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Evaluation of Tympano-Mastoid Surgery for Controlling Infection in active Chronic Suppurative Otitis Media with Cholesteatoma/ A Follow-up Study

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Abstract

Background:

Control of infection in chronic suppurative otitis media can be achieved by performing surgical techniques as well as medical treatment can be beneficial. Persistent otorrhoea and/or occasionally hearing impairment can be relatively reduced by surgical technique.

Although several surgical techniques exist for the treatment of chronic suppurative otitis media, the procedure is selected based on the audiological finding, surgeon experience, and extent of disease.

Patients & Methods:

A prospective study was performed within eight months. Thirty-four patients included (24 males &10 females); age range was (9-40 years), with chronic suppurative otitis media attended Otolaryngology Department for surgery.

A thorough history and examination, audiological, laboratory & radiological investigations were recorded & analyzed. Ear drops and antibiotics were given to all patients before and after surgery.

All included patients underwent tympano-mastoidectomy; 11 cases (5 males and 6 females) by intact canal wall technique & 23 cases (19 males and 4 females) by canal wall down technique with follow up 8 months& data recorded& analyzed.

Results:

-Through a period of 8 months all patients were followed up in scheduled visits at 1st week, 1st month, 3rd months, 6th months & 8th month postoperatively.

-The overall satisfactory control was achieved in 23patients (67.6%) who have dry ears, while 11patients (32.4%) remained with wet ears.

-Out of 23 patients with dry ears, 19(55.8%) patients have cholesteatoma & 4(11.8%) patients have active mucosal disease.

-The canal wall down (modified radical) technique was performed in 23 patients & resulted in 18(78.3%) patients having dry ears (15patients have cholesteatoma &3patients had the active mucosal disease), while the other 5(21.7%) patients remained with wet ears (2patients have cholesteatoma&3patients have an active mucosal disease).

-The intact canal wall technique was performed in 11(32.4%) patients & resulted in 5(45.5%) patients having dry ears (4patients have cholesteatoma &1patient had active mucosal disease), while the other 6(54.5%) patients remained with wet ears (all of them have an active mucosal disease).

Conclusion

-It is evident that surgery performed in patients with chronic suppurative otitis media gives better chance for control infection.
-Canal wall down technique is effective in the treatment of chronic suppurative otitis media with or without cholesteatoma
- Cholesteatoma (55.8%) did significantly better than chronic mucosal disease (11.8%)

Introduction

The development of a safe and dry ear with hearing preservation and reconstruction are the goals of surgery for active chronic suppurative otitis media. Surgery's effectiveness in reducing infection in patients with COM has been widely documented and surgery is generally selected depending on the anatomy and severity of the condition (1, 2).

The literature is rich with studies linking the features of two major surgical procedures: canal wall down (open cavity) and intact canal wall (closed cavity), with or without second-look surgery (1,2,3,4).

Multiple reports in the otologic literature describe statistical inferences of successes and failures postoperatively. The attainment of a dry ear following tympanomastoid surgery has indeed been regarded as the achievement of the surgery. Success rates have been reported to range from 70% to 95% as per numerous authors (1).

The failure rates for primary mastoidectomy for chronic suppurative otitis media have been reported to range from 3% to 26% or more (5,6,7).

For more than 100 years, surgery has been primarily used to treat chronic middle ear infections. Surgeons were willing to open up the antrum and preserve mastoid process drainage in various ways for a long time ago, but it wasn't long before the radical operation with open cavity was developed, and it has been the favorite approach for over 80 years (7).

According to Palva, the bony wall of the ear canal must be removed in cholesteatoma surgery, which obliterates the hollow with a musculoperiosteal flap and reconstructs the ear canal with cortical bone chips, bone pate', and fascia (8). Jansen says that with the combined approach tympanoplasty (CAT), the bone wall can be preserved in such an ear and that an air-filled chamber is not required (9).

The 'intact canal wall' approach has been the preferred procedure all around the world for the past ten years. However, most surgeons report a significant rate of cholesteatoma recurrence after this procedure, and its popularity is progressively dwindling [(10)].

