"CORRELATION OF CLINICAL AND PATHOLOGICAL FINDINGS IN AURAL POLYPS"

By

DR. DEEPTHI. M

DISSERTATION SUBMITTED TO

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH, KOLAR

In partial fulfilment of the requirements for the degree of

MASTER OF SURGERY

in

OTORHINOLARYNGOLOGY

Under the guidance of

DR. K.C. PRASAD

MBBS, MS (E.N.T), FELLOWSHIP IN OTOLOGY

PROFESSOR

DEPARTMENT OF OTORHINOLARYNGOLOGY

Under the Co- guidance of

DR. KALYANI R

MBBS, MS(PATHOLOGY), PhD, FAMS, FICP

PROFESSOR

DEPARTMENT OF PATHOLOGY

SRI DEVARAJ URS MEDICAL COLLEGE

TAMAKA KOLAR

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Date:

Place:

Dr. K C PRASAD

MBBS, MS Fellowship in

OTOLOGY

Professor

Department of Otorhinolaryngology,

Sri Devaraj Urs Medical College, Tamaka,

Kolar.

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Date:

Place :

DR KALYANI R

MBBS, MD(PATHOLOGY) , PhD, FAMS, FICP

PROFESSOR

DEPARTMENT OF PATHOLOGY,

SRI DEVARAJ URS MEDICAL

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DATE:

Place:

D **r. S.M AZEEM MOHIYUDDIN,**

MBBS, MS, FACS, FICS, MNAMS,

Sekhsaria Fellowship In Head & Neck Surgery

Professor and HOD

Department of Otorhinolaryngology,

Sri Devaraj Urs Medical College,

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Dr. S.M AZEEM MOHIYUDDIN,

MBBS, MS, FACS, FICS, MNAMS,

SEKHSARIA FELLOWSHIP IN HEAD AND NECK SURGERY
Professor and HOD
Department of Otorhinolaryngology,
Sri Devaraj Urs Medical College,
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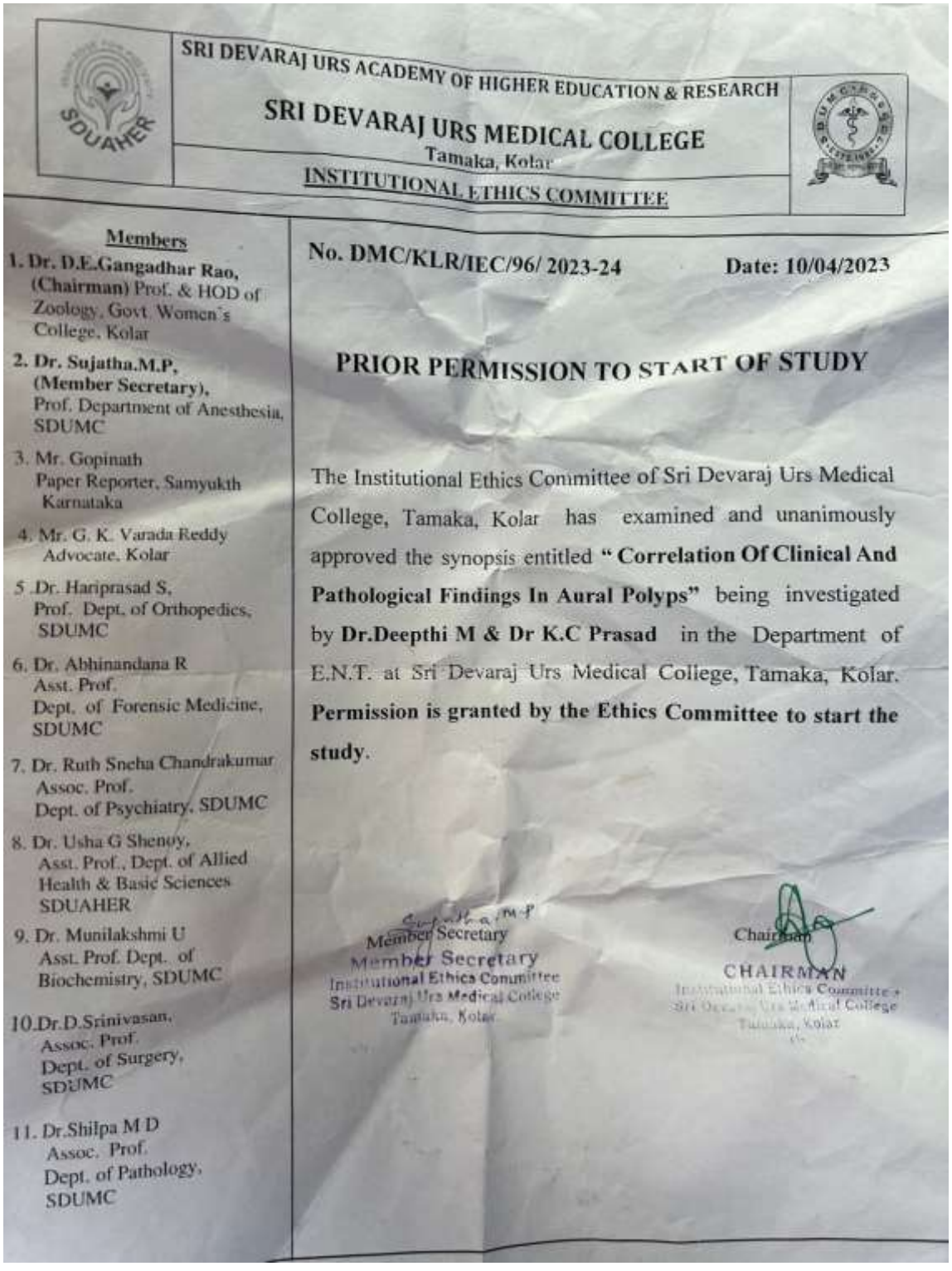

