Mastoid cavity obliteration in CWD mastoidectomy with periosteal-pericranial flap: A 10-year experience*

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Abstract

Aim: To present our ten-year experience in mastoid obliteration using the inferiorly based postauricular periosteal-pericranial flap in canal wall down (CWD) tympanomastoidectomy, and review its efficacy in producing a dry, small, low-maintenance mastoid cavity.

Materials and methods: A retrospective study of sixty-four consecutive procedures of CWD tympanomastoidectomy was conducted over the period from 2007 to 2017 for the treatment of active chronic otitis media, with or without cholesteatoma**.** The main outcome measure was the successful control of suppuration to create a dry, self-cleansing mastoid cavity.

Results: Fifty-three ears (82.8 %) had a small, dry, healthy, and self-cleaning mastoid cavity. Four ears (6.3%) had intermittent otorrhea easily controlled by topical and systemic antibiotic treatment and aural toileting. Seven patients (10.9 %) had persistent otorrhea of which three had meatal stenosis, two had granulation tissue and two had recurrence of cholesteatoma. Outcomes remained stable over progressively more extended follow-up periods (up to 132 months).

Conclusion: The use of postauricular periosteal-pericranial flap for mastoid obliteration in CWD tympanomastoidectomy is a very effective technique that results in a dry, small, self-cleaning mastoid cavity in 89.1 % of patients with active chronic otitis media with or without cholesteatoma.

Keywords: Tympanomastoidectomy; Cholesteatoma; Chronic otitis media; Canal wall down; Periosteal flap; Obliteration.

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Introduction

Tympanomastoidectomy is the gold standard treatment modality for chronic otitis media (COM) with or without cholesteatoma (1, 3). The goal of tympanomastoidectomy surgery is the eradication of the disease and creation of a dry, easy-care, self-cleaning mastoid cavity with hearing preservation or reconstruction (1, 2). Canal-wall-down (CWD) mastoidectomy has some disadvantages which are related to the mastoid cavity itself. These include ear discharge, susceptibility to infection with water exposure, the need for regular cleaning due to excessive wax

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formation, and calorically induced vertigo caused by warm or cold air or water exposure. In addition, a large meatoplasty usually results in difficulty fitting conventional hearing aids as well as a major cosmetic drawback (4-8).

Mastoid cavity obliteration notion emerged to eliminate the disadvantages of a problematic mastoid cavity and somehow restore or at least maintain middle ear and mastoid cavity hearing mechanics (4, 5). The combination of CWD procedure with mastoid obliteration has been shown to retain some advantages and reduce other potential disadvantages of this procedure (7-11). The incidence of pain, giddiness, and wax formation are markedly reduced and healing expedited in obliterated cavities when compared to open ones (12). Ever since Mosher first introduced the concept of obliteration in 1911 (13), many methods and materials were described for this purpose. The most common and popular techniques consist of local flaps (muscle, periosteum, or fascia), free autologous grafts (bone, cartilage, fat, fascia), and even alloplastic grafts such as hydroxyapatite, silicon and synthetic bones (4-6, 14). It has been shown that soft tissue flaps are superior to filler materials. Therefore, more emphasis should be placed to encourage surgeons to master various obliteration techniques, especially when operating in revision mastoidectomy cases (8, 10, 15).

At our institution, we have been using postauricular periosteal flap and autologous materials (temporalis fascia, cartilage, fat, bone pate) for mastoid obliteration for over two decades. Since 2007 we have been using the inferiorly based, postauricular periosteal-pericranial flap with bone pate for mastoid obliteration with excellent results. The pericranial extension of this flap provided additional length permitting it to reach anatomical areas that the periosteal flap alone couldn't reach, such as superior and anterior to the lateral canal, the junction of tegmen mastoideum with the labyrinth and the sinodural angle. The flap also resulted in a better reduction of cavity size (7). In this study, we describe the outcomes of this technique in sixty-four consecutive procedures.

