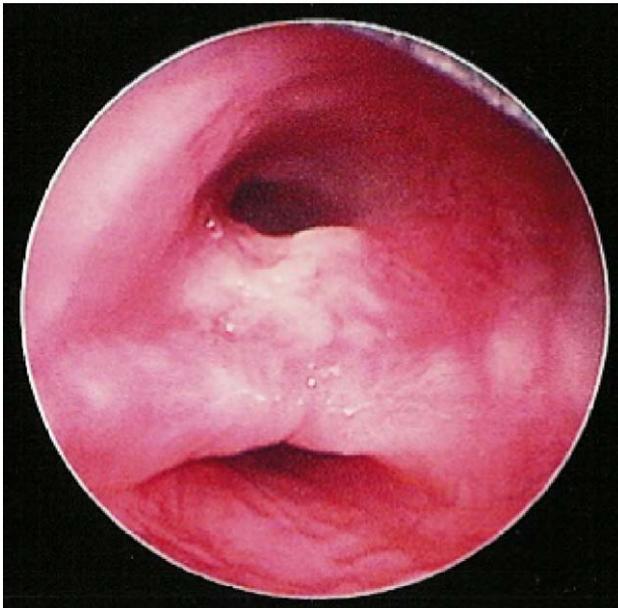


Fig. 6. Pre-op view of boy with TEF (posteriorly) and a short segment of complete tracheal rings just above carina (anteriorly).



Fig. 7. Post-op view of boy with TEF and a short segment of complete tracheal rings.



Fig. 8. Short segment of complete tracheal rings, mid trachea.



Fig. 9. Short segment of complete tracheal rings mid trachea (close-up).

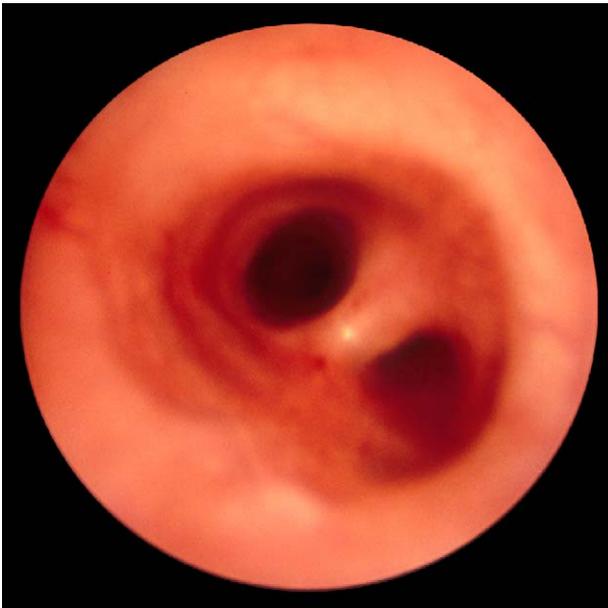


Fig. 10. Pre-op pig (tracheal) bronchus to the right, short segment of complete tracheal rings above carina (to the left).



Fig. 11. Post-op pig (tracheal) bronchus to the right, short segment of complete tracheal rings above carina (in the left).

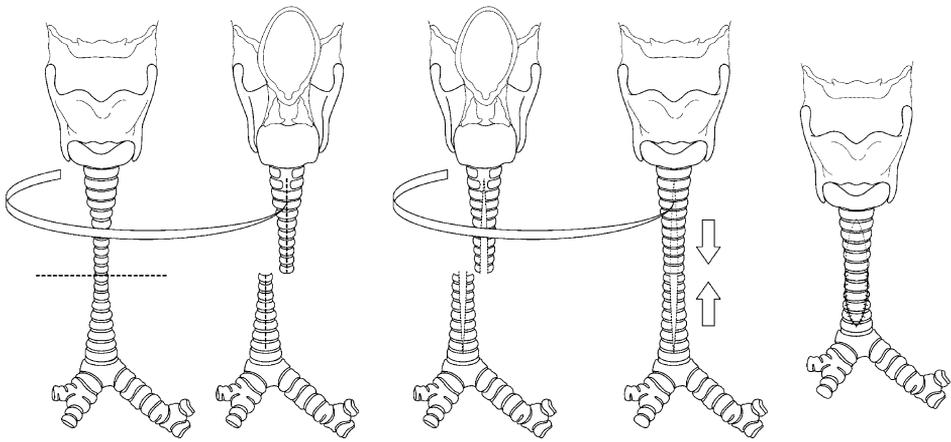


Fig. 12. Diagram slide tracheoplasty.