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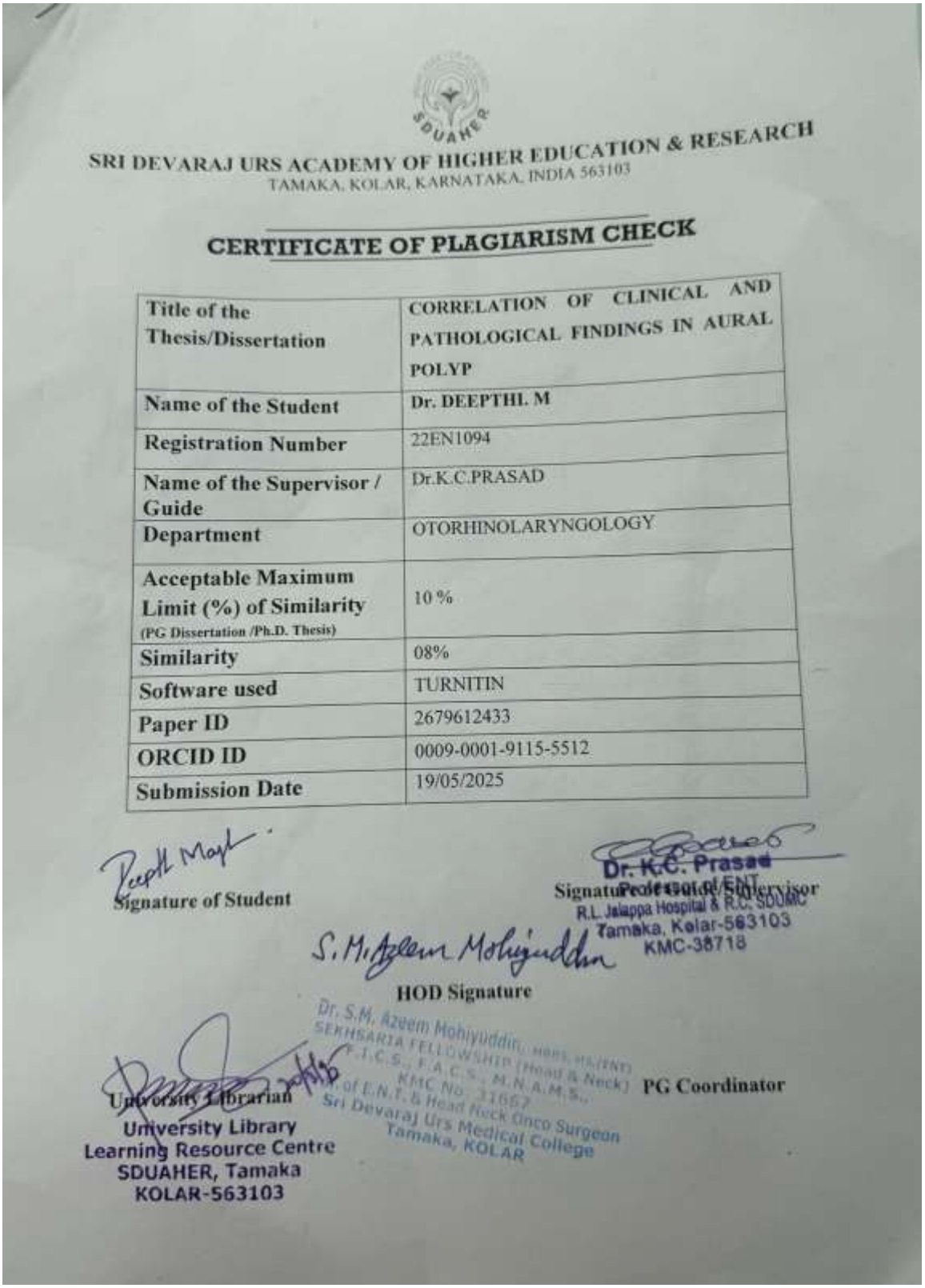

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R.L. Jalappa Hospital & R.C. SDUAHER
Tamaka, Kolar-563103
KMC-38718

HOD Signature

Dr. S.M. Azeem Mohiyuddin, MBBS, MS(ENT)
SEKHSARIA FELLOWSHIP (Head & Neck)
F.I.C.S., F.A.C.S., M.N.A.M.S.,
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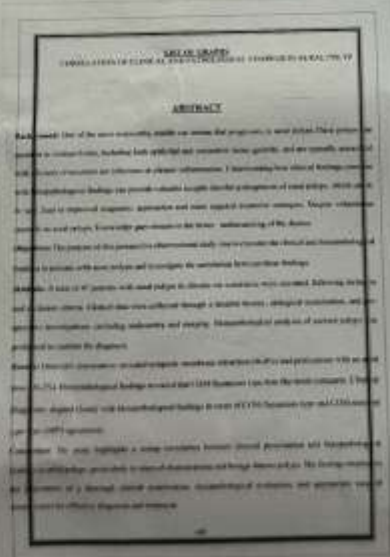

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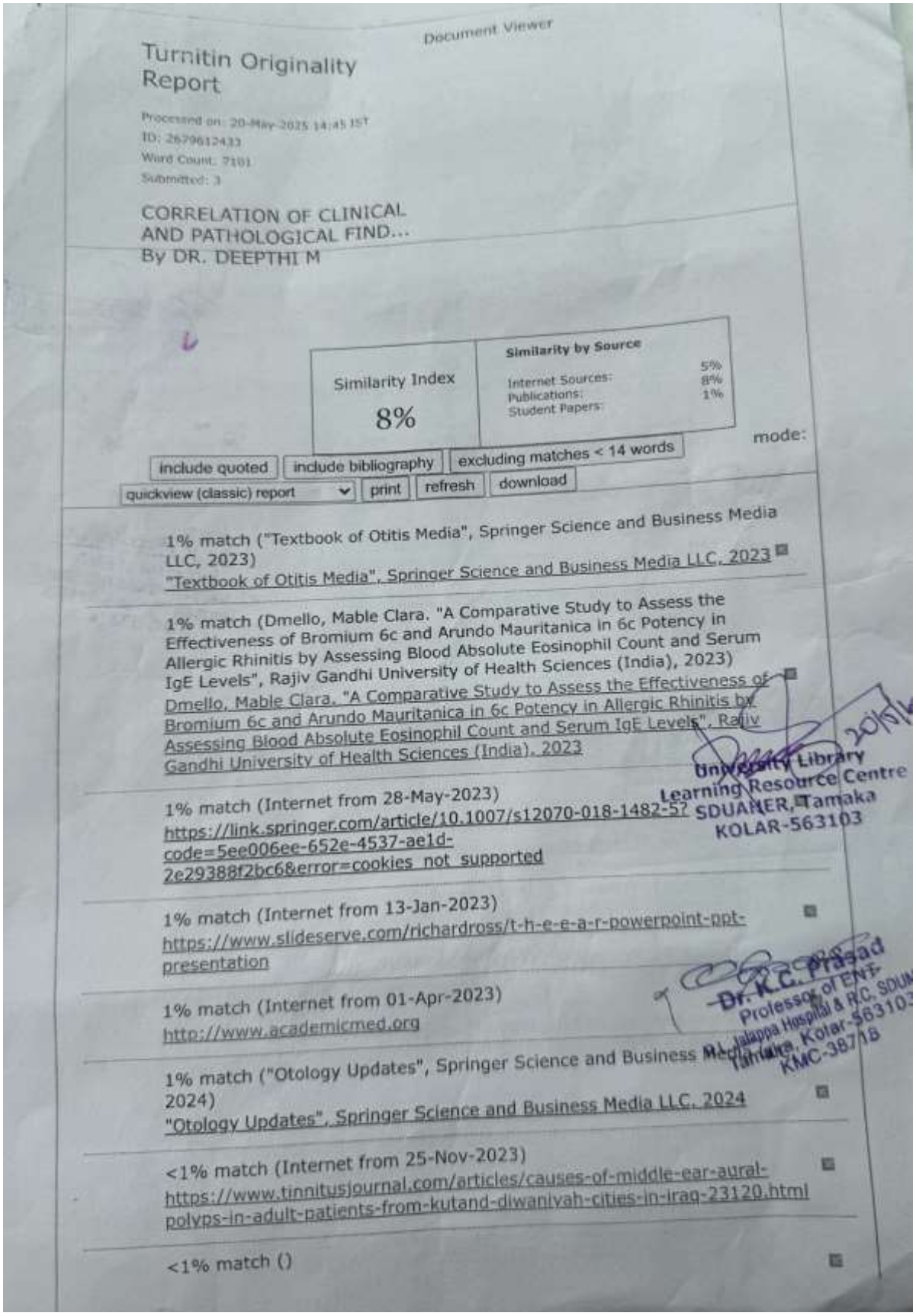

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Dr. K.C. Prasad
Professor of ENT
Jalappa Hospital & RC, SDUA
Tamaka, Kolar-563103
KMC-38718

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DR. DEEPTHI M

ABSTRACT

Background: One of the most noteworthy middle ear lesions that progresses, is aural polyps.These polyps can manifest in various forms, including both epithelial and connective tissue growths, and are typically associated with a history of recurrent ear infections or chronic inflammation. Understanding how clinical findings correlate with histopathological findings can provide valuable insights into the pathogenesis of aural polyps, which could, in turn, lead to improved diagnostic approaches and more targeted treatment strategies. Despite voluminous research on aural polyps, Knowledge gaps remain in the better understanding of the disease

Objectives: The purpose of this prospective observational study was to examine the clinical and histopathological findings in patients with aural polyps and investigate the correlation between these findings.