Material and Methods

Patients

A retrospective study of sixty-four consecutive procedures of CWD tympanomastoidectomy was conducted over the period from 2007 to 2017 for the treatment of active chronic otitis media, with or without cholesteatoma. Inclusion criteria included patients who underwent CWD tympanomastoidectomy and obliteration of mastoid cavity using an inferiorly pedicled, periosteal-pericranial flap, with at least 12 months of postoperative outpatient follow-up.

The primary outcome measure was the control of suppuration and creation of a dry, low-maintenance mastoid cavity. Evaluation was performed using a semiquantitative scale, which is a four-point rating scale to assess the efficacy of mastoid surgery in controlling infection and drainage in COM (3). This scale includes both symptoms and signs of infection such as otorrhea and the presence of granulation tissue (Table 1). Grade 0 represents a dry, healed ear and Grade 3 represents obvious failure to control infection, whereas Grades 1 and 2 represent adequate, but not perfect, control of suppuration. For each patient, an outcome grade was assigned for each of the following postoperative periods: 4 to 6 months, 7 to 12 months, 13 to 24 months, 25 to 36 months, and more than 36

months. Moreover, a single summary grade was recorded to assess the outcome for each surgical procedure. This final grade was defined as the worst grade that the patient recalled at any point during the entire duration of the postoperative follow-up period.

Secondary outcome measures included the presence of postoperative complications such as wound infection, flap necrosis, meatal stenosis, and the incidence of recurrent or residual cholesteatoma.

Surgical Technique

The procedure started with typical positioning and injections with epinephrine. A postauricular incision was made 2 to 3 mm posterior to the postauricular crease, with superior and inferior relaxing extensions as needed (Figure 1). The incision was carried through the skin and into the subcutaneous tissue. Superiorly, the level of the temporalis fascia was identified and exposed. A piece of the fascia was harvested, dried, and used later as a graft for tympanoplasty. The dissection at the inferior aspect of the incision was carried medially and maintained superficial to the mastoid periosteum. The posterior aspect of the incision was also undermined in this same plane to provide more posterior exposure for the obliteration flap. The auricle was elevated anteriorly until the external ear canal was reached.

The surgical technique involved the creation of an inferiorly pedicled flap of the mastoid periosteum and squamous pericranium (Figure 2). The temporalis muscle was dissected and mobilized along the temporal line, and "rake" retractors were used to elevate it and expose the underlying pericranium. The flap extended 3 to 4 cm above the temporal line. The flap was outlined using electrocautery and elevated inferiorly using sharp and blunt dissection. The anterior limit of the flap was immediately posterior to the external canal extending to the mastoid tip to reach at least 2-3 cm in width.

Elevation of the superior (pericranial) aspect of the flap was easily performed using Lambert periosteal elevator. The elevation was continued inferiorly until the flap was pedicled at the mastoid tip by fibrous insertions of the sternocleidomastoid muscle (Figure 2). If necessary, the pericranial portion of the flap was extended in anterior, superior, or posterior directions to make it larger. The flap was protected and preserved by wrapping it with a moist sponge until the completion of the mastoidectomy and removal of middle ear disease.

A large meatoplasty was performed by removing a segment of conchal cartilage. Skin lining of the anterior bony external auditory canal was preserved as a lateral-pedicled flap. The tympanic membrane was de-epithelialized, and any remaining canal skin fragments were removed. CWD mastoidectomy was performed with thorough exenteration of all mastoid cells (particularly those of the tegmen mastoideum, mastoid tip, and sinodural angle), lowering the facial ridge, exteriorizing the epitympanum and anterior epitympanic recess, and performing an anterior and inferior canaloplasty. During the mastoidectomy, bone pate was collected from the lateral cortical bone with a Sheehy Pate Collector and kept moist while taking care not to take any diseased or infected cells.

After removal of the middle ear and mastoid disease, the surgical field was widely irrigated, and hemostasis was secured. In cases with large mastoid cavities, bone pate was used to obliterate the cavity after compressing

it to eliminate moisture. The periosteal-pericranial flap was then used to cover the bone pate and was contoured into the cavity covering the area superior and posterior to the lateral canal, mastoid tip, and sinodural angle with its anterior extent lying on the facial ridge. Superiorly it was contoured over the lateral canal and tegmen. The flap was usually of sufficient length and size to cover the entire mastoid cavity (Figure 3). In some cases, with small sclerotic mastoids, the flap alone provided enough bulk to obliterate the cavity without the use of bone pate.

