factors were: Age below 15 years, extension of cholesteatoma into the mastoid, erosion of the incus, and erosion of the stapes. Overall, there was a significant pre- to post-operative air-bone gap (ABG) improvement of 4.05 dB (1.0–7.1).

Conclusions: Long term recurrence rates and prognostic factors of CWU mastoidectomy help decision making in surgical approach and risk stratification of patients. Especially children with large choleateomas extending into the mastoid and with concomitant bone erosions should be carefully followed up.

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How do we approach cholesteatoma (N613)

ID: 613.1

Modified Bondy technique: indications and technique

Presenting Author: **Anna Lisa Giannuzzi**

Anna Lisa Giannuzzi[1], Enrico Piccirillo[2], Mario Sanna[2]
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Learning Objectives:

Introduction: Modified Bondy technique in indicated in patients with epitympanic cholesteatoma, good hearing and intact pars tensa and ossicular chain. It permits to eradicate the desease with a single stage procedure. This presentation evaluates the short- (6 mo) and long-term (5 yr) outcomes of modified Bondy technique, with particular reference to hearing results.

Methods: Four hundred eight ears were operated on, using a modified Bondy technique between 1983 and 2013. All patients had primary acquired epitympanic cholesteatomas with intact pars tensa and intact ossicular chain in normal or good-hearing ear. Preoperative audiometric results revealed a mean air conduction pure-tone average of 27.7 ± 9.6 dB (range, 10–65 dB) and a mean bone conduction pure-tone average of 14.2 ± 6.4 dB (range, 5–50 dB). The mean preoperative air-bone gap was 13.5 ± 6.7 dB (range, 0–25 dB). The average length of follow-up was 7.8 years (range, 5–16 yr).

Results: There was no recurrent cholesteatoma in the present series. A pearl-like residual cholesteatoma was found in the cavity in 7.4% of ears; 0.8% developed stenosis of meatoplasty, 1.3% exhibited retraction pockets extending to the attic. Postoperative discharging ear was observed in 3% of cases and was successfully treated with topical drops. At the long-term follow-up, the air-bone gap was unchanged or improved from the preoperative level in 88% of cases. The mean postoperative short- and long-term air-bone gaps were 14.6 ± 8.5 dB (range, 0–55 dB) and 14.1 ± 8.2 dB (range, 0–50 dB), respectively. Postoperative high-frequency sensorineural hearing loss was observed in 1.7%. No dead ears were encountered postoperatively.

Conclusion: A modified Bondy operation is recommended in selected cases of epitympanic cholesteatoma in normal or good-hearing ear with an intact pars tensa and ossicular chain. Modified Bondy technique ensures complete eradication of disease while preserving a good preoperative hearing in 1-stage operation.

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How do we approach cholesteatoma (N613)

ID: 613.2

How to perform a good canal wall up mastoidectomy

Presenting Author: **Gianluca Piras**

Gianluca Piras, Alessandra Russo, Enrico Piccirillo, Flavia D'Orazio, Sampath Chandra Prasad Rao, Mario Sanna
Gruppo Otologico

Learning Objectives: How to perform a good canal wall up mastoidectomy.

Various techniques for cholesteatoma surgery have been developed, practiced, criticized, and favored by different otologists. The current dilemma regarding the choice of technique reflects differences of option between various schools of thinking in Otology. However, both the open and closed techniques have now been individualized, and the choice of procedure can be made in accordance with certain indications in order to optimize the results. In the 1960s Bill House popularized Canal Wall Up (CWU) mastoidectomies; since then CWU mastoidectomy has remained the ideal surgical treatment for pediatric cholesteatoma. This technique allows preservation of the hearing function without aestetic modification of the external ear. The limit of this technique is the incresed risk of cholesteatoma recurrence or residual; for this reason, a two-stages procedure is preferred. Indications for CWU mastoidectomy are cholesteatoma in pneumatized mastoids, children, limited epitympanic erosion, mesotympanic cholesteatoma, limited congenital cholesteatoma. Contraindications are a widespread disease, bony distruction and poor hearing. The aim of our presentation is to show technical refinements of this technique, focusing on surgical cases and results in pediatric population.