Methods: From May 2023 to October 2024, the study was carried out at the R.L. Jalappa Hospital and Research Centre in Kolar. A total of 47 patients with aural polyps in chronic ear conditions were recruited, following inclusion and exclusion criteria. Clinical data were collected through a detailed history, otological examination, and pre-operative investigations, including audiometry and imaging. Histopathological analysis of excised polyps was performed to confirm the diagnosis. Version 20 of the Statistical Package for Social Science (SPSS) was used to analyze the data.

Results: The most common presenting symptom was ear discharge (76.6%), followed by hearing loss/blocking sensation (38.3%). Otoscopic examination revealed tympanic membrane retraction (46.8%) and perforations with an aural mass (36.2%). Histopathological findings revealed that COM-Squamous type was the most common pathology (48.9%), followed by COM-mucosal type type (21.3%) and tubercular otitis media (14.9%). Clinical

diagnoses aligned closely with histopathological findings in cases of COM-Squamous type and COM-mucosal type type (100% agreement).

Conclusion: The study highlights a strong correlation between clinical presentation and histopathological findings in aural polyps, particularly in cases of cholesteatoma and benign fibrous polyps. The findings emphasize the importance of a thorough clinical examination, histopathological evaluation, and appropriate surgical management for effective diagnosis and treatment.

Keywords: Aural Polyps, Cholesteatoma, Chronic Otitis Media, Middle Ear Pathology, Granulomatous Polyp, Tympanic Membrane Retraction

LIST OF ABBREVIATIONS

S.NO	ABBREVATION	EXPANSION
1	COM	chronic otitis media
2	BCC	basal cell carcinomas
3	SCC	squamous cell carcinomas
4	EAC	external auditory canal
5	LCH	Langerhans cell histiocytosis
6	MOE	Malignant otitis externa
7	ENT	EAR NOSE THROAT
8	HRCT	high resolution computed tomography
9	MRI	magnetic resonance imaging
10	IEC	Institutional Ethics Committee
11	ECG	ELECTROCARDIOGRAM
12	SPSS	Statistical Package for Social Science
13	KPS	**Karnofsky Performance Status.**

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INTRODUCTION

INTRODUCTION

One of the most noteworthy middle ear lesions that progresses, is aural polyps. Aural polyps are benign, inflammatory growths that commonly impact the middle ear and ear canal, frequently resulting in chronic otitis media or other ear-related complications. These polyps can manifest in various forms, including both epithelial and connective tissue growths, and are typically associated has a history of persistent inflammation or recurrent ear infections. Aural polyps that grow from the tympanic membrane outward to the external auditory canal can cause tympanic membrane perforation and hearing loss because of chronic otitis media (COM). Although mortality and morbidity are often uncommon, a declared diagnosis or persistent patient neglect could raise the danger complication of malignant squamous carcinoma or cholesteatoma.[1]

Finding a polyp in the external auditory canal is commonly thought to be a sign of inflammatory middle ear disease. Often recognized as a soft to rubbery reddish mass located lateral to the tympanic membrane in the external auditory canal, it is also referred to as an aural polyp.[2] Cholesteatoma is the form of COM that most otologists think of as the underlying cause of an aural polyp. COM is described as persistent inflammation of the middle ear and mastoid cavity that manifests as otorrhea due to a perforation in tympanic membrane. COM frequently affects poorer socioeconomic groups and is more prevalent in rural locations. In India, prevalence rates for chronic otitis media range from 16 per 1000 to 46 per 1000 people in rural and urban areas, respectively.[3]

The incidence of cholesteatoma as the concluding diagnosis for polyps was estimated in earlier research to be highly variable, ranging from 25% to 88%.[2]

Understanding how clinical findings correlate with histopathological findings can provide valuable insights into the pathogenesis of aural polyps, which could, in turn, lead to improved diagnostic approaches and more targeted treatment strategies.

Despite voluminous research on aural polyps, Knowledge gaps remain in the better understanding of the disease and apart from aural polyps arising from safe and unsafe diseases of the ear, they also arise from metastases from distant organs as well as paragangliomas, glomus tumour, exocytosis, keratosis obturans, facial neuroma, vascular lesions, osteochondromas, neuromas , basalcell carcinomas, squamous cell carcinomas , Langerhans cell histiocytosis and osteochondromas, Malignant otitis externa. Despite their relatively frequent occurrence, there remains a limited understanding of the exact mechanisms and clinical implications of aural polyps, particularly when considering their histopathological characteristics. Therefore, the purpose of this study is to examine the clinoco-pathological etiology of auditory polyps in chronic ear diseases.

AIM OF STUDY

AIM OF STUDY

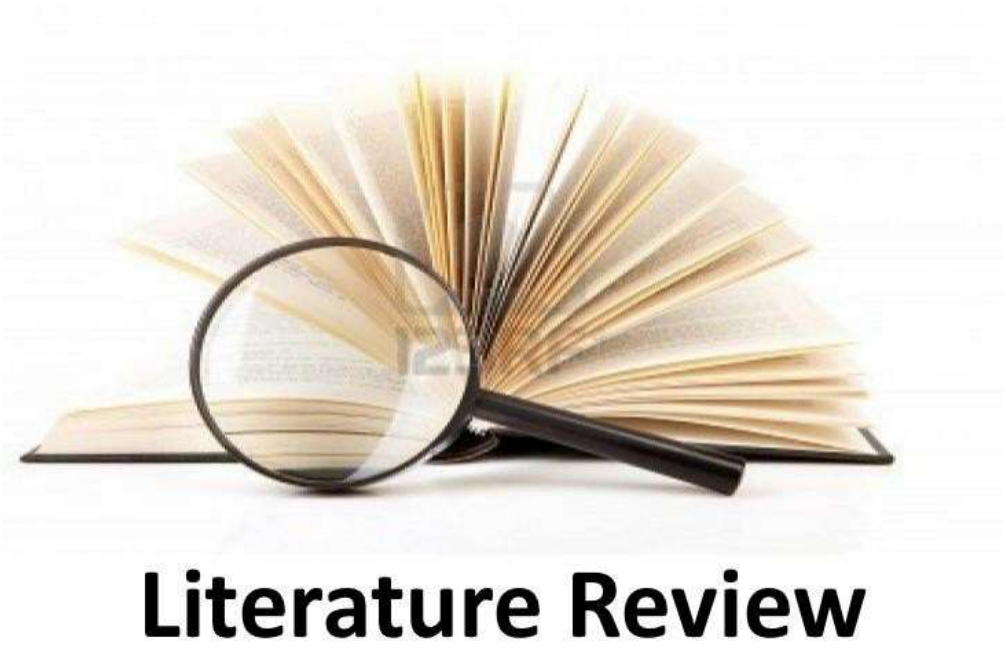
- To associate the clinical findings and histopathological findings of aural polyps.

OBJECTIVES

OBJECTIVES

- To analyse the clinical findings of the aural polyp.
- To analyse histopathological findings in aural polyp.
- To find association between clinical findings and histopathological examination findings in aural polyp.

REVIEW OF LITERATURE



REVIEW OF LITERATURE

An aural polyp is a soft to rubbery reddish mass that typically presents within the external auditory canal. The polyp is usually the result of inflammatory proliferation, and its presence signifies active ear disease. It is lined by pseudostratified columnar, cuboidal and occasionally squamous epithelium, and may be of external or middle ear origin[4]. An aural polyp is a growth in the outside (external) ear canal or middle ear. It may be attached to the eardrum (tympanic membrane), or it may grow from the middle ear space. Usually arises from the middle ear. Aural polyps in the external auditory canal (EAC) can develop from the external auditory canal, the middle ear, or adjacent structures like the parotid gland and temporomandibular joint (due to secondary disease invasion) [5,6]. Although these polypoid tumors are typically inflammatory, they can also be an indication of a more serious illness. Bilateral inflammatory aural polyps have been described in asthmatics with aspirin hypersensitivity and chronic rhinosinusitis with sinonasal polyposis (Samter's triad)[7,8].