The middle ear reconstruction was performed with a type III or IV tympanoplasty. In most of the cases, we performed type III tympanoplasty with fascia temporalis and tragal or conchal cartilage. The anterior ear canal skin was returned to the modified anterior canal wall, and the previously obtained split-thickness skin grafts (from the upper arm) were placed over the exposed bone of the ear canal, tegmen, inferior tympanic bone, and posteriorly over the anteromedial aspect of the pericranial flap. Gelfoam dressing was then applied to hold the tympanic membrane and split-thickness skin grafts in place. The Koerner flap was thinned, shortened, and repositioned to cover the periosteal-pericranial flap laterally. The postauricular incision was closed in a single layer fashion with 3-0 nylon, interrupted, vertical mattress sutures. The lateral ear canal and meatus was then packed with Merocel® wicks which were removed after one week. The stitches were removed two weeks postoperatively. Patients were put on antibiotic-steroid drops until healing was complete.

RESULTS

During the ten-year inclusion period, 70 patients were treated with CWD mastoidectomy and mastoid obliteration for COM. Six patients were excluded because their postoperative follow-up period was less than 12 months. The patients' ages ranged from 7 to 63 years, with a mean age of 32.4 ± 15.7 years. There was an even distribution between male patients (n = 36) and female patients (n = 28) in the study population. See Table 2 for other sociodemographic data. Thirty-one left-sided procedures and Thirty-three right-sided procedures were performed. The mean duration of follow-up was 72 months, with a range of 12 to 132 months. Forty-three procedures (67.2%) were primary, whereas twenty-one procedures (32.8%) were revisions. Fifty-five ears (86%) had COM with cholesteatoma, whereas the remaining 9 (14 %) ears had active COM without cholesteatoma. Our analysis did not reveal any statistical difference in age means or between different genders regarding the outcome of surgical procedure. Moreover, the outcome of surgical procedure was not affected by smoking status or by comorbid conditions such as DM, asthma, or hypertension.

OUTCOMES

I. Ear discharge

The primary outcome was the assessment of mastoid cavity suppuration and ear discharge. This outcome was measured using the summary grade adopted by Merchant et al. (3). The grading system was divided into four categories depending on ear discharge. Grade 0 represented a dry, healed ear while Grade 3 represented obvious failure to control infection. Grades 1 and 2 represented adequate, but not perfect, control of suppuration. The summary grade system was

used at five consecutive intervals; 4-6, 7-12, 13-24, 25-36, and more than 36 months. Furthermore, a single summary grade was used to assess the outcome for each surgical procedure and was defined as the worst grade that occurred at any point during the entire duration of the postoperative follow-up period (Table 3).

Sixty-four procedures were evaluated in the first two intervals, 60 procedures in the third interval, 38 in the fourth interval, and 19 in the last interval. Fifty-seven procedures (89.1%) were successful in controlling infection (Grades 0,1 and 2). Seven procedures (10.9%) were labeled as failures (Grade 3). The cholesteatoma group (55 patients- 86%) had a higher success rate than the COM with granulation tissue group (93% vs. 67%).

II. Function of time after surgery

After analysis, we found that individual outcomes remained stable over progressively more extended follow-up periods (Table 4). At any given point in time, 84 to 88% of patients had a Grade 0 outcome, 6 to 11% had a Grade 1 outcome, 2 to 10% had a Grade 2 outcome, and 2 to 5% had a Grade 3 outcome.

Analysis of failures

We considered seven patients as surgical failures (summary grade 3). Three failures were the result of persistent otorrhea and severe meatal stenosis, managed by a revision meatoplasty with split-thickness skin grafting; all of them healed with excellent results. The other four patients, who also suffered from persistent otorrhea (summary grade 3), two of them had granulation tissue within the cavity while the other two developed recurrent cholesteatoma. All four patients underwent revision tympanomastoidectomy with a secondary split-thickness skin graft. Overall, there was no postoperative hematoma, flap necrosis, or graft perforation (Table5).