Fig. 13. Short trachea—view of cords with carina visible.

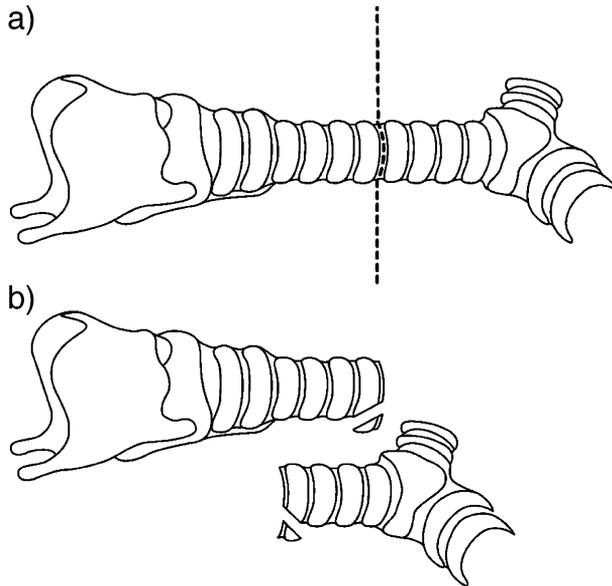


Fig. 14. Diagram slide tracheoplasty.

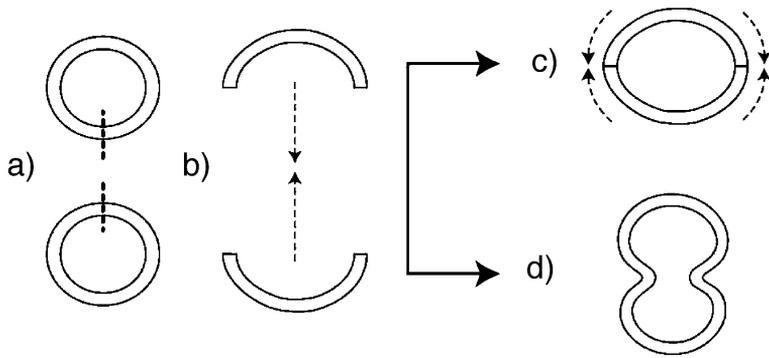


Fig. 15. Diagram slide tracheoplasty illustrating risk of developing a “Figure 8” trachea.



Fig. 16. Pre-op complete rings.



Fig. 17. Early post-up following slide tracheoplasty with a "Figure 8" trachea.

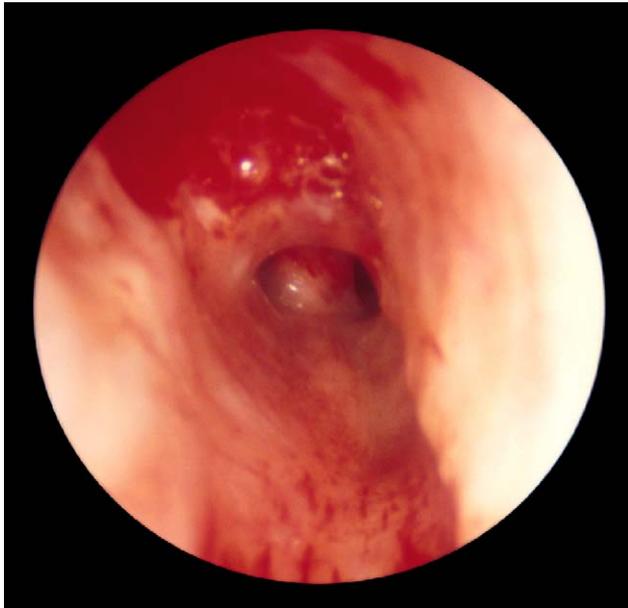


Fig. 18. Late post-up following slide tracheoplasty with a "Figure 8" trachea.