The management of chronic suppurative otitis media has witnessed a profound change over many years. The earlier methods of radical surgery were necessary to control the destructive disease associated with serious complication and at a time when antibiotics were unavailable [(11)].

Until 1790, the treatment of chronic ear disease consisted mainly of topical application. In this year Petit and later Jasser trephined the mastoid process for mastoiditis unrelieved by simpler measures, thus laying out the foundation of modern mastoid surgery[(11)].

Surgeons then began to advice means of restoring auditory function, and in the early 1950s Mortiz, Zoellner, and Wullstein introduced the tympanoplasty, whose aims were to restore function and achieve healing. The early works were failed when tympanoplasty was used with open cavity because of medial displacement of the graft and because of the infection[(12)].

The solution to this problem came with the combined approach tympanoplasty, which is first published by Jansen in 1958. This procedure aumed at restoration of function and healing through combining the eradication of disease with preservation of necessary anatomy[(13)]. There have

been reports of frequent failures to eradicate cholesteatoma by combined approach tympanoplasty, on the other hand, some workers favored the combined approach tympanoplasty with results superior to that of the open cavity procedure [13].

However, during a single decade the development of hypotensive anesthesia and the invention of operating microscope have combined in such a way as to make further advances possible[13].

This study was aimed to evaluate the effectiveness of tympanomastoid surgery for infection control in active chronic otitis media over an 8-month period, with the goal of determining the impact of the diagnostic category of active chronic suppurative otitis media on infection control.

Aims of the study

1. To evaluate the effictivness of tympanomastoid surgery for control of infection in active chronic suppurative otitis media.
2. To identify the influence of the diagnostic category of active chronic suppurative otitis media on the control of the infection.
3. To identify the influence of the type of surgical technique used to control the infection of active chronic suppurative otitis media.

Patients and methods:

During 8 months period from March – 2010 to October – 2010, 34 patients underwent tympanomastoid surgery at the Otolaryngology Department of the Hospital for Specialized surgeries. They were operated on under general anesthesia with oral-endotracheal intubation. A postural approach was used to expose the mastoid bowel in all cases.

Assessment of patients done by complete history, including details of aural symptoms in terms of the onset, character, severity, duration, relieving & aggravating factors, &associated symptoms.

A thorough otolaryngological and general medical examination was performed with particular attention to the condition of the diseased ear by inspection using aural speculum, otoscopy & oto-microscopy. In addition, the examination was extended to include the facial nerve, presence of nystagmus & its degree, fistula test by tragal pressure&use of pneumatic otoscopy(seigale speculum), test of cerebellar function & general medical examination. Postnasal space exam is also done by using fiber optic nasendoscopy. Using (512 hz) tuning fork a Rinne & Weber tests were performed, so an idea about the hearing was obtained.

Pure tone audiometry was done to evaluate the hearing within 1 week before&3 months after the operation and the hearing level was defined as the mean air conduction threshold at frequencies 0.5,1,&2kHZ.

X-ray of both mastoid processes (Schuller view) were done showing sclerosis in the diseased mastoid process in the majority of cases. CT scans in axial view were done showing soft tissue density in the diseased mastoid process in the majority of cases.

Assessment of haemoglobin, blood urea, blood sugar and ECG done for all patients above 40 years of age & all showed normal findings.

Informed consent: were obtained from all patients before surgery, after adequate explanation of the procedure to the patient & to his/her relatives with a discussion of the estimated risks & benefits of the operation.

Twenty-three patients were operated by canal wall down technique (modified radical), meatoplasty was fashioned by incising and removing a piece of conchal cartilage (posterosuperior aspect), and the cavities were packed by BIPP through the meatoplasty opening.

Eleven patients were operated by intact canal wall(cortical mastoidectomy&/or combined approach tympanoplasty), some external auditory canals were packed by BIPP wick, others by betadine wick& corrugate drain was inserted. Wounds were closed in 3 layers, using interrupted silk sutures for the skin.

In all patients; postoperatively; classical mastoid dressing were applied. Function of facial nerve

was checked on recovery of the patient from anaesthesia. A second examination of facial nerve was done before the patient leave the recovery room to the ward, and the findings were documented.