DISCUSSION

Tympanomastoidectomy surgery failure continues to exist as a challenge for otologists. Causes of failure have been well studied over the past decades (6,16-19). The most important and challenging of all is failure to produce a dry, healthy mastoid bowl. A general recommendation for a successful mastoidectomy is complete exenteration of diseased mastoid cells, proper saucerization of the edges, safely lowering the facial ridge, performing an adequate meatoplasty and managing the mastoid tip (9, 17). Although the production of a healthy mastoid bowl is the goal, this commonly results in a large cavity which could carry risks of potential continued problems, most importantly wet discharging cavity with unsightly large meatoplasty.

Various mastoid obliteration techniques have been described over the past century. In a comprehensive histopathologic study on the fate of different obliteration techniques Linthicum (18) illustrated that muscle and subcutaneous tissue behaved similarly by acting as a hyalinized bulk in the mastoid bowl with muscle volume loss occurring over time. A multitude of studies have shown that mastoid obliteration results in less pain, giddiness, restrictions to water exposure, and helps achieve a healthy mastoid cavity in an expedited manner. (5, 8, 9, 12, 13).

The strongest argument against mastoid obliteration is the possibility of trapping microscopic silent cholesteatoma in the obliterated cavity (4, 12, 19). This drawback can be overcome by careful exenteration of diseased cells and full exteriorization of

cholesteatoma from crucial areas of the mastoid cavity and the middle ear. The recommendation is never to obliterate the mastoid bowl whenever there is a suspicion of residual disease. Additionally, whenever bone pate is used, it must be collected exclusively from the outer cortical layer before entering the diseased mastoid cavity or middle ear (4). One exciting development in cholesteatoma management is the use of non-echoplanar (non-EPI) diffusion-weighted (DWI) magnetic resonance imaging (MRI), which allows differentiation between cholesteatoma from obliteration material (4, 10).

In this study, we present our experience in using a periosteal-pericranial flap, which is pedicled inferiorly to obliterate the mastoid cavity. The pericranial extension of the flap provides additional length allowing it to reach to the sinodural angle and superior to the lateral semicircular canal, with better cavity size reduction. It effectively promotes epithelialization with dry stratified squamous epithelium, which helps in producing a healthy, dry and smooth mastoid cavity.

Obliteration with a periosteal pericranial flap was successful in about 89.1 % of cases (Summary Grades 0, 1, and 2). The progressively more prolonged periods of follow-up showed this success to be consistently maintained. Moreover, we found that our success rates were similar whether the surgery was a primary or a revision procedure (3). The 19 patients who had the longest follow-up period (>36 months) maintained a Summary Grade of 0 or 1. While seven (10.9%) patients had failures (summary Grade 3), all of them were successfully managed by revision surgery.

The surgical failures encountered in our series were caused by various factors and probably not attributed to the technique itself. Patients who had COM with granulation tissue had poorer results than patients with COM and cholesteatoma — an observation which was similarly reported by Merchant et al. (3). The most common complication was meatal stenosis, occurring in 3 of 64 ears (4.7%). The incidence of meatal/canal stenosis after CWD mastoidectomy ranges from 9 to 16% (17, 20). Overall, the mastoid obliteration with periosteal-pericranial flap provided an effective way to minimize problems associated with open cavities.

CONCLUSION

Obliteration of the mastoid cavity is found to improve outcomes associated with open cavities in CWD techniques. We conclude that partial mastoid obliteration with an inferiorly based periosteal-pericranial flap is a safe and effective technique that results in a dry, healthy, safe and self-cleaning mastoid cavity in patients with chronic otitis media with or without cholesteatoma.