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How do we approach cholesteatoma (N613)

ID: 613.3

Subtotal Petrosectomy in the management of difficult cases of cholesteatoma

Presenting Author: **Sampath Chandra Prasad**

Sampath Chandra Prasad, Valeria Roustan, Enrico Piccirillo, Annalisa Giannuzzi, Mario Sanna
Gruppo Otologico

Learning Objectives:

Objectives: The purpose of this study was to review the indications for subtotal petrosectomy in difficult cases of cholesteatoma, report our management of complications, as

well as review those technical factors that are critical for successful outcomes.

Methods: Patients (n = 240) that underwent subtotal petrosectomy with closure of the external auditory canal and obliteration of the cavity with abdominal fat for various presentations of cholesteatoma were analyzed.

Results: The most frequent indication for subtotal petrosectomy was in recurrent disease, previous radical cavities, in petrous bone cholesteatomas and in meningoencephalic herniations. Recurrence of cholesteatoma was seen in only 4 (1.7%) cases. Other minor postoperative complications like wound dehiscence and infection of fat in the cavity etc occurred in 13 patients (11.83%).

Conclusions: Subtotal petrosectomy permits obtaining a cavity isolated from the external environment, and when needed, it improves the access and visibility during the surgical procedure. Subtotal petrosectomy is a safe technique, with a low rate of complications.

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How do we approach cholesteatoma (N613)

ID: 613.4

Tips and tricks in Open Tympanoplasties

Presenting Author: **Enrico Piccirillo**

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Gruppo Otologico

Learning Objectives: To evaluate the outcomes of open tympanoplasties (canal wall down mastoidectomies) for cholesteatomas.

Study Design: Retrospective study.

Setting: Gruppo Otologico, a quarternary referral center for Otology and Skull Base Surgery in Italy.

Methods: 1324 cases with a minimum of 2-years follow-up that were operated for middle ear and mastoid cholesteatoma using the open technique were included in the study. The outcomes of were analyzed and the results were compared with a literature review.

Results: The mean follow up was 46.43 months. The mean pre-operative air bone gap was 37 ± 7 dB. Simultaneous ossicular reconstruction was performed in 32% of the cases. A second stage reconstruction was perfomed in 42% of the cases. Recurrent cholesteatomas were seen in 6% of cases in our series. 1% patients developed stenosis of the meatoplasty. Postoperative ear discharge was observed in 4% cases.

Conclusion: The open (canal wall down) technique is a tried and tested procedure in recurrent and large cholesteatoma with considerable pre-operative hearing loss.

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Evidence based practice in Cholesteatoma Surgery (R614)

ID: 614.1

What do we do in the absence of evidence?

Presenting Author: **Iain Swan**

Iain Swan

Glasgow Royal Infirmary

Modern medical practice should be based on evidence, but often in surgery we have little evidence for our surgical practice. Traditionally surgeons have relied on what they have been taught by their trainers or read in textbooks. The main source of information nowadays is the published literature but, in surgery, this is usually case series which is level 5 evidence. This raises several questions:

Are my patients comparable?

Do I have the skills to achieve these outcomes?

Has the surgeon included all the patients in the results?

The only results that you can rely on are your own. But human memory is selective and we tend to forget our poor results and remember the good ones. To reliably assess our own results requires audit. All surgeons should prospectively audit their own results. Using an established audit database is the most practical way to do this as others have already decided the most useful data to collect. Your data should be reviewed regularly, and results of your audit should be reported each year at your annual appraisal.

Auditing your own results allows you to compare your outcomes with those of other surgeons and tells you what is working and what needs improving.

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Evidence based practice in Cholesteatoma Surgery (R614)

ID: 614.2

Canal wall up versus canal wall down mastoidectomy for acquired cholesteatoma; a systematic review on disease recurrence rates

Presenting Author: **Jef Mulder**

Jef Mulder[1], Franco Abes[2], Casper Tax[1]

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Learning Objectives: The aim of this study is to compare the proportion of disease recurrences in patients with acquired cholesteatoma, 5 years after Canal Wall Up or Canal Wall Down mastoidectomy.

Introduction: Cholesteatoma is a destructive ear disease. Therapy consists of surgical removal by mainly the canal