

초기 중이 진주종의 치료

박 기 현

Management of Early Cholesteatoma

Keehyun Park, MD, PhD

Department of Otolaryngology, Ajou University School of Medicine, Suwon, Korea

-ABSTRACT-

Chronic otitis media with cholesteatoma had been one of the most prevalent forms of otological disease. However, recently, the incidence of chronic otitis media have decreased owing to better economic status and health care. Thus, cases of middle ear surgery have also decreased relatively in number. So it seems that otologists nowadays should be engaged in revision surgery of the middle ear and management of early cholesteatoma. While the incidence of extensive or complicated cholesteatoma has dramatically decreased for last decades, the early staged or less extensive cholesteatoma and retraction pockets are more frequently found. Especially localized adhesive otitis media, usually posterior tympanic membrane, is one of the most difficult dilemmas for the otologist. There are several controversial issues for managing patients with early cholesteatoma : 1) conservative care or surgical treatment 2) techniques of surgery 3) whether or not mastoidectomy.

So surgery for early cholesteatoma is thought to be reconstructive rather than destructive and it can be a prophylactic operation. I proposed a strategy for the management of early cholesteatoma which was based on safe marsupialization of retraction pocket or cholesteatoma, preservation of the mucosa, adequate ventilation, and prevention of retraction pocket. In case of attic retraction pocket or cholesteatoma, atticotomy with scutumplasty was made. On the other hand, the procedure to remove posterior annular bone and posterior scutum to allow access tympanic sinus and posterior attic space designated as posterior sinusectomy with reconstruction were applied to sinus retraction pocket or cholesteatoma. Early tensa retraction cholesteatoma would be managed as the combination of atticotomy and posterior sinusectomy. So I preferred the term "atticosinoplasty" which includes attic reconstruction with scutumplasty after atticotomy and posterior sinusectomy. If the disease seems to extend to mastoid, endoscopes were introduced transmeatally. If cholesteatoma occupies in mastoid, complete mastoidectomy is made, and sometimes mastoid cavity is obliterated to eliminate the cavity problems. During the last 7 years, I managed surgically 208 cases of attic or sinus cholesteatoma, so-called early cholesteatoma, among which there were 45 cases of atticosinoplasty. I analysed 45 cases with atticosinoplasty with special reference to period of postoperative care and hearing result, as compared to cases with mastoid obliteration and open cavity mastoidectomy.

In conclusion, I personally think that middle ear cholesteatoma has a possibility of different clinical entity rather than a kind of chronic otitis media, eustachion tube dysfunction can not be always a prerequisite of middle ear cholesteatoma but it can be a secondary phenomenon, and finally surgery for early cholesteatoma is reconstructive rather than destructive and it can be a prophylactic operation. (J Clinical Otolaryngol 2002;13:13-19)

KEY WORDS : Retraction pocket · Early cholesteatoma · Functional surgery.

서 론

가

tyimpanoplasty

anatomy)

1950 Wullstein¹⁾ Shambaugh (mastery of temporal bone

가 . 1960 Jansen²⁾ intact canal

wall mastoidectomy

가 1970 Sheehy³⁾ intact canal wall mastoi-

dectomy open ca-

cavity mastoidectomy intact canal wall mastoi-

dectomy . 1970

ossiculoplasty

ossiculoplasty

(con-

servative) (minimally invasive) (endoscopic)

(functional)

(functional middle ear surgery) (complete removal of cholesteatoma) (preservation of the mucosa), (adequate ventilation), (prevention of retraction)

가

“ atticosinoplasty ”

7

초기 중이 진주종의 수술로써 “Atticosinoplasty” 의 개념

4가

anterior tympanomy 가 “ atticosinoplasty ” . attic cholesteatoma

atticotomy attic reconstruction

sinus cholesteatoma posterior annular bone posterior scutum tympanic sinus posterior attic space

posterior sinusectomy annuloplasty

tenosa retraction cholesteatoma atticotomy posterior sinusectomy scutumplasty annuloplasty . atticotomy posterior sinusectomy middle ear endoscope

가

scutumplasty annuloplasty reconstructive surgery가 (Fig. 1). “ atticosinoplasty ” atticotomy, posterior sinusectomy, scutumplasty, annuloplasty 4

“ atticosinoplasty ” (Table 1)