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Table 1. Grading system to assess control of infection after surgery [3]

Grade	Description
0	No episode of otorrhea, and no pus or granulation tissue on otologic examination.
1	One episode of otorrhea of < 2 wks duration in a 3-month period or no otorrhea but a subjective feeling of wetness in the ear.
2	More than one episode of otorrhea in a 3-mo period, or an episode of otorrhea lasting more than 2 wks., or otologic examination showing localized granulation tissue/pus that was promptly cured with antibiotic drops, curettage, or silver nitrate cautery.
3	Constant purulent otorrhea on a daily basis, or otologic examination showing extensive granulation tissue, or need for a revision procedure to control infection.

Table 2. Patients demographics and characteristics

Characteristic		**N (%)**
Gender	Male	36 (56.3)
	Female	28 (43.8)
Occupation	student	26 (40.6)
	employed	25 (39.1)
	not employed	13 (20.3)
Marital status	Single	32 (50.0)
	Married	32 (50.0)
Medically free	Yes	53 (82.8)
	No	11 (17.2)
DM	Yes	6 (9.4)
	No	58 (90.6)
HTN	Yes	6 (9.4)
	No	58 (90.6)
Asthma	Yes	2 (3.1)
	No	62 (96.9)
Smoking	Yes	25 (39.1)
	No	39 (60.9)

Table 3. Control of infection after surgery, as assessed by the summary grade [a]

[a] Defined as the worst grade that occurred at any point in the follow-up.

	Outcome assessed using summary grade (%)		
Summary grade	**COM with granulation tissue**	**COM with cholesteatoma**	**Total**
0	**1 (11)**	**42 (76)**	**43 (67)**
1	**2 (22)**	**8 (15)**	**10 (16)**
2	**3 (33)**	**1 (2)**	**4 (6)**
3	**3 (33)**	**4 (7)**	**7 (11)**
Total procedures	**9 (100)**	**55 (100)**	**64 (100)**
[a] Defined as the worst grade that occurred at any point in the follow-up.			

Table 4. Assessment of control of infection (grade versus postoperative interval)

	Months of follow-up (%)				
Infection grade	4 - 6	7 - 12	13 – 24	25 - 36	> 36
0	56 (88)	51 (80)	49 (82)	32 (84)	16 (84)
1	4 (6)	7 (11)	4 (7)	4 (10)	2 (11)
2	1 (2)	4 (6)	6 (10)	1 (3)	1 (5)
3	3 (5)	2 (3)	1 (2)	1 (3)	0 (0)
Total procedures	**64 (100)**	**64 (100)**	**60 (100)**	**38 (100)**	**19 (100)**

Table 5. Analysis of failures (summary grade 3)

Age (yr)	**Sex**	**Clinical features**	**Treatment**	**Recovery**	**Grade after treatment**
12	Female	Severe meatal stenosis	Revision meatoplasty and split-thickness skin graft	Excellent	0
23	Male	Severe meatal stenosis	Revision meatoplasty and split-thickness skin graft	Excellent	0
61	Female	Severe meatal stenosis	Revision meatoplasty and split-thickness skin graft	Excellent	0
30	Female	Granulation tissue in the cavity	Revision tympanomastoidectomy with split-thickness skin graft	Excellent	1
42	Male	Granulation tissue in the cavity	Revision tympanomastoidectomy with split-thickness skin graft	Excellent	1
25	Male	Recurrent cholesteatoma	Revision tympanomastoidectomy with split-thickness skin graft	Intermittent localized granulation tissue	2
35	Female	Recurrent cholesteatoma	Revision tympanomastoidectomy with split-thickness skin graft	Intermittent localized granulation tissue	2

Figures

Figure 1. This image demonstrates the typical post auricular incision (right ear). A superior and inferior relaxing incisions can be incorporated as necessary.