In the ward, close observation were maintained at least for 6 hours, for presence of dizziness, change in facial nerve function,signs of haemorrhage, and for vital signs.

Antibiotic therapy was instituted for all patients for the length of hospital stay, in addition to oral analgesics.

During day one of operation, the tight mastoid dressing were changed and the wounds were observed for presence of any wound hematoma or haemorrhage. All patients examined for presence of vertigo, any neurological deficit. Weber test was done to exclude presence of a dead ear, and patients were kept in hospital for (5-7) days.

Daily dressing of the wounds were done in every patient during their hospital stay. The petadine wick was daily changed. The BIPP mastoid pack and sutures were removed on the 7^{th}-10^{th} postoperative day.

On discharge, oral antibiotics were prescribed to all patients, in addition to local antibiotic ointment(fucidin) for the wound. Both sorts of treatment were given for one week. All patients were instructed to consult at 1^{st} week, then at 1^{st} month, 3^{rd} month, 6^{th} month & 8^{th} month after surgery.

During each visit assessment was performed by Inspection of the ear by using aural speculum and presence of any debris, secretion, wax was removed using suction, or dry mopping.

Also, the Adequacy of the meatoplasty was assessed using an aural speculum and the meatoplasty opening was regarded as adequate when all surfaces of the cavity can be inspected easily.

Results

In this study; 34 patients with chronic suppurative otitis media were operated on, 24 patients (70.6%) were males &10 (29.4%) were females. Their ages ranged from (9-40) years, duration of disease was variable between patients (table 1).

Table (1) : duration of disease and distribution of age and gender of the studied patient

Duration (years)		**No. of Patients**	
2-5		10(29.4%)	
6-9		6(17.6%)	
>10		18(52.9%)	
Total		34(100%)	
Age(years)	**Male**	**Female**	**Total**
<20	10	3	13(38.2%)
20-	7	1	8(23.6%)
30-	6	4	10(29.4%)
40-	1	2	3(8.8%)
Total	24(70.6%)	10(29.4%)	34(100%)

All patients were presented with discharging ear and hearing impairment for long-duration ranging from2 years to more than 10 years.
The main presenting symptom was discharge found in 30 patients(94.2%), while hearing impairment was presenting symptom in 2 patients(2.9%). In addition to discharging ear and hearing impairment, 2 patients (2.9%) were complaining of otalgia (table 2).

Table (2): Incidence of presenting symptom

Otological symptom	**No. of Patients**
Aural discharge	34(100%)
Hearing loss	34(100%)
Tinnitus	6(17.6%)
Occasional dizziness	4(11.8%)
Headache	3(8.8%)
Other ENT symptom	
Sore throat	4(11.8%)
Sneezing	2(5.9%)
Postnasal discharge	2(5.9%)
Occasional epistaxis	1(2.9%)
Previous history	
Previous ear surgery(cortical mastoidectomy)	2(2.9%)
Previous medical treatment for ear condition	34(100%)

All patients had wet ears(unilateral). The discharge was scanty in 4 patients (11.7%)all of them have active squamous disease; while profuse discharge was found in 18 patients(53%), 11 patients have active mucosal disease and other 7 patients have active squamous disease. The colour of discharge was yellow in 10 patients (29.4%), 8 patients have AMD and other 2 patients have ASD; while blood-stained discharge was found in 15 patients(44.1%), 1 patient has AMD and other14 patients have ASD. The odour of discharge was offensive in 23 patients (67.6%), 3 patients have AMD and other 20 patients have ASD; while mild

foetor oduor was found in 11 patients(32.4%), 10 patients have AMD and other 1 patient has ASD (table 5).

