Utility of Two-Stage Laryngotracheal Reconstruction in the Management of Subglottic Stenosis in Adults

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ABSTRACT

Objective: To evaluate the utility of two-stage laryngotracheal reconstruction (LTR) in the management of subglottic stenosis (SS).

Methods: Medical records have been proposed for the treatment of SS. Operative correction of this condition has been possible with success in the pediatric population, achieving a 97% successful decannulation rate in the adult population, however, the procedure has been considerably less successful in the adult population. To date, laryngotracheal reconstruction (LTR) has been used as a rare alternative to LTR in adults. CTR has had a higher rate of successful decannulation compared to our department. However, there are also reports in the literature of high morbidity and mortality.

Results: A total of twelve patients were reviewed from 2003 to 2007. All patients who underwent LTR were included in our case series.

Conclusions: It is our opinion that LTR is a viable and preferred option for adult patients with SS. LTR is a viable and safer procedure in adult patients with SS. This procedure has the potential to be applied in adults with SS as well utilizing modern LTR techniques. It has the add-on benefit of avoiding the pitfalls and complications of cricotracheal reconstruction.

METHODS

Results

Twelve patients with subglottic stenosis (Figure 1) who underwent laryngotracheal reconstruction were identified. The age range was 16 to 86 years with an average of 44 years. The study included one patient with Grade I stenosis (<70% stenosis), three with Grade II (>70% to <90%), seven with Grade III (>90%) with larynx present, and one patient with Grade IV (complete obstruction with no larynx) (Figure 2).

These patients developed SGS secondary to burn injury and prolonged intubation, three were secondary to external trauma/motor vehicle accidents, and six were primary. At the time of presentation, the etiology of SGS was known in 10/12 patients (83%) prior to LTR surgery, being referred to our department (4/12 patients) (Figure 3). All of the patients in this study were treated by LTR with an anterior or anterior and posterior cricoid split with graft procedure. All but the earliest of these was a two-stage reconstruction. The age range was 16 to 86 years with an average of 44 years.

Twelve patients who underwent LTR were included in our case series.

Conclusions: It is our opinion that LTR is a viable and preferred option for adult patients with SGS. LTR is a viable and safer procedure in adult patients with SGS. This procedure has the potential to be applied in adults with SGS as well utilizing modern LTR techniques. It has the add-on benefit of avoiding the pitfalls and complications of cricotracheal reconstruction.