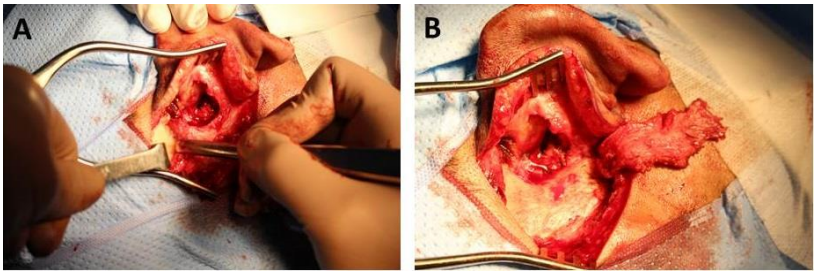

Figure 2. These images show the harvest of the inferiorly based periosteal/pericranial flap of the right ear (A. Beginning of flap harvest B. Flap harvest completed)

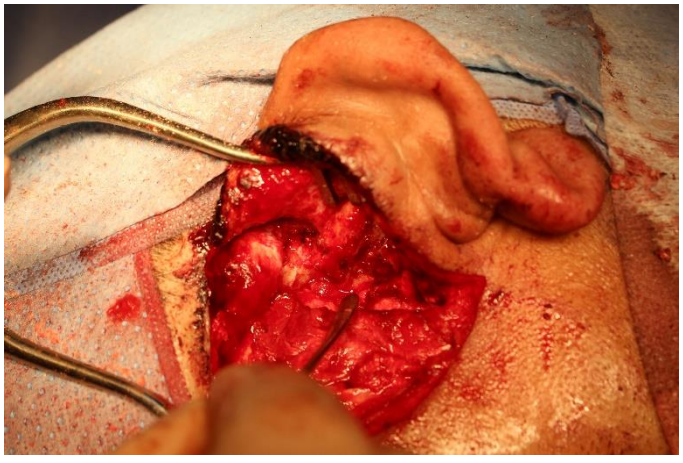

Figure 3. This image shows the periosteal-pericranial flap at the completion of surgery adequately obliterating the right mastoid cavity after the use of bone pate.

References

1. Mor N, Finkel DA, Hanson MB, Rosenfeld RM. Middle ear cholesteatoma treated with a mastoidectomy: a systematic review of the measures used. Otolaryngol Head Neck Surg. 2014 Dec;151(6):923-9.
2. Nadol JB Jr. Revision mastoidectomy. Otolaryngol Clin North Am. 2006; 39:723–40. Vi–vii.
3. Merchant SN, Wang P, Jang CH, et al. Efficacy of tympanomastoid surgery for control of infection in active chronic otitis media. Laryngoscope 1997; 107:872–7.
4. Alves RD, Cabral Junior F, Fonseca AC, Bento RF. Mastoid Obliteration with Autologous Bone in Mastoidectomy Canal Wall Down Surgery: a Literature Overview. Int Arch Otorhinolaryngol. 2016;20(1):76–83.
5. Chan CY, Chan YM. Mastoid obliteration and reconstruction: A review of techniques and results. Proceeding of Singapore Healthcare 2012;21:23–29.
6. Nadol JB, Schuknecht HF. Surgery of the Ear and Temporal Bone. New York: Raven, 1993.
7. Mitchell J. Ramsey, Saumil N. Merchant, et al. Post auricular Periosteal-Pericranial Flap for Mastoid Obliteration and Canal Wall Down Tympanomastoidectomy**.** Otol Neurotol. 2004;25**:**873–878.
8. Kuo CL, Liao WH, Shiao AS. A review of current progress in acquired cholesteatoma management. Eur Arch Otorhinolaryngol. 2015 Dec;272(12):3601-9.
9. Mehta RP, Harris JP. Mastoid Obliteration. Otolaryngol Clin N Am. 39 (2006) 1129–114.
10. Yung M, Bennett A. Use of mastoid obliteration techniques in cholesteatoma. Curr Opin Otolaryngol Head Neck Surg. 2013 Oct;21(5):455-60.11. Palva T. Operative technique in mastoid obliteration. Acta Otolaryngol. 1973;75:289–90.
12. S. Chhapola, I. Matta. Mastoid Obliteration Versus Open Cavity: A Comparative Study. Indian J Otolaryngol Head Neck Surg. 2014 Jan; 66(Suppl 1): 207–213.
13. Mosher HP. A method of filling the excavated mastoid with a flap from the back of the auricle. Laryngoscope. 1911;21:1158–63.
14. Black B. Mastoidectomy elimination. Laryngoscope. 1995; 105:1–30.
15. Tantinikorn W, Assanasen P, Prakairungthong S. Mastoid obliteration with postconchal soft tissue and postauricular pericranial flap. J Med Assoc Thai. 2012; 95:1306–1311.
16. Nadol JB. The chronic draining ear. In: Gates G, ed. Current Therapy in Otolaryngology-Head and Neck Surgery 3.Philadelphia: B.C. Decker; 1987;18-22.
17. Nadol JB Jr. Causes of failure of mastoidectomy for chronic otitis media. Laryngoscope. 1985;95:410–3.
18. Linthicum FH Jr. The fate of mastoid obliteration tissue: a histopathological study. Laryngoscope 2002;112:1777–81.
19. Ghiasi S. Mastoid cavity obliteration with combined palva flap and bone pâté. Iran J Otorhinolaryngol. 2015;27(78):23–28.
20. Vincent DA Jr, Funcik T, Adkins WY Jr. Reduced mastoidectomy complications with an open meatoplasty stent. Otolaryngol Head Neck Surg. 1995;112:689–90.