It May extend into the external auditory canal if tympanic membrane perforated. It occurs worldwide; although it tends to be more common in the developing countries due to its association with chronic inflammatory diseases of ear which are more prevalent in these places[9]. The surface can be ulcerated, covered in a hyperemic respiratory mucosa or have areas of squamous metaplasia [10]. Unusual cases of aural polyps occurring sporadically have been reported in humans [11] as well as in companion animals like dogs[12] and cats[13].

Aural polyps may be caused by:

- Cholesteatoma
- Foreign object in the ear
- Inflammation of the ear canal or middle ear
- Tumour of the ear canal or middle ear

A persistent mastoid or middle ear infection might lead to aural polyps. Clinically, polyps are edematous mucosa or granulation tissue that protrudes via a tympanic membrane rupture from the middle ear mucous membrane. Granulation tissue polyps are fragile, red, and easily bleed when touched at the developing stage. Later, polyps lose their vibrant red colour and instead take on a drab pink hue as they become more fibrous and/or have their surface covered with metaplastic squamous epithelium. Otorrhea with pus is always present [14].

Aural polyps are typically the presenting sign of chronic otitis otitis media, tuberculous otitis media, and adenoma or carcinoma[15].

Microscopically, polyps exhibit fibrous tissue and cholesterol crystals together with a chronic inflammatory reaction, numerous tiny blood arteries, and histiocytes. Long-lasting polyps that have undergone metaplasia may have ulcerated, pseudo-stratified columnar, cuboidal, or squamous epithelium on their surface. Cholesteatoma frequently has polyps linked with it. [14]

An auditory polyp frequently conceals an underlying cholesteatoma and denotes a middle ear condition with a history of disease and a high risk of complications[15].

Aural polyps that grow from the tympanic cavity outward to the external auditory canal as a result of chronic otitis media can rupture the tympanic membrane and cause hearing loss. In the early stages of the disease, these lesions can be viewed as an aberrant and widespread mucous membrane growth rich with soft granulation tissue and are typically non-cancerous in

origin. Eventually, fibrous connective tissue takes the place of the soft granulation tissue and turns the polyps into a hard mass with the potential to foster the growth of tumours. Polyps can form in the middle ear and external auditory tube as a result of ongoing irritation or an infection of unknown origin. Patients may experience otalgia and otorrhea as the condition worsens over time. Although morbidity and mortality are often uncommon, a delayed diagnosis or persistent patient neglect could raise the risk of cholesteatoma or malignant squamous carcinoma[1] **.** The incidence of either granulomatous or neoplastic disease is estimated at up to 3% of surgical specimens in some studies[6,16]**.**

Pathophysiology

Complex interplay of inflammatory processes, tissue remodeling and cellular proliferation within the ear canal or middle ear. Chronic inflammation and irritation of the mucosal lining of the ear, often secondary to conditions such as chronic otitis media or repeated trauma, lead to the accumulation of inflammatory cells, cytokines and growth factors within the affected tissues; this triggers a cascade of cellular responses, including fibroblast activation, angiogenesis and tissue remodeling, which contribute to the development of otic polyps.

Clinical features:

Many patients present to physicians when symptoms of either earache, hearing loss or feeling of fullness in the ear is noticed, or when the ear discharge becomes bloody[17,18]. Clinical manifestations of aural polyps include hearing loss, ear discharge, or fullness in the ear. Due to the frequent correlation of these masses with squamosal chronic otitis media, an aural polyp that is not adhered to the walls of the EAC and does not go away after being treated with topical antibiotics and corticosteroids is frequently recognized as being caused by this condition[19]**.** Recurrent ear discharge or otorrhea due to a perforated tympanic membrane characterize

chronic otitis media[2]. Osteitis or cholesteatoma erosion is the most typical reason for the extension of chronic otitis media[11].

Aural polyps in the external auditory canal (EAC) can develop from the external auditory canal, middle ear (where various middle ear lesions can enter the external auditory canal, middle ear (where various middle ear lesions can enter the external auditory canal through the tympanic membrane), and nearby structures like the parotid gland and temporomandibular joint (where the disease has spread secondary to the external auditory canal). Although these polypoid tumours frequently have an inflammatory character, they can also be a sign of more serious illness[19].

Nonetheless, surgeons should not disregard other potential illnesses that could manifest as polyps in the EAC. There is a long range of illnesses that can also manifest as an aural polyp, and they differ in frequency, seriousness, and urgency. These lesions frequently raise concerns that they might be malignant lesions in their appearance. Examples include metastases from distant organs as well as paragangliomas, glomus tumour, exocytosis, keratosis obturans, facial neuroma, vascular lesions, osteochondromas, neuromas, basal cell carcinomas (BCC), squamous cell carcinomas (SCC), Langerhans cell histiocytosis(LCH), and osteochondromas. Malignant otitis externa (MOE) is a diagnosis that is dramatic but not cancerous. Also, as it is an infection that needs to be treated right away with antibiotics, it should be kept in mind[2].

Due to the high prevalence of COM and the clinical similarities between ear discharge, hearing loss, and an aural polyp, it is not surprising that ENT surgeons and radiologists may unintentionally overlook or misinterpret other disorders. Also, because an aural polyp biopsy is taken from the polyp's periphery, it may not be able to provide the accurate diagnosis in these circumstances. This might have an impact on treatment, particularly surgery. The majority of pathological disorders of the temporal bone, which have a complicated anatomy and numerous

tiny structures, are best visualized with high resolution computed tomography (HRCT) temporal bone [19] pre-operatively and a histopathological sample of the polyp taken can be sent for histopathological examination which is the gold standard for diagnosis of aural polyps. Moreover, preoperative biopsy of the auditory polyps in these individuals could postpone the accurate diagnosis if the sample is taken from the lesion's farthest peripheral region, which is not the area that is representative.

Histopathological examination:

Many studies in the literature concern case reports of unusual pathologies presenting as aural polyps. [9,20,21] Histopathological examination of aural polyps reveals a variety of findings, primarily depending on the degree of inflammation and the type of tissue involved. The presence of chronic inflammatory cells such as plasma cells and lymphocytes in the stroma of the polyp is considered a hallmark feature of aural polyps, often reflecting an ongoing immune response. Additionally, the degree of epithelial changes—such as hyperkeratosis, metaplasia, and ulceration—can vary and may be associated with the duration of the condition. Some studies have highlighted the presence of mast cells and eosinophils in the inflammatory infiltrate, particularly in polyps associated with allergic conditions or fungal infections. [22] Aural polyps are the result of chronic inflammation of the middle ear or mastoid. As seen clinically, polyps represent granulation tissue or oedematous mucosa arising from the mucous membrane of the middle ear protruding through a perforation in the tympanic membrane. Granulation tissue polyps in the forming stage are soft, red, and bleed readily when touched. Later, polyps become more fibrous, and the surface may be covered with metaplastic squamous epithelium so that they no longer are bright red but dull pink. Purulent otorrhea is invariably present[22]**.** Microscopically, polyps show a chronic inflammatory reaction with many small blood vessels and histiocytes and some show fibrous tissue and cholesterol crystals. The surface of the polyp may be ulcerated or there may be pseudostratified columnar or cuboidal epithelium or

squamous epithelium due to metaplasia in polyps of long duration. Polyps are commonly associated with cholesteatoma. Some the histology findings[22] in patients presented with aural polyp discussed in figures 1-4.