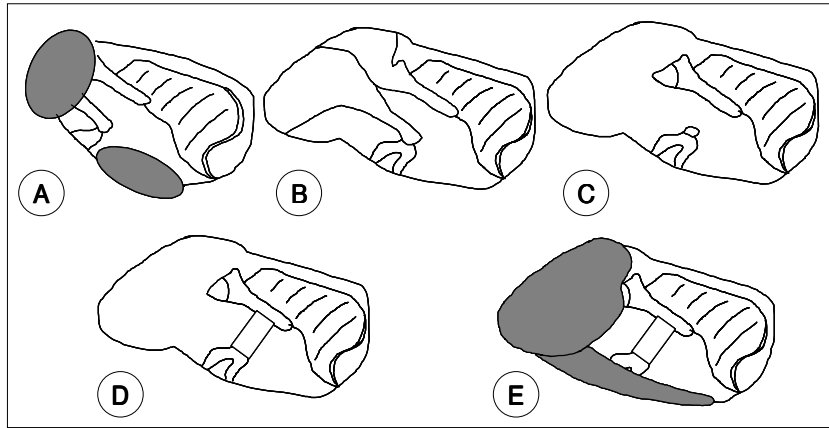


Fig. 1. Schematic operation procedure of atticosinoplasty. A : Attic cholesteatoma and sinus cholesteatoma, B : Atticotomy and posterior sinusectomy, C : Removal of the incus and malleus head, D : Ossiculoplasty, E : Scutumplasty and annuloplasty.

Table 1. Prerequisites for atticosinoplasty

1. No otorrhea at the time of operation.
2. Complete removal of cholesteatoma matrix confined to the epitympanum and posterior tympanum.
3. Intact mucosa around E-tube orifice in operation field.
4. Removal of incus and malleus head.
5. Removal of cog.

Table 2. Materials and method

Atticosinoplasty (45 cases)	
Mean age :	34.2 (17 - 56), m/f : 17/28
Follow-up period :	8 - 72 months
Mastoid obliteration (35 cases)	
Mean age :	34.7 (16 - 56), m/f : 18/17
Follow-up period :	15 - 71 months
Open cavity mastoidectomy (75 cases)	
Mean age :	32.3 (17 - 59), m/f : 34/41
Follow-up period :	6 - 72 months

, supratubal recess
 incus malleus head
 anterior attic bony plate(cog)

**“Atticosinoplasty” 의
 시술방법 및 성적결과**

1994 6 2001 6 7

208 6
 가 atticosinoplasty 45 , mastoid obliteration
 35 , open cavity mastoidectomy 75
 (Table 2). endoaural
 incision skin flap

posterior mesotympanum
 open cavity mastoidectomy
 가 atticotomy
 incus malleus
 head

anterior attic bony plate가
 supratubal recess
 tympanic sinus posterior attic space
 posterior sinusectomy , sinus
 tympani가 posterior
 sinusectomy 가 . atticotomy posterior
 sinusectomy , 70° end-
 oscope mastoid ad antrum

endoaural incision 가
 tragal cartilage . perichondrium
 drum graft cartilage attic defect po-

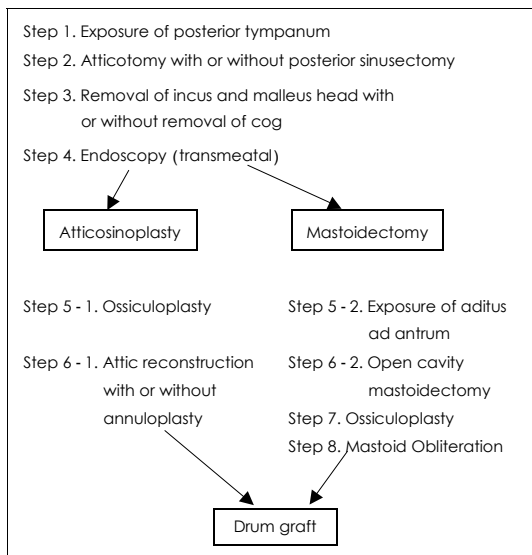


Fig. 2. Steps of surgery for early cholesteatoma.

