

A pilot study for intractable benign central airway stenosis: surgical treatment combined with Interventional therapy

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Objectives : To evaluate the efficacy and security of surgical treatment combined with Interventional therapy for benign central airway stenosis(BAS).

Methods: Seven intractable BAS patients were selected into treatment group from Oct. 2011 to Oct. 2013. Stenosis causes, types, position, degree and duration were evaluated. Surgical treatment including: resection of tracheal stenosis segment , end-to-end anastomosis, and silicone tube implant in the trachea, external fixation with nylon line. Schedule postoperative bronchoscopy procedures were operated and the corresponding complications were solved. After a 12 months follow-up, compared the airway diameter, airway stricture rate, dyspnea score, clinical stationary time before and after the therapy to evaluate its curative effect and side effect . Tracheal stenosis segments were sent to histopathologic examination, including observation at high magnification, special staining test, immunohistochemical test, analysis of the cause of the refractory.

Results:Seven patients with intractable benign central airway stenosis were treated. Stenosis segments located in the subglottic (1.86±0.62) cm, (2.87±0.48) cm in length, preoperative interventional treatment for an average of 8.8 (5~22) times. The recent effective rate was 100%.(Table 1)

A 12 months follow-up, 6 patients, did not appear restenosis; 1 patients appear restenosis and received balloon dilation and metal stent. Clinical stationary time was increased from (8.72±4.86) days before the therapy to (188.83±87.30) days after therapy (P<0.01) .

Tracheal stenosis segment pathology: cartilage lesions 71.4% (5/7), granuloma formation 57.1% (4/7), submucosal fibrous tissue hyperplasia 57.1% (4/7), bronchial epithelial squamous metaplasia 42.8% (3/7).

Conclusion : Surgical treatment combined with Interventional therapy for BAS has good curative effect. The tracheal cartilage lesion, granuloma hyperplasia may be the important factors of intractable stenosis.

Table 1 treatment results

evaluation time	airway diameter(m m)	Stricture <u>rate(%)</u>	<u>Dyspnea</u> score
before resection	2.46±1.82	81.25±13.21	4.12±0.48
after resection	11.56±1.33	22.68±15.14	0.63±0.55
P	<0.01	<0.01	<0.01