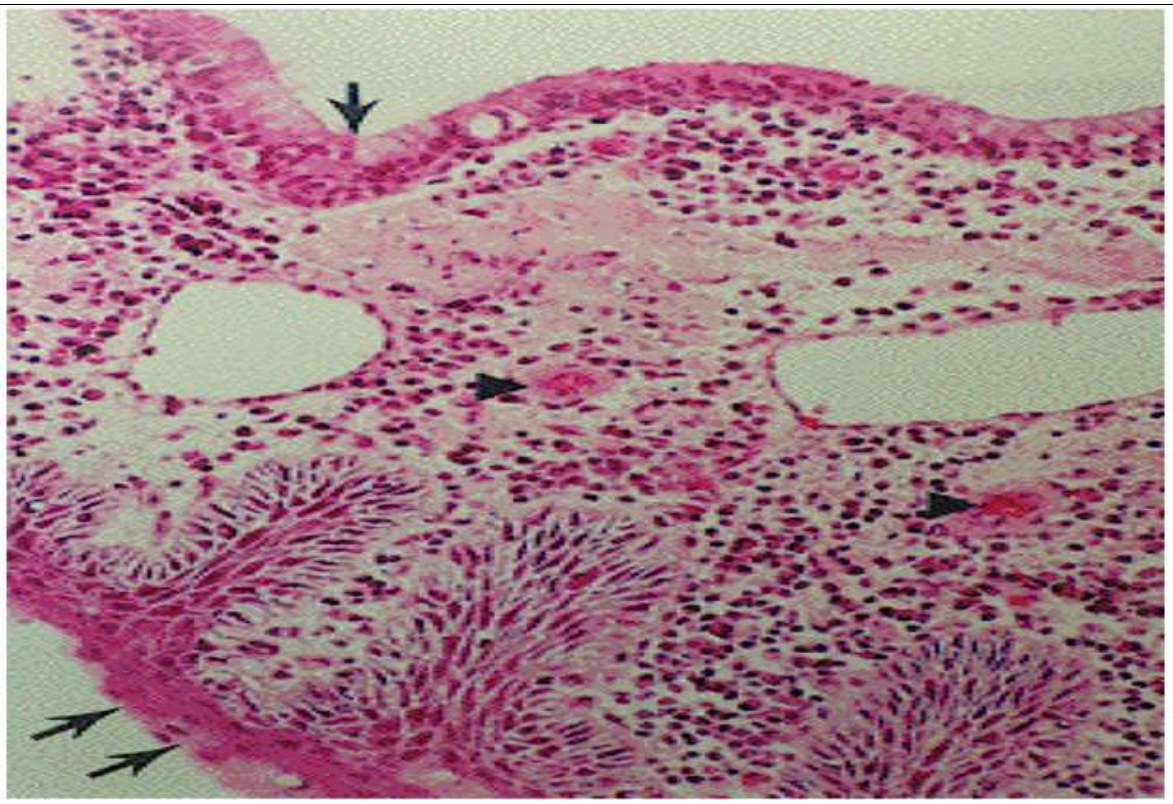


Figure-1: Aural polyp from the middle ear composed of granulation tissue showing a mucous membrane side with low columnar cells (single arrow) and a squamous side (double arrows) facing outward (metaplasia). The large spaces with endothelial lining are blood vessels. There are also several budding capillaries (triangles) and many chronic inflammatory cells. When the polyp was removed and the ear treated with antibiotic drops, the inflammation subsided[22].

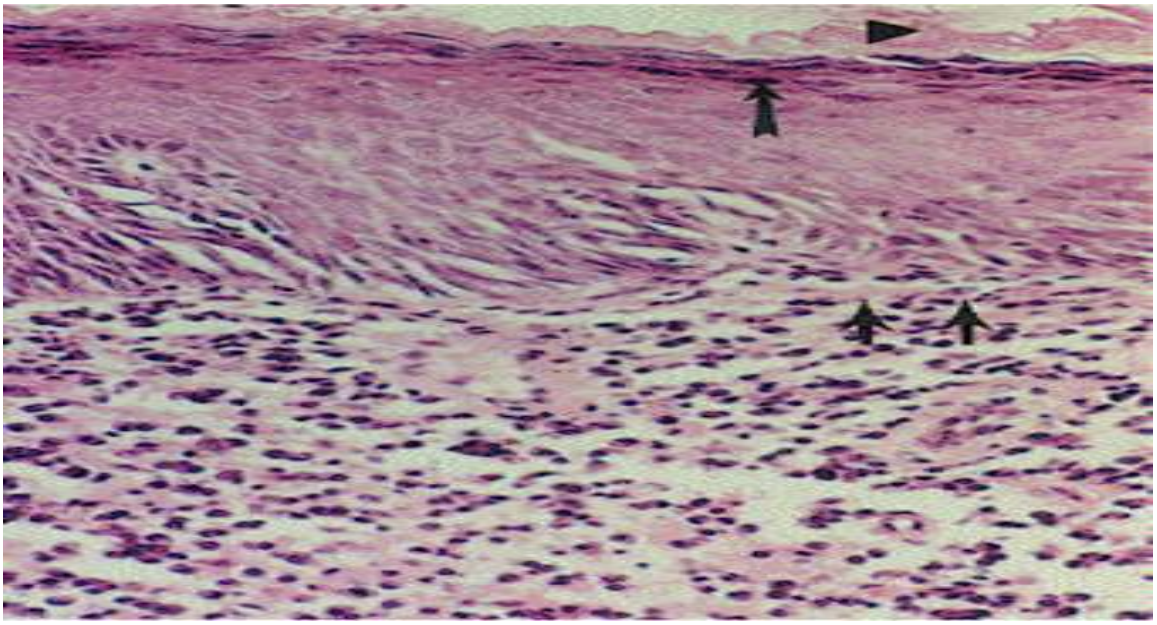


Figure-2: This section through a large aural polyp with squamous epithelium might be considered cholesteatoma matrix overlying granulation tissue. Aural polyp showing thick layer of well-developed squamous epithelium with a granular cell layer (single arrow)and keratin desquamation (triangle). This epithelium rests on chronic granulation tissue (double arrows)[22].