Table 3. Pure tone average (43.2 dB) before atticosinoplasty

Within 30 dB	13 cases (28.9%)
31 - 50 dB	22 cases (48.9%)
Over 51 dB	10 cases (22.2%)

Table 4. Pure tone average (32.0 dB) after atticosinoplasty

Within 30 dB	27 cases (60.0%)
31 - 50 dB	11 cases (24.4%)
Over 51 dB	7 cases (15.6%)

sterior annular bone defect .
 scutumplasty annuloplasty ossiculoplasty
 가 malleus handle
 . stapes suprastructure
 가 가 malleus strut
 가 (Fig. 1).
 가 가

가 cavity problem
 posterior buttress bridge 가
 bone chip glass ionomer cement
 mastoid obliteration (Fig. 2).
 Atticosinoplasty 45 pure tone

Table 5. Hearing result of atticosinoplasty

Better	22 cases (48.9%)
Worse	5 cases (11.1%)
No change	18 cases (40.0%)

better : air conduction better than 20 dB
 worse : air conduction worse than 20 dB

Table 6. Hearing gain according to each technique

Atticosinoplasty	60.0% (27/45)
Mastoid obliteration	31.4% (11/35)
Open cavity mastoidectomy	33.3% (25/75)

Hearing gain : air-bone gap close within 20 dB

Table 7. Complications of atticosinoplasty

Attic defect	: 1 case
Attic retraction	: 1 case
Pars tensa retraction	: 1 case
Pars tensa perforation	: 1 case
Reduced bone conduction (high tone loss)	: 1 case

average 43.2 dB (Table 3), pure
 tone average 32.0 dB (Table 4). atticosin-
 oplasty 20 dB 가 48.9%,
 가 가 40.0%, 20 dB 가
 11.1% (Table 5). 가 20 dB
 atticosinoplasty 60.0%,
 31.4%, 33.3%
 atticosinoplasty
 (Table 6). atticosin-
 oplasty attic defect, attic retraction,
 pars tensa retraction, pars tensa perforation,
 가 1 (Table 7).
 attic defect 1 4

residual cholesteatoma .

고 찰

Tos⁴⁻⁶⁾
 (attic cholesteatoma), (sinus chole-
 steatoma), (tensa retraction chol-

(cholesteatoma) 가 ,
 ,
 10)
 tympanic diaphragm
 prussack's space , aditus ad antrum tympanic isthmus
 tympanic isthmus . tympanic is-
 thmus
 ,
 11)
 (sinus tympani) (posterior tympanic isthmus
 tympanum) gas 가
 , aditus ad antrum, 가 12)
 , aditus ad antrum,
 (lateral attic cholesteatoma)
 ,
 (medial attic cholesteatoma) . "attico-
 7) Tos sinoplasty"
 가 가
 가 가 . "att-
 icosinoplasty" Tos 가
 , 가
 atticotomy attic recon-
 struction , posterior Jansen²⁾ posterior tympanotomy Sheehy³⁾
 posterior sinusectomy annuloplasty , intact canal wall mastoidectomy 가 facial re-
 atticotomy posterior sin- cess retraction
 usectomy scutumplasty annuloplasty pocket ,
 (middle ear cleft) intact canal wall
 tympanic diaphragm⁸⁾⁹⁾ (anteroinferior mastoidectomy open cavity mastoidectomy
 compartment) (posterosuperior compart- 13)
 ment) mesotympanum, hy-
 potympanum, protympanum ,
 , aditus ad antrum, mastoid air cell
 system
 (mucociliary function) mastoid obliteration
 gas exchange , 14)
 gas exchange osteoplastic epitympanotomy¹⁵⁾ com-
 bined approach tympanoplasty¹⁶⁾ lateral tympano-
 tomy technique¹⁷⁾ . fa-

cial recess posterior tym-
 panotomy , retraction pocket, potential cholesteatoma(
 tympanic isthmus precholesteatoma)
 . Fisch¹⁸⁾
 tensor chorda fold incus superior
 malleolar fold malleus head
 epitympanectomy , Morimitsu¹⁹⁾ mastoidectomy가 가
 malleus head pneumatization 가 Fig. 2
 bony plate가 가 가
 malleus
 head bony plate anterior epitym-
 panum protympanum
 anterior tympanotomy . “ cog ”
 bony plate가 “ atticusinoplasty ”
 supratubal recess 7
 retraction pocket recurrent chol-
 esteatoma ,
 supratubal recess bony plate
 , bony plate
 recurrent cholesteatoma Mor-
 imitsu¹⁹⁾ 가
 Wullstein(1974)¹⁵⁾ 가
 anterior tympanotomy su-
 pratubal recess
 가 “ atticusinoplasty ” incus ma-
 lleus head bony plate
 , supratubal recess
 . anterior
 tympanotomy 가
 anterior attico - tympanotomy,²⁰⁾ superior and anterior
 tympanotomy,²¹⁾ posterior atticotomy,²²⁾ superior
 tubotomy²³⁾ .
 가
 가
 가
 action pocket 가 retr-
 , (adhesive otitis media)