طمس تجويف الخشاء في عمليات قص الخشاء بطريقة خفض جدار القناة السمعية الخلفي بإستخدام السديلة السمحاقية فوق القحفية : خبرة عشر سنوات

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الملخص

الأهداف :لتقديم خبرتنا التي استمرت عشر سنوات في طمس تجويف الخشاء بإستخدام السديلة السمحاقية فوق القحفية خلف الأذنية ذات القاعدة السفلية في عمليات قص عظم الخشاء بطريقة خفض جدار القناة السمعية الخلفي، ومراجعة فعاليتها في الحصول على تجويف خشائي جاف وصغير مع تقليل تكرار حاجة المرضى لإجراء التنظيف بعد العملية.

المواد والطرق :أجريت دراسة بأثر رجعي لعدد ٦٤ حالة التهاب اذن وسطى مزمن نشط مع او من دون ورم كوليستيرولي في الأذن حيث تم علاجها بواسطة إجراء عمليات قص الخشاء بطريقة خفض جدار القناة السمعية الخلفي وذلك خلال الفترة من 2007 إلى 2017 م. وكان مقياس النتيجة الرئيسي هو السيطرة على التقيح والحصول على تجويف خشائي جاف ذاتي التطهير.

النتائج :53 أذنا" بنسبة (82.8٪□) احتوت على تجويف خشاء صغير، جاف، صحي وذاتي التنظيف. أربعة آذان بنسبة (6.3٪□) كان لديهم إفراز أذني متقطع تم التحكم به بسهولة عن طريق العلاج بالمضادات الحيوية الموضعية والجهازية وتنظيف القناة السمعية. سبعة مرضى بنسبة (10.9٪□) كان لديهم إفرازات أذنية مستمرة، ثلاثة منهم كان لديهم تضيق في القناة السمعية واثنان كان لديهم نسيج حبيبي واثنان عانوا من تكرار الإصابة بورم الاذن الكوليستيرولي.

ظلت النتائج مستقرة على مدى فترات متابعة متزايدة تدريجيا" بلغت احيانا" 132شهرا."

الخلاصة: إن إستخدام السديلة السمحاقية فوق القحفية خلف الاذنية لطمس تجويف الخشاء في عمليات قص عظم الخشاء بطريقة خفض جدار القناة السمعية الخلفي هو أسلوب فعال للغاية ينتج عنه تجويف خشائي جاف وصغير وذاتي التنظيف في 89.1٪□ من المرضى المصابين بإلتهاب الأذن الوسطى المزمن النشط مع أو بدون ورم الاذن الكوليستيرولي.

الكلمات الدالة: ترميم الاذن الوسطى وقص الخشاء، ورم الأذن الكوليستيرولي، التهاب الاذن الوسطى المزمن، خفض جدار القناة السمعية الخلفي، السديلة السمحاقية، طمس.