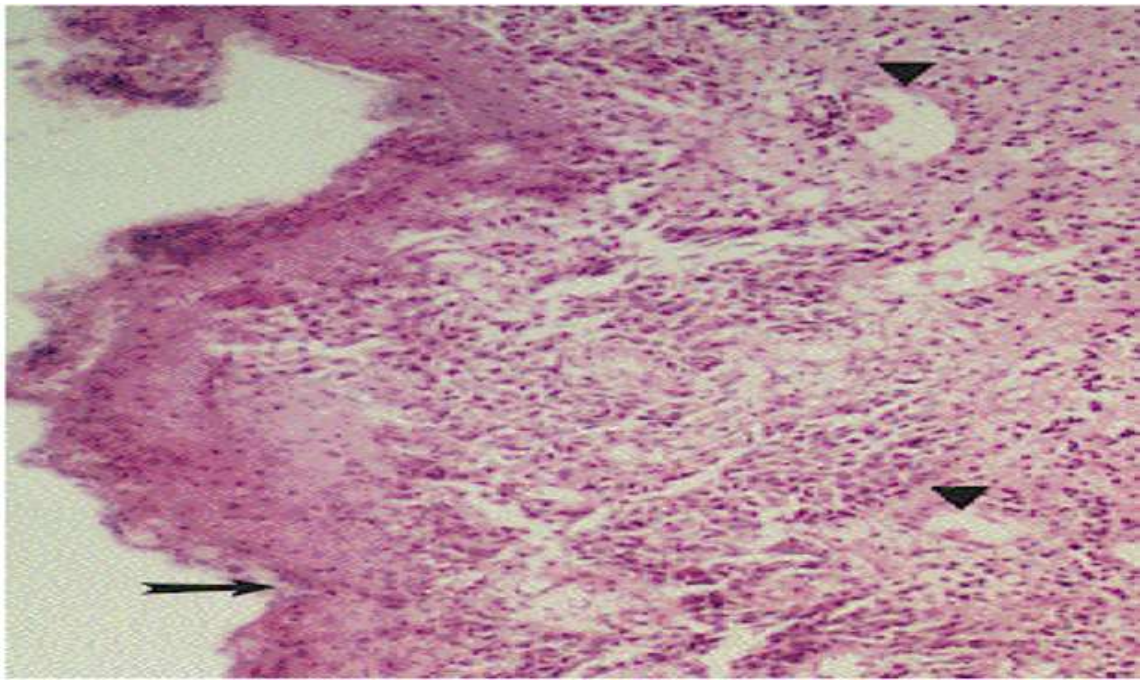


Figure-3: Traumatic Aural polyp arising from the ear canal in patient with an intact tympanic membrane. Squamous epithelium (arrow) covers granulation tissue in this part of the polyp. The remainder of the surface was ulcerated. Here the polyp was the result of trauma to the epithelium of the ear canal. Triangles indicate blood vessels amidst fibrocytes and chronic inflammatory cells[22].

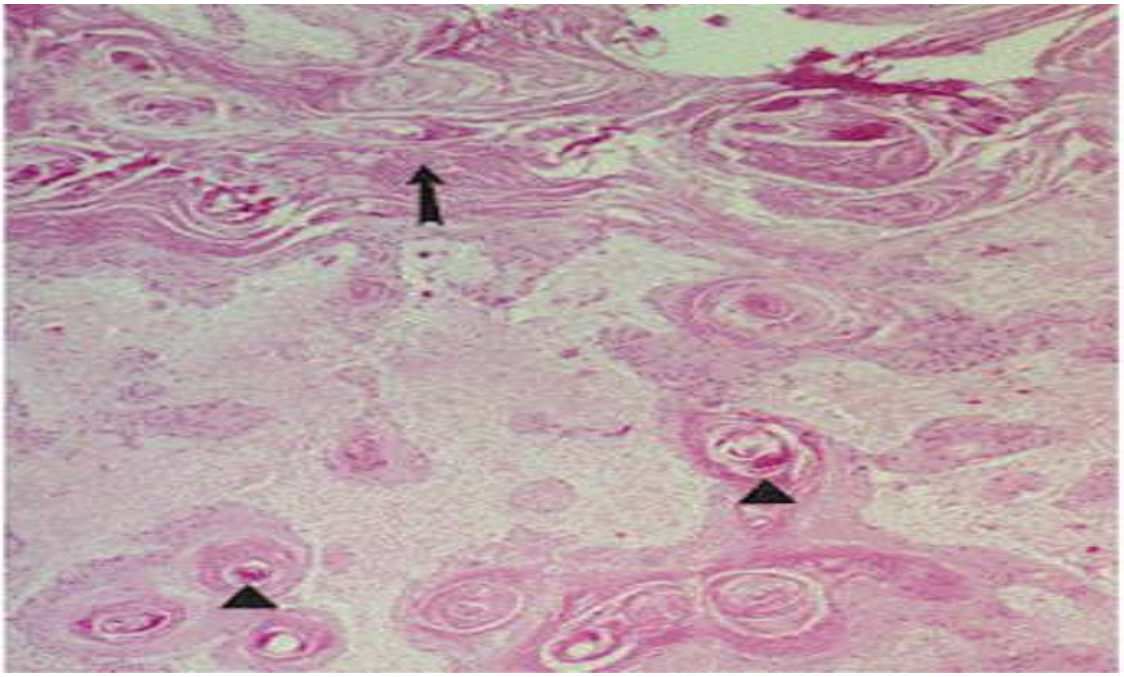


Figure-4: Squamous cell carcinoma of ear canal that mimicked an inflammatory aural polyp was treated as such for months before a biopsy was made. Unfortunately, this diagnostic error is not unusual. Heavy keratinization is seen on the surface (arrow) and there are keratin pearls (triangles) in the center of the deeper nests of invasive carcinoma[22].

CLINICAL ASPECTS:

Most patients with aural polyps previously had chronic suppurative otitis media characterized by copious ear discharges; however, aural polyps tend to exacerbate the symptoms with increasing discomfort from earache and fullness in the ear [23] prompting patients' presentation at the hospital. There are polyps that originate from the skin of the ear canal, particularly the bony portion of the canal, in addition to those that originate from the middle ear. They are caused by trauma and a superimposed infection, and they are red and pus-filled. Since both can fill the meatus and mask the precise location of origin, it could be challenging to differentiate between polyps originating from the middle ear and those from the external ear. The course of treatment involves removing the polyp, or as much of it as is safe to do so, and then administering antibiotics. Mastoidectomy may be required for middle ear polyps with mastoid disease, particularly cholesteatoma[22].

Unusual growths in the external auditory canal, known as aural polyps, are frequently brought on by persistent infections or inflammation. Accurate diagnosis and efficient management depend on an understanding of the relationship between clinical presentations and pathology findings, especially in rural tertiary care settings where resources may be scarce.

Correlation Between Clinical and Histopathological Findings

Aural polyps' clinical appearance and histopathology have been the subject of numerous research, although few have specifically looked at how the two relate to one another. Still unknown is the connection between the underlying histology of auditory polyps and their clinical presentation, such as size, shape, and location. According to a study by Sadeghi et al.[24] smaller polyps were frequently linked to less severe histological alterations, but larger polyps tended to have a more noticeable inflammatory infiltration. Additionally, chronicity in clinical presentation was frequently linked to the presence of more severe fibrosis in the histological investigation.

Furthermore, the histo-pathologically identified kind of inflammation may have an impact on the disease's clinical progression. While polyps with chronic inflammation and fibrosis may cause more subtle symptoms, like persistent hearing loss, polyps with a preponderance of neutrophils and plasma cells, for instance, tend to be more acute, presenting with more pronounced symptoms like pain and discharge[25].

Recent Advances and Gaps in the Literature

Despite the insights gained from earlier studies, there is still a lack of comprehensive research specifically addressing the prospective correlation between clinical and histopathological features of aural polyps. Most studies have been cross-sectional or retrospective, limiting their

ability to establish cause-and-effect relationships. Furthermore, many studies focus only on specific subsets of patients, such as those with chronic otitis media or allergic rhinitis, which may not be fully representative of the general population.

Recent advances in diagnostic imaging, such as high-definition otoscopy and advanced imaging modalities like magnetic resonance imaging (MRI), have the potential to provide more detailed and accurate clinical assessments of aural polyps. However, integrating these imaging findings with histopathological data to create a more robust clinical-histopathological correlation remains an area requiring further investigation. By employing a prospective observational design, we seek to examine whether specific clinical features such as the size, location, and appearance of the polyps can predict particular histopathological features, including the type of inflammatory cells, fibrosis, and presence of epithelial changes. The results of this study could enhance our understanding of the disease's clinical course and help optimize management strategies for patients suffering from this condition.

ANATOMY OF EAR

External Ear:

It is made up of the external auditory meatus and the auricle. The ear has a distinctive shape and is used to receive sound waves by collecting air vibrations. It is made up of a double layer of skin covering a thin plate of elastic cartilage. Extrinsic muscles that are supplied by the facial nerve are inserted into it. The great auricular (from the cervical plexus) and auriculotemporal (from the mandibular) nerves are responsible for carrying sensation.

