

Table 1. Causes of bilateral vocal cord immobility

I. Central nervous system disease	
A. Transient ischemic attacks	
B. Arnold-Chiari malformation	
C. Hydrocephalus	
D. Meningomyelocele	
E. Syringomyelia	
F. Status post head trauma	
G. Dystonia	
H. Drug-induced dyskinesia	
I. Myoclonus	
J. Parkinson-plus syndrome (multiple-system atrophys, Shy-Drager syndrome, progressive supranuclear palsy)	
II. Neuromuscular disease	
A. Myasthenia gravis	
B. Multiple sclerosis	
C. Amyotrophic lateral sclerosis	
D. Guillain-Barre syndrome	
E. Myopathy	
F. Pseudotetanus (spasmophilia, hyperventilation)	
III. Local	
A. Vocal cord fixation	
1. Arytenoid dislocation	
2. Cricoarytenoid arthritis, synovitis	
3. Tumors	
B. Laryngospasm associated with asthma	
C. Laryngospasm associated with gastroesophageal reflux disease	
D. Laryngospasm caused by inflammation after upper respiratory infection	
E. Trauma	
1. External neck (blunt or sharp)	
2. Intubation	
IV. Peripheral nerve injury	
A. Neoplastic	
1. Neck	
2. Chest	
B. Iatrogenic	
1. Thyroid surgery	
2. Chest surgery	
3. Neck surgery	
C. Idiopathic	
V. Psychogenic	
A. Conversion disorder	
B. Malingerers	
C. Psychogenic + organic neurologic disease	

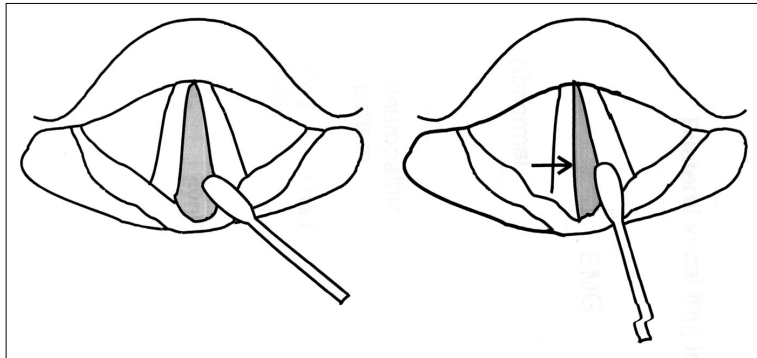


Fig. 1. Assessment of arytenoid mobility and interarytenoid tethering by direct palpation.

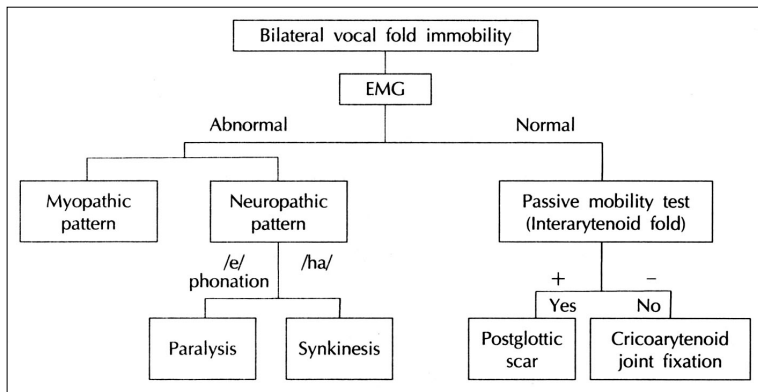


Fig. 2. Diagnostic workup of bilateral vocal fold immobility.

Fig. 2

1)

약물치료

치 료

가

6

가

가

가

(posterior glottic scar)

가

(spasmodic dysphonia)

Botulinum toxin A(Botox)

가

가

가

11)

(reinner-

vation)

laryngeal synkinesis가

가

Botox

(lateral cricoarytenoid muscle)

10)

1)

수술적 치료

1948 Thornell¹⁶⁾ (arytenoidectomy), 1972

Whicker Devine¹⁷⁾ 92%

96% 가

static conservative procedure, 가 static destructive procedure (Table 2).

dynamic static conservative procedure가 , static destructive procedure

bypass

History 가 (breathy), 가

가 Ossoff¹⁸⁾ 28

86%

Remacle¹⁹⁾ (subtotal arytenoidectomy) 41

39

King¹³⁾ , 1941 Kelly¹⁴⁾ 1946

Woodman¹⁵⁾ King to²¹⁾ Benninger,¹⁰⁾ Chalky,²⁰⁾ Sa-

Table 2. Classification of surgical treatment

Dynamic procedure
- reinnervation
- laryngeal pacing
Static conservative procedure
- suture lateralization without arytenoidectomy
Static destructive procedure
- suture lateralization with arytenoidectomy
- laser cordectomy or cordotomy
- laser arytenoidectomy with or without cordectomy

(submucosal arytenoidectomy) (Fig. 3).