Table (3): Character of discharge in relation to the ear disease

Type of disease	Amount of discharge			Colour of discharge			Odor of discharge		Total
	Scanty	moderate	Profuse	Yellow	Yellow-green	Blood-stained	Offensive	Mild-feotor	
*AMD	0	2 (16%)	11 (61%)	8 (80%)	4 (44.4%)	1 (6.6%)	3 (13.1%)	10 (90.9%)	13 (38.2%)
*ASD	4 (100%)	10 (84%)	7 (39%)	2 (20%)	5 (55.6%)	14 (93.4%)	20 (86.9%)	1 (9.1%)	21 (61.8%)
Total	4 (11.7%)	12 (35.3%)	18 (53%)	10 (29.4%)	9(26.5%)	15 (44.1%)	23 (67.6%)	11 (32.4%)	34
	34			34			34		

*AMD: Active mucosal disease; ASD: Active squamous disease. Scanty: less than2 episodes per day or subjective feeling of wetness in the ear. Moderate: 2 episodes of otorrhea per day or localized pus/granulation tissue on otologic exam. Profuse: constant purulent otorrhea on daily basis or more than 2 episodes per day or otologic exam showing extensive granulation tissue.

Regarding tympanic membrane perforation; central perforation was found in 5 patients (14.7%) all of them have AMD; subtotal perforation was found in 4 patients (11.8%); 3 patients have AMD and 1 patient has ASD.

Posterosuperior perforation was found in 10 patients (29.4%); 3 patients have AMD and 7 patients have ASD; while attic perforation was found in 15 patients (44.1%); 2 patients have AMD and 13 patients have ASD.(table 6).

Table (6): preoperative finding by physical examination

TM perforation	
Subtotal	4(11.8%)
Central	5(14.7%)
Attic	15(44.1%)
Posterosuperior	10(29.4%)
Middle ear	
Chronic epithelial disease	28(82.4%)
Chronic mucosal disease	18(52.9%)
Evidence of ossicular erosion	20(58.8%)
Other ENT examination	
Hypertrofied nasal turbinate	8(23.6%)
Septal deviation	12(35.3%)
Chronic non_specific pharyngitis	10(29.4%)
Abnormal neurological examination	Nill

In majority of patients, the pure tone audiometry showed a conductive hearing loss, while the sensorineural hearing loss was recognized in some patients. Preoperatively, fifteen patients (44.2%) have air-bone gap more than 35dB, while 3 patients (8.8%) have air-bone gap more than 45dB, while postoperatively, six patients(17.6%) have an air-bone gab more than 35dB and 14 patients (41.2%) have an air-bone gab more than 45dB. (table 6).

Table (6): Pre and Postoperative hearing level (dB) of patients

*A-B gap	30_	35_	40_	45_	Total
Pre-operative	6(17.6%)	15(44.2%)	10(29.4%)	3(8.8%)	34
Post-operative	3(8.8%)	6(17.6%)	11(32.4%)	14(41.2%)	34

*A-B gap: air-bone gap

Active squamous disease (ASD) was found in 21 of the cases (61.8%). In 8(38.1%) of the cases, ASD was found to involve the attic, antrum and mesotympanum, while 12(57.1%) of the cases, it was occurred to involve the attic and antrum, while in the remaining 1(4.8%)case, it was involving the attic only. On other hand, Active mucosal disease (AMD) was found in 13 of the cases (38.2%). Of these a disease involving the attic,antrum,and mesotympanum was found in 2 of the cases(15.4%), while involvement of the attic & antrum was found in 7 of the cases(53.8%).Only the attic involvement was found in 4 cases(30.8%).

Diseases around the facial canal were seen in 9 patients (26.5%). Two patients (22.2%) have ASD & 7(77.8%) patients have AMD. The disease was seen around the lateral semicircular canal, round or oval windows or over the promontory in 7 cases (41.2%) with ASD and 10 cases (58.8%) with AMD. (table 7).

Table (7): Effect & distribution of disease in the study patients:

Type of disease	CED	CMD	Total
Ossicular erosion	16(47.2%)	12(42.8%)	28(82.4%)
Dis. around facial canal	2(22.2%)	7(77.8%)	9(26.5%)
***Dis. around LSC, OW, RW**	7(41.2%)	10(58.8%)	17(50%)

LSC: lateral semicircular canal; OW: oval window; RW: round window

Ossicles (incus & malleus) were found either to be surrounded or involved in disease process in 28 cases (82.4%). As in16 (47.2%) patients with ASD, the incus was eroded in 9 (56.3%) patients,& malleus was involved in 5(31.2%) patients, while the stapes superstructure was affected in 2(12.5%) patients. On the other hand, in those patients with AMD, variable degree of ossicular involvement was seen in 12(42.8%) patients, but no affection of the stapes.