From the auricle to the tympanic membrane, sound waves are collected and conducted by the external auditory canal, a 2.5 cm curved S-shaped tube. It is composed of two thirds bone and one third elastic cartilage. It has skin on the inside and hairs, sebaceous glands, and ceruminous glands on the outside.

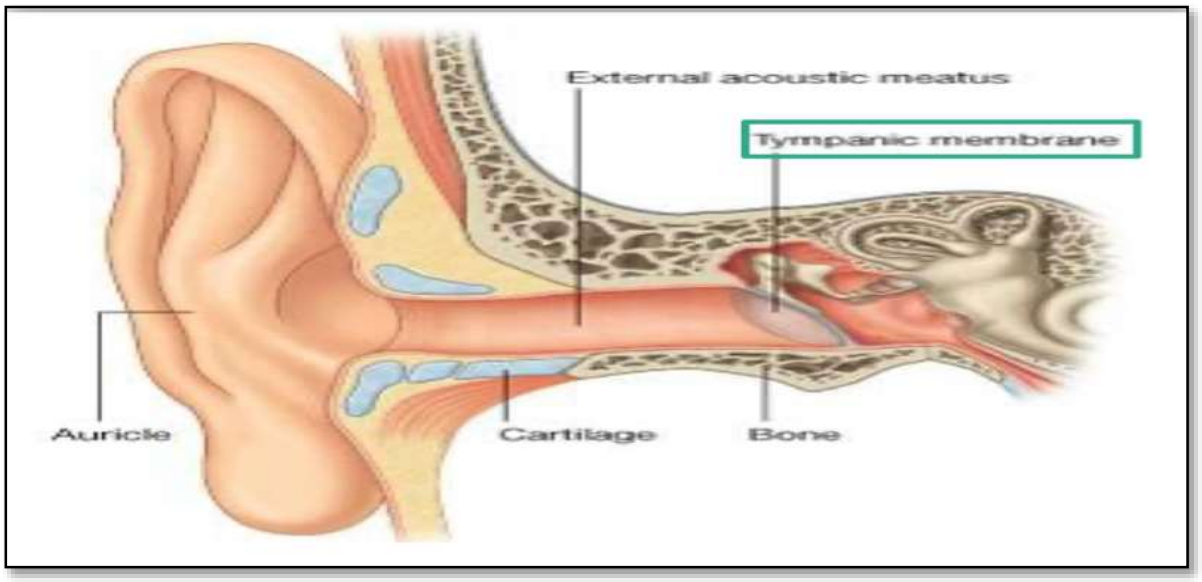


Figure-5: Anatomy Of Ear

Middle Ear (Tympanic Cavity):

The middle ear is a mucous membrane-lined, air-filled, oblique, slit-like cavity located in the petrous temporal bone. It houses the ear bones, or auditory ossicles, which send vibrations from the tympanic membrane (eardrum) to the internal ear.

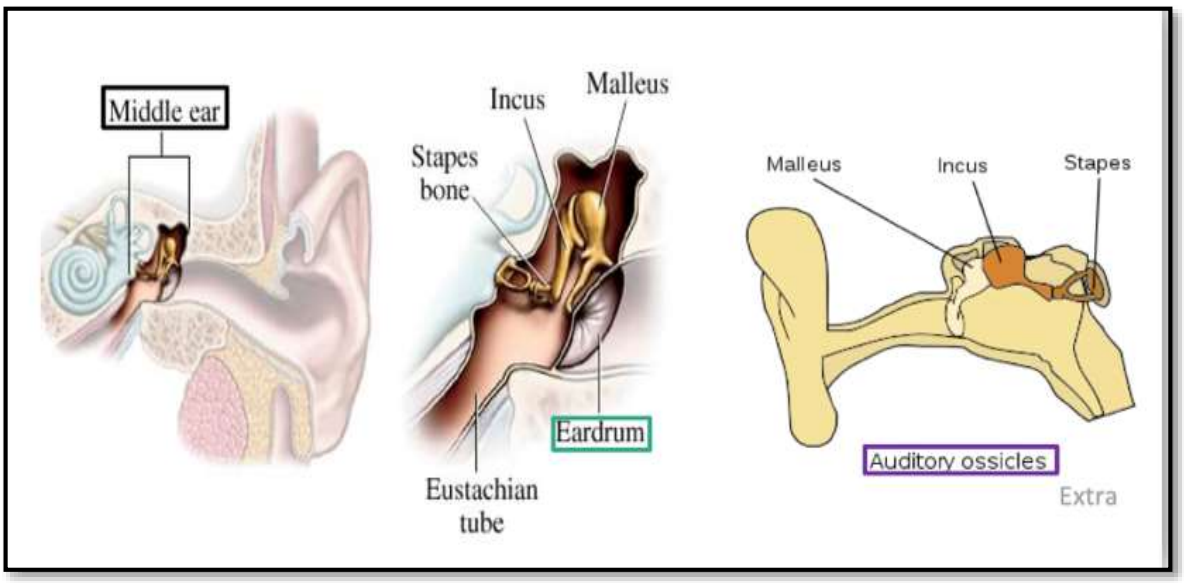


Figure-6: Anatomy of middle ear

Through the eustachian tube, which runs from the anterior wall downward, forward, and medially to the nasopharynx, the middle ear and the nasopharynx connect anteriorly. The canal's anterior two thirds are cartilaginous, whereas the posterior one third is bony. Its purpose is to balance the pressure on the ear drum's two sides.

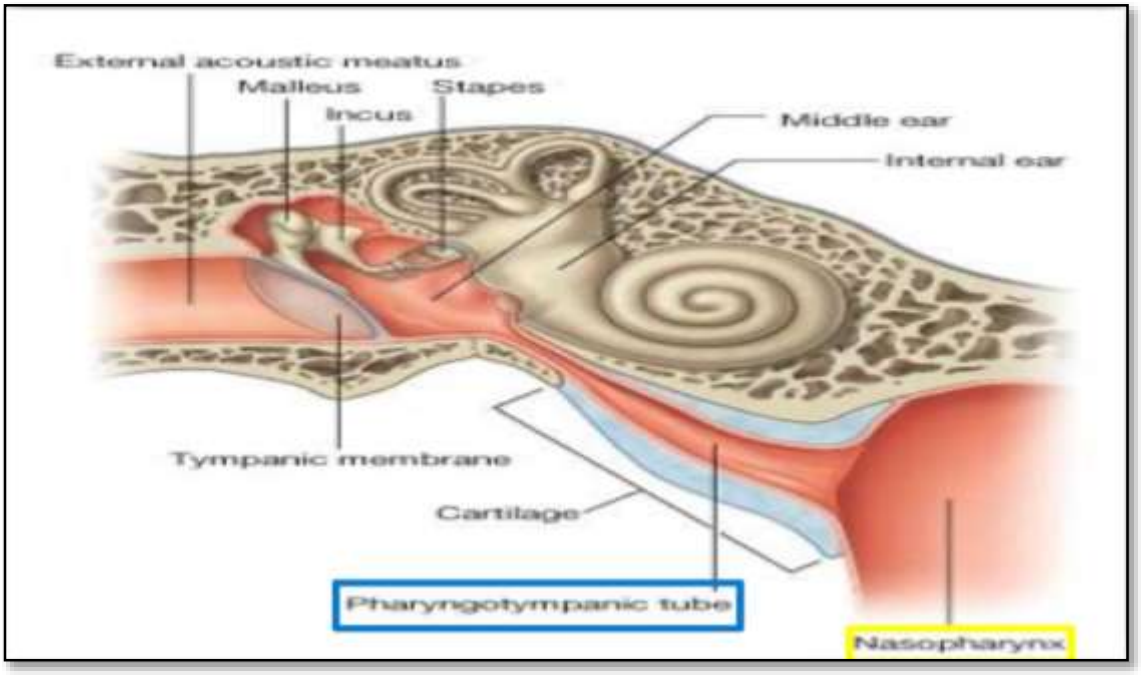


Figure-7: Middle ear tympanic cavity

The anterior, posterior, lateral, medial, and roof walls make up the middle ear.

