The success of laryngotracheal reconstruction with costal cartilage graft and Monnier’s stent for two cases of type IV laryngeal web

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Introduction
Laryngeal web is an uncommon congenital abnormality with four grades of glottic webbing, according to Cohen’s classification. The type IV is the most severe, with 75-90% of glottis length and always with cartilaginous subglottic extension. The infant’s airway is secured by a tracheostomy.

Objective
To report the results of two cases of type IV laryngeal web after laryngotracheal reconstruction (LTR) with costal cartilage grafts and the use of Monnier’s stenting.

Case 1: Girl, tracheostomy on first month of life. Case without association with deletion of chromosome 22q11. Endoscopic diagnosis of type IV laryngeal web (Pic. 1A). We operated her when she was 3. The surgery was LTR with anterior costal graft (Pic.2) and remained with Monnier’s LT-Mold for 60 days. Pic. 1B (after stent removal). She was decanulated 1 month after surgery, without any respiratory symptoms and good voice.

Case 2: Boy, tracheostomy on first days of life, didn’t have genetic consultation yet, but without other malformations. Endoscopic diagnosis of type IV laryngeal web (Pic. 1C). We operated him when he was 18 months. The surgery was LTR with anterior and posterior costal graft (Pic.3) and remained with Monnier’s LT-Mold for 45 days (Pic. 4) Pic. 1D (after stent removal). He was decanulated after 40 days, without respiratory symptoms.

Conclusion
These two reported cases are the success of surgeries in type IV laryngeal web, that is a challenge for airway surgeons. On our opinion, the use of Monnier’s LT-Mold, that permit a better reepithelialisation of the vocal folds, were essential for the success.

Discussion
Laryngotracheal surgery in the paediatric patient differs significantly from airway surgery in adults. Most patients needs tracheostomy when very young. The principle of surgery technique is a lumen enlargement by an anterior and/or posterior interposition of rib cartilage grafts. In order to facilitate healing of the inserted cartilage grafts, an endoluminal stent is necessary in most cases and we can use a LT-mold. The LT-Mold can be endoscopically removed after complete healing of the reconstructed airway.