가

가 Sato²¹⁾ fibrin glue

, Benninger¹⁰⁾ (sub-mucosal partial arytenoidectomy) suture later-

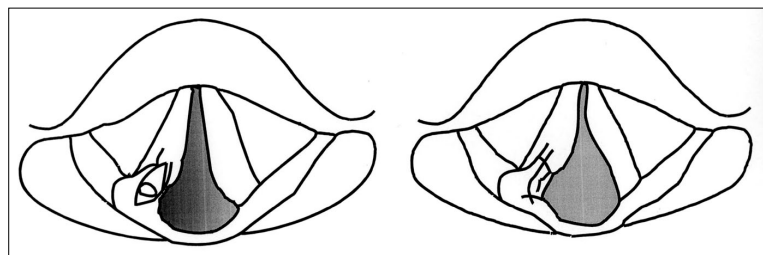


Fig. 3. Submucosal arytenoidectomy.

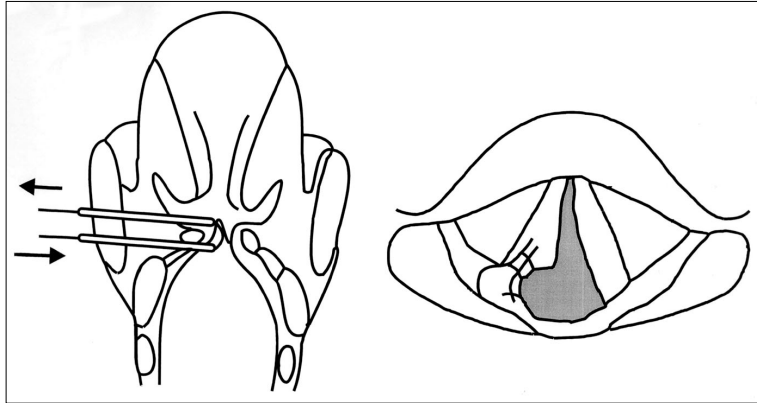


Fig. 4. Submucosal partial arytenoidectomy with stitch lateralization.

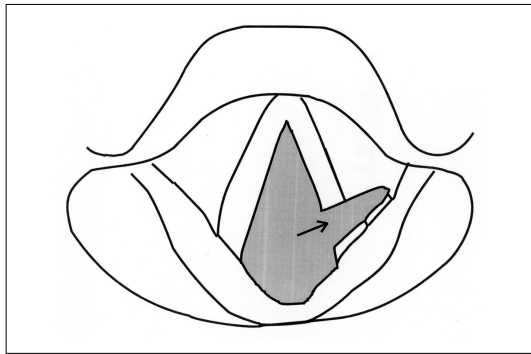


Fig. 5. Posterior cordectomy.

alization

(Fig. 4).

Dennis ²²⁾

(posterior cordectomy)

2/3

(Fig. 5).

. Lichtenberger ²³⁾ endo -
extralaryngeal needle carrier la -
teralization

(submucosal corde -
ctomy) suture lateralization
(submucosal cordectomy
with arytenoidectomy) suture lateralization

²³⁾ Benninger ¹⁰⁾
(cordotomy with
anterolateral arytenoidectomy) . La -
ccourreye ²⁴⁾ (posterior cordo -
tomy) 가
. Segas ²⁵⁾ CO₂ KTP - 532
laser
가
Eckel ²⁶⁾

신경재지배

가

(posterior cricoarytenoid muscle, PCA)
(reinnervation)

가

1976 Tucker²⁷⁾가

(omohyoid muscle)

가

(ansa hypo -
glossi)

5

100% 202 lateralization
 74% (phrenic nerve) electrical pacing
 가 Doyle²⁹⁻³¹⁾ Doyle³⁰⁾
 가 12 9
 Crumley³¹⁾
 3
 가
 Electrical pacing
 pacemaker
 가 가
 1996 Zelear³³⁾
 electrical pacing
 onics Inc.) Itrel® (Medtr -
 결론
 , syskinesis,
 가
 passive
 mobility test가
 CT, X- 가
 가
 CO₂ laser

중심 단어 :

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