결 론

“ atticusinoplasty ”

중심 단어 :

REFERENCES

- 1) Wullstein H. *Theory and practice of tympanoplasty. Laryngoscope* 1956;66:1076-93.
- 2) Jansen C. *Posteriore Tympanotomie: Zugang zum Mittelohr mit Erhaltung des ausseren Gehoergangs. Arch Otolaryngol* 1967;188:2-6.
- 3) Sheehy JL, Patterson ME. *Intact canal wall tympanoplasty with mastoidectomy. Laryngoscope* 1967;77:1502-42.
- 4) Tos M, Holm-Jensen S, Sorensen CH. *Changes in prevalence of secretory otitis from summer to winter in four-year old children. Am J Otol* 1981;2:324-7.
- 5) Tos M. *Sequelae after secretory otitis and pathogenesis of attic cholesteatoma. In: Cholesteatoma and mastoid surgery. Proceedings of the 4th International conference. Nakono et al. (eds), Amsterdam, Kugler Publications;1993. p.289-94.*
- 6) Tos M. *Pathogenesis of sinus and tensa retraction cholesteatoma. In:Cholesteatoma and mastoid surgery. Proceedings of the 5th International conference. Sanna et al. (eds), Rome,*

- CIC Edizioni Internazionali;1997. p.3-8.
- 7) Chun YM, Park K, Shin SJ, Kim BH. *Clinical appearances on the extension of attic cholesteatoma. Korean J Otolaryngol* 1998;41:32-6.
 - 8) Chatellier HP, Lemoine J. *Le diaphragme inter-attico-tympanique du nouveau-ne': description de sa morphologie: considerations sur son role pathogenique dans les oto-mastoidites cloisonnees du nourrisson. Ann Otolaryngol Chir Cervicofac* 1946;13:534-66.
 - 9) Proctor B. *The development of the middle ear spaces and their surgical significance. J Laryngol Otol* 1964;78:631-48.
 - 10) Ars B. *Pathogenesis of acquired cholesteatoma. In: Pathogenesis in cholesteatoma. Ars B (ed), Hague, Kugler publications;1999. p.1-18.*
 - 11) Aimi k. *The tympanic isthmus: its anatomy and clinical significance. Laryngoscope* 1978;88:1067-81.
 - 12) Yoon TH, Paparella MM, Aeppli DM. *Pathology and pathogenesis of tympanic retraction. Am J Otolaryngol* 1990; 11:10-7.
 - 13) Sheehy JL. *Acquired cholesteatoma in adults. Otolaryngol Clin Nor Am* 1989;22:1041-53.
 - 14) Palva T. *Operative technique in mastoid obliteration. Acta Otolaryngol (Stockh)* 1973;75:289-90.
 - 15) Wullstein SR. *Osteoplastic epitympanotomy. Am Otol Rhinol Laryngol* 1974;83:663-8.
 - 16) Smyth GD. *Postoperative cholesteatoma in combined approach tympanoplasty. J Laryngol Otol* 1976;90:597-621.
 - 17) Tos M. *Modification of combined approach tympanoplasty in attic cholesteatoma. Arch Otolaryngol Head Neck Surg* 1982;108:772-8.
 - 18) Fisch U. *Closed mastoido-epitympanectomy with tympanoplasty. In: Tympanoplasty, mastoidectomy and stapes surgery. Stuttgart, Thieme;1994. p.154-63.*
 - 19) Morimitzu T, Matsumoto I, Nagai T, Nagai M, Ide M, Makino K, et al. *Pathogenesis of cholesteatoma based on clinical results of anterior tympanotomy. Auris Nasus Larynx (Tokyo)* 1989;16 (suppl 1):9-14.
 - 20) Farrier JB. *The anterior attico-tympanotomy. Laryngoscope* 1968;76:768-79.
 - 21) Portmann M. *The choice of techniques of the surgery of chronic otitis media with cholesteatoma. J Laryngol Otol* 1985;89:533-47.
 - 22) Proctor B. *Surgical anatomy of the ear and temporal bone. New York, Thieme;1989. p.83-4.*
 - 23) Zini C, Bacciu S, Sandellari R, Pasanisi E. *Intraoperative management of the osseous eustachian tube: technique and results. In: Cholesteatoma and mastoid surgery. Proceedings of 3rd International conference. Tos M, et al. (eds), Amsterdam, Kugler and Ghedini;1989. p.533-41.*