Twenty-three cases (67.6%) were operated by canal wall down technique, 17 (73.9%) cases with ASD& 6 (26.1%) cases with AMD, while 11 (32.4%) patients were operated by intact canal wall technique, 4 (36.4%) cases with ASD &7 (63.6%) cases with AMD.

During the follow up period, 23 (67.7%) cases were recognized to be dry, while the rest of the 11 cases (32.3%) were remained discharging at the end of the 8th month of follow up. From the 1st postoperative month to the 6th postoperative month there were 18 dry ears out of the 23 ears comprising more than (78.3%) of dry ears. (Table 8).

Table (8): Proportion of dry & discharging ears during postoperative follow up

Period	Dry	Discharge
1st wk	0	34(100%)
1st month	5(14.7%)	29(85.3%)
3rd month	14(41.2%)	20(58.8%)
6th month	18(52.9%)	16(47.1%)
8th month	23(67.7%)	11(32.3%)

Of the 21 ASD cases (61.8%) recognized at surgery, 19 patients (90.5%) have dry ears compromising (55.8%) of total 34 cases of our study and (82.6%) 0f total 23 dry ears after 8 month of operation, while the remainder 2 cases (9.5%) were noted to have discharging ears after 8 month of operation. On the other hand, from the 13 of patients (38.2%) with AMD , 4 of the patients (30.8%) developed dry ears

compromising (11.8%) of total 34 cases of our study and (17.4%) 0f total 23 dry ears, while 9 of the patients (69.2%) have a discharging ears during the follow up.
Regarding the surgical techniques used, the canal wall down technique has resulted in 18 dry mastoid cavities comprising (78.3%) out of the 23 dry mastoid cavities, while the intact canal wall technique was achieving 5 dry ears comprising (21.7%) out of the 23 dry ears, there was no significant association between type of surgery and the state of dryness of the ear, P-value > 0.05 (Table 9).

Table (9): type of surgical technique in relation to the state of dryness of ear

		Dryness status of the ear		Total		
		Dry	Discharge		Chi-square	P-value
Type of surgery	CWD	18	5	23	3.659	.056
	ICW	5	6	11		
Total		23	11	34		

Discussion:

Control of infection and elimination of cholesteatoma is a major objective of surgery for COM. This goal takes priority over other surgical aims such as prevention of recurrent disease or improvement of hearing. Surgical success is usually measured as the ability to produce a dry ear or an ear free of cholesteatoma [(1)].
In the current study prospective review of 34 patients with active CSOM with the main presentation of aural discharge and hearing loss, 24 (70.6%) were male and 10 (24.4%) were female. Male: female ratio 2.4:1. Less than half of them are having age of 10-20years 13patients (38%) which represents the major age group.
Lee & Schuknetch et al. retrospective study of 741 patients with CSOM during 10years, 440 (59.4%) were males and 301 (40.6%) were female. Male:female ratio 1.4:1 and majority of them are having age of 10-20 years, the reported success rate 84% & failure rate 16% when they studied 741 patients [(16)].
Glasscock et al. (1977) reported success rate 86% & failure rate 14% when they studied 527 patients in a retrospective study of 527 patients with CSOM during 6years, 300 (57%) were males and 227 (43%) were female. Male:female ratio 1.3:1 and majority of them are having age of 15-25 years. [(10)].

While a retrospective study of 255 patients with CSOM during 8 years, 155 (60.8%) were males and 100 (39.2%) were female. Male:female ratio 1.5:1 and majority of them are having age of 10-20 years. Merchant, SN et al reported success rate 95% & failure rate 5% when they studied 272 patients [(1)].
Considering all 34 procedures as a whole, and with a minimum of 8months' follow-up, overall satisfactory control of infection in current study occurred in 23 of 34 cases (67.6%), where they achieved a completely dry ear for the entire duration of their follow-up period. On other hand, the overall failure rate was 32.4% in 11 cases of the study patients.
In comparison, the percentages of postoperatively wet ear are fairly high in current study. The explanation may be, on one hand, due to the bone work was not sufficiently radical, and, on the other, removal of infected tissue in the tympanum was not sufficient. The published failure rates for primary mastoidectomy for chronic suppurative

otitis media vary widely, ranging from 3% to 26%, or more [6].

In the current study, the outcome of surgery has been influenced or determined by the diagnostic category of COM. ASD had a significantly better outcome (55.8%) than AMD (11.8%), the reasons for this difference between the two groups are speculative. One possibility is that some failures in the AMD subgroup may be caused by persistent disease in the eustachian tube or peritubal cells [16].

Another hypothesis may be the result of an inherent mucosal defect, so that the mucosa that regenerates after surgery is again susceptible to reinfection. On the other hand, in ASD, the inflammatory mucosal changes may be reactive in nature, so that surgical extirpation of the ASD allows the mucosa to return to normal. It is intuitively reasonable to believe the outcome of surgery would be worse for those with more extensive disease. [1].

In comparison, our results are slightly lower than those achieved by other literature, a better outcome was reported (59%) in CED than CMD (45%) [1]. Nadol et al and Paparella et al reported better outcomes in CED than CMD (24%) and (61%) respectively [17,18].

In the current study, we found differences between canal wall-up and canal wall-down procedures. The intact canal wall technique results in (45.5%) of dry ears while discharging ears is found in (55.5%) of cases. On the other hand, the canal wall down technique results in (78.3%) of dry ears, while discharging ears found in (21.7%) of cases, they are distinctly better than most of the well-controlled figures in the" intact canal wall" technique [6].

Following intact canal wall operation, our results of failure rate are relatively higher than of other studies, these studies reported as low as 26% [10], 35% [20], and high as 48%[19]. While with "Canal wall down" operations, rates recorded from other studies were also relatively lower than that of ours [16,20].

In the current study, we found that the extension of both varieties of CSOM(squamous & mucosal disease) is mainly within attic and antrum approximately 19 cases (55.9%), 12 cases(57.2%) for cholesteatoma & 7cases(53.8%) for mucosal variety.

It was found that 58% of a total of 81 cases have ASD involved in both attic and antrum[21]. Other studies found 54% of cases involving both attic and antrum [14], even more than that percentage; 62% [15].

We found ossicular erosion (mainly incus & malleus) in 28 cases (82.4%), other studies found percentages of 76% and 70% [15,22].

In the current study, preoperatively, approximately 15 cases (44.2%) were having an air-bone gab more than 35dB and 3 cases (8.8%) were having an air-bone gab more than 45dB, while postoperatively these figures were worse, 6 cases(17.6%) were having an air-bone gab more than 35dB and 14 cases (41.2%) were having an air-bone gab more than 45dB. These worse postoperative hearing levels results can be attributed, on one hand, to ossicular erosion and, on other hand, there was no any attempt to reconstruct the hearing mechanism.

In other literature, such Vartainen & Kansanen, the preoperative air-bone gab more than 45dB of 221 cases was 29.7%, but postoperatively, it was 19.9%[23], while Tos &Lau found no statistically significant differences in hearing results[24].

Conclusion:

It was noted that surgical procedure gives better chance for control infection in active COM and that COM with cholesteatoma did significantly better than with granulation tissue 55.8% and 11.8% respectively. The difficulty in controlling the infection in COM with granulation tissue may be attributed to extensive and aggressive mucosal

disease which is commonly associated with such a variety of COM. On other hand, better control of infection was achieved in cases with cholesteatoma was attributed to surgical technique performed for those cases, where most of the cases with cholesteatoma were operated by canal wall down technique approximately 16 (76%) out of 21 cases together with a whole success rate of canal wall down technique is 78.3%.

Recommendations:

1. Canal wall down technique is effective in the treatment of COM with or without cholesteatoma and should be considered among the surgical option available to the otologic surgeon unless it performs in a sufficient technical manner. Hence, one-stage canal-down mastoidectomy is justified to make ears safe.

2. Insisting on proper follow-up for a sufficient period.

3. Large sample of patients is properly considered for accurate data for surgical outcomes.

References:

1) 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.
2) Nadol JB, Schuknecht HF. *Surgery of the Ear and Temporal Bone*.New York: Raven, 1993.
3) Kinny SE. Intact canal wall tympanoplasty with mastoidectomy for cholesteatoma. Long term follow-up. Laryngoscope 1988;98:1190-4.
4) Males AG, Gray RF. Mastoid misery. Quantifying the distress in a radical cavity. Clin Otolaryngol 1991;16:12-4.
5) Joseph B. Nadol Jr, MD. Revision Mastoidectomy. Otolaryngol Clin N Am 2006; 39:723–740.
6) Palmgren O. Long term results of open cavity and tympanomastoid surgery of the chronic ear. Acta Otolaryngol 1979; 88 (5–6):343–9.
7) Pillsbury HC 3rd, Carrasco VN. Revision mastoidectomy. Arch Otolaryngol Head Neck Surg 1990;116(9):1019.
8) Palva T. 1962. Reconstriction of ear canal in surgery for chronic ear. Arch Otolaryngol 75 , 329.
9) Jansen , C. 1963. The combined approach for tympanoplasty. J. Laryngol Otol 82, 779.
10) Glasscock, M. E.III. 1977. Result s in cholesteatoma. First international conference. Iowa City, Iowa (ed. B. F. McCabe, J. Sade' & M. Abramson) , pp.401-03.
11) Zollener, F., Altmann, F.(1978). Tympanoplasty, In:W. H. Maloney Otolaryngology: Otology, edited by M. English. New York. Harper and Row. Pp. 12/1-12/20.
12) Frootko, N. J. (1997). Recostruction of the middle ear, In Scott-Brown's otolaryngology: otology, edited by J. B. Booth . Oxford. Butterworth-Heinemann. pp.3/11/1-3/11/19.
13) Smyth, G.D.L.(1972). Outline of surgical management in chronic ear disease. Otolaryngology Clinics of North America. 5:59-77.
14) Palva T, et al. The invasion theory in cholesteatoma and mastoid surgery. In: Sade J, ed. Cholesteatoma and mastoid surgery. Amsterdam: Kugler Publications, 1982:249-264.
15) Brackmann E, et al (2010). Otologic surgery, 3rd edn. By Saunders, Elsevier. pp: 195-220.
16) Nadol JB. Causes of failure of mastoidectomy for COM.Laryngoscope 1985; 95 :410-3.
17) Paparella et al. Mastoidectomy update. Laryngoscope 1977; 87:1977-88.

18) Sadè J. (1977). Postoperative cholesteatoma recurrence . 1st international conference. Iowa City, Iowa (ed. J. Sade et al) pp:384-89.
19) Sadè J. et al. (1982). The marsupialized (radical) mastoid. Journal of laryngology & otology; 96; 869-875.
20) Palva T. et al. (1977). Cholesteatoma surgery canal wall down & mastoid obliteration. 1st international conference. Iowa City, Iowa (ed. J. Sade et al) pp: 363-67.
21) Joseph, J. and Miles, Anne and Ifeacho, S. and Patel, N. and Shaida, A. and Gatland, D. and Watters, G. and Kiverniti, E. (2015) A Comparison of quality of life outcomes following different techniques of mastoid surgery. Journal of Laryngology and Otology 129 (09), pp. 835-839. ISSN 0022-2151.
22) Kurien M, Job A, Mathew J, Chandy M. Otogenic Intracranial Abscess: Concurrent Craniotomy and Mastoidectomy—Changing Trends in a Developing Country. *Arch Otolaryngol Head Neck Surg.* 1998;124(12):1353–1356. doi:10.1001/archotol.124.12.1353
23) Vartiainen E, Kansanen M. Tympanomastoidectomy for Chronic Otitis Media without Cholesteatoma. *Otolaryngology–Head and Neck Surgery*. 1992;106(3):230-234. doi:10.1177/019459989210600304
24) Lau T, Tos M, Tympanoplasty in children, American Journal of Otolaryngology, 1986; 7: 55–59.

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دراسة سريرية لعملية استئصال عظم النتوء الحلمي للسيطرة على التهاب الأذن الوسطى القيحي المزمن

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الخلاصة

الخلفية:

ألتهاب الأذن الوسطى القيحي المزمن ممكن السيطرة عليه وبشكل مقبول بالتداخل الجراحي، مثلما أمكانية السيطرة عليه باستخدام العلاج التحفظي.

انصباب الأذن مع\أو الضعف السمعي يمكن السيطرة عليه أو تقليله بالتداخل الجراحي.

على الرغم من وجود عدة طرق جراحية للسيطرة على التهاب الأذن الوسطى القيحي المزمن، في أغلب الأحيان الطريقة المقترحة يكون اختيارها على أساس الوضع التشريحي وامتداد المرض.

الهدف:

تقييم فعالية عملية استئصال عظم النتوء الحلمي للسيطرة على ألتهاب الأذن الوسطى القيحي المزمن.

المرضى والطرق:

هذه دراسة مستقبلية أجريت في مستشفى الجراحات التخصصية/ قسم الأنف والأذن والحنجرة، حيث أخضع 34 مريض يعانون من التهاب الأذن الوسطى القيحي المزمن الفعال لعملية استئصال عظم النتوء الحلمي(الخشاء)في الفترة من آذار-2010الى تشرين الأول-2010وتمت متابعة حالتهم لفترة 8 أشهر.

جمعت المعلومات المتعلقة بأعمار وأجناس المرضى وتم أجراء تقييم سريري أشتمل على تأريخ الحالة وفحص سريري للأذن والأنف والحنجرة حيث حددت الأعراض والعلامات السريرية، مع تقييم سمعي وشعاعي وفحوصات الدم المختبرية، حيث درست هذه المعلومات وحللت تفصيليا".

أخضعت جميع الحالات المرضية الى الاستكشاف الجراحي بأحداث فتحة في جيب النتوء الحلمي(الخشاء)،حيث تم أجراء عملية استئصال النتوء الحلمي مع أنزال المتن العظمي لعصب الوجه في 23حالة وبدون أنزاله في 11حالة مع ترقيع غشاء طبلة الأذن باستخدام نسيج من الصفاق الصدغي أو غضروف صيوان الأذن وتم متابعة الحالات لفترة 8 أشهر.

النتائج:

بينت الدراسة أن:

-32,4%(11حالة) بقيت تعاني من أستمرار الألتهاب، بينما بلغت الحالات التي تماثلت للشفاء67,6%(23حالة).

- نسبة شفاء وجفاف الأذن في الحالات التي شوهدت فيها الكوليستياتوما كانت55,8%(19حالة)، بينما نسبة الشفاء في الحالات التي شوهدت فيها آفة النسيج الحبيبي المزمن كانت 11,8%(4حالات).

- نسبة الحالات التي بقيت تعاني من التهاب الأذن في المصابين بالكوليستياتوما فكانت 6%(حالتين)، في حالة المصابين بآفة النسيج الحبيبي المزمن فكانت 26,4%(9حالات).

- نسبة الحالات التي تماثلت للشفاء بعد عملية أستصال النتوء الحلمي مع أنزال المتن العظمي لعصب الوجه فكانت78,3%(18حالة)، بينما نسبة التي بقيت تعاني من انصباب الأذن فبلغت 21,7%(5حالات).

- نسبة الحالات التي تماثلت للشفاء بعد عملية أستصال النتوء الحلمي بدون أنزال المتن العظمي لعصب الوجه فكانت45,5%(5حالات)، بينما نسبة التي بقيت تعاني من انصباب الأذن فبلغت 54,5%(6حالات).

الاستنتاج:

يمكن القول بأن العملية الجراحية باستئصال النتوء الحلمي تعطي نتائج جيدة للسيطرة على التهاب الأذن المزمن الفعال، وأن النتائج جيدة بعد استخدام هذه العملية مع أنزال المتن العظمي لعصب الوجه وأن النتائج في حالة آفة الكوليستياتوما أفضل مماهي عليه في حالة آفة النسيج الحبيبي المزمن.