Roof & Floor:

The tegmen tympani, a narrow plate of bone that is a component of the petrous temporal bone, forms the Roof. It divides the brain's temporal lobe from the tympanic cavity. A thin plate of bone called the Floor divides the internal jugular vein bulb from the middle ear.

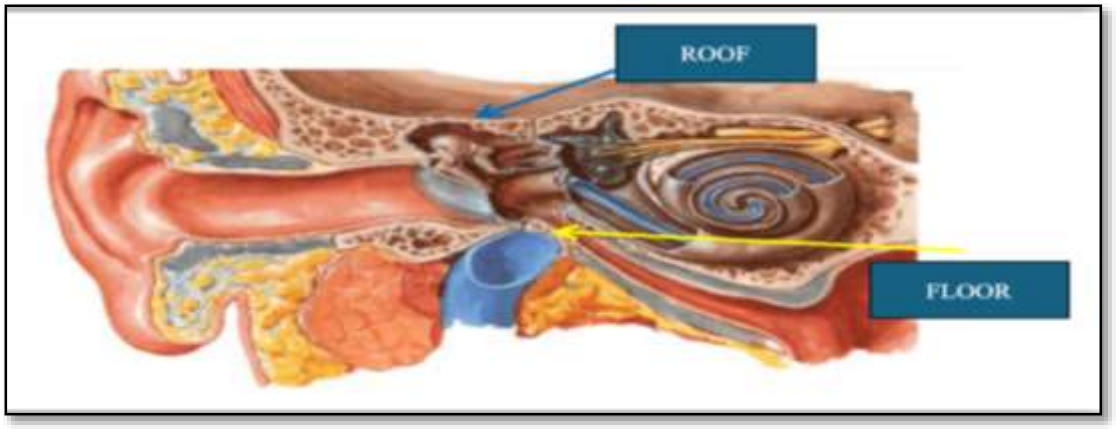


Figure-8: Roof and floor of middle ear

Anterior Wall Middle Ear:

A thin bone plate that divides the internal carotid artery from the tympanic cavity forms the anterior wall below. The upper portion of the front wall has two channels. The tensor tympani muscle's canal is the smaller, higher one. The auditory tube is for the larger, lower one.

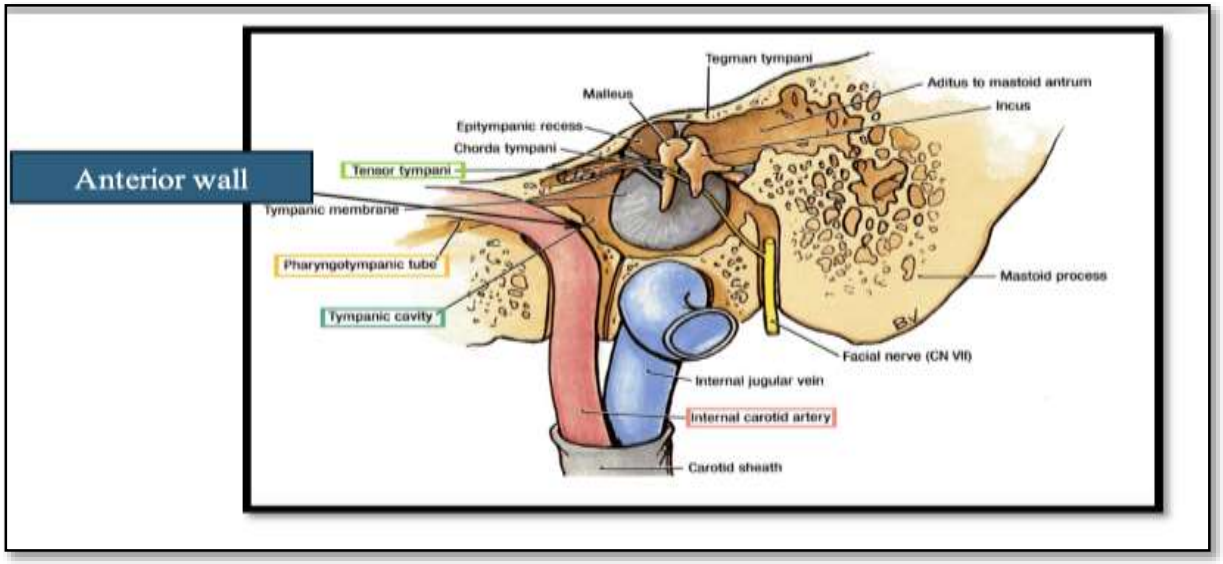


Figure-9: Anterior wall of middle ear

Posterior Wall Middle Ear

The pyramid, a small, hollow, conical projection in the lower part of the posterior wall, contains the stapedius muscle and its tendon. In the upper part of the wall is a large, irregular opening called the auditus to the mastoid antrum, a cavity behind the middle ear that contains air cells within the mastoid process.

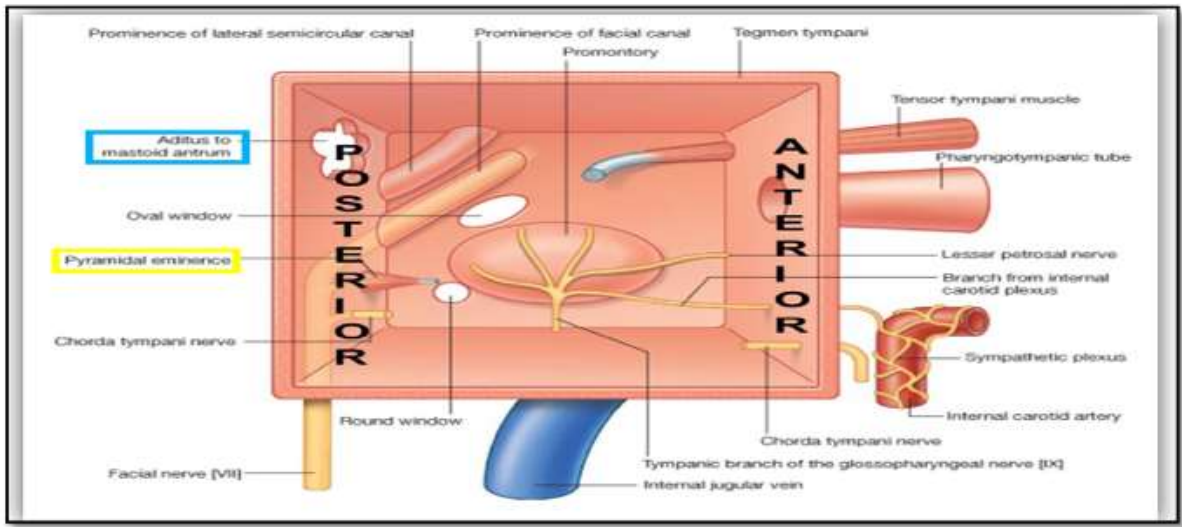


Figure-10: Posterior wall middle ear

Medial Wall Middle Ear

The underlying first turn of the cochlea causes a rounded projection (promontory) in the greater portion of the medial wall. The base of the stapes closes the Oval window (Fenestra Vestibuli), which is located above and behind the promontory. The circular window (Fenestra Cochleae) is located behind and beneath the promontory. which the secondary tympanic membrane closes. It is made up of the inner ear's lateral wall.

