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Tracheal stenosis in children – Vive la différence!

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Tracheal stenosis is an unusual and sometimes lethal condition. Its treatment is basically surgical and different techniques have been proposed. Infants with congenital tracheal stenosis may also have unilateral lung agenesis or severe lung hypoplasia. Different techniques were developed for tracheal stenosis repair: conservative and endoscopic management, tracheal resection with termino-terminal anastomosis, slide or modified plasties and anterior tracheoplasty with costal cartilage graft.

We report 3 children suffering from different types of tracheal stenosis:

1. 6 months old boy with unilateral agenesis of the left lung, tracheal stenosis with closed cartilage rings and malacia of the trachea. Oesophago-tracheal fistula close to the larynx: enlargement of the stenotic trachea and pericard patch, external stenting with a anterior gore-tex patch. Age 13 months: home ventilation.
2. 3 months old girl with severe long tracheal stenosis, kinking of the truncus brachiocephalicus, A. suclavia dextra closely related to the trachealstenosis, atelectasis and AV-malformation in the right upper lobe: slide tracheoplasty, reposition of the right truncus brachiocephalicus and wedge-resection of the AV-malformation in the right upper lobe. Age 16 months: normal respiration, frequent infections of the respiratory tract.
3. 1 month old boy with double outlet right ventricle, malposition of the great vessels, PS, ASD, PDA and tracheal stenosis due to extrinsic vascular compression: 3.5 mm gore-tex-shunt, ligation of the ductus botallii. Age 4 months: CT tracheal stenosis, tracheomalacia, extrinsic vascular compression (aorta): Aortopexia, external stenting, gore-tex-patch-suspension (Hagl-OP). Age 16 months: normal respiration, coarse breath sounds when coughing.

Conclusion: all children were suffering from tracheal stenosis and further malformations of the cardiac-, renal- or gastrointestinal system. A highly specialized team and individual management are essential for good results. No surgical technique corrects all of the anatomic variants of this disease. Long-segment tracheal stenosis is best treated using slide tracheoplasty and concomitant repair of cardiovascular lesions. Unfortunately this technique was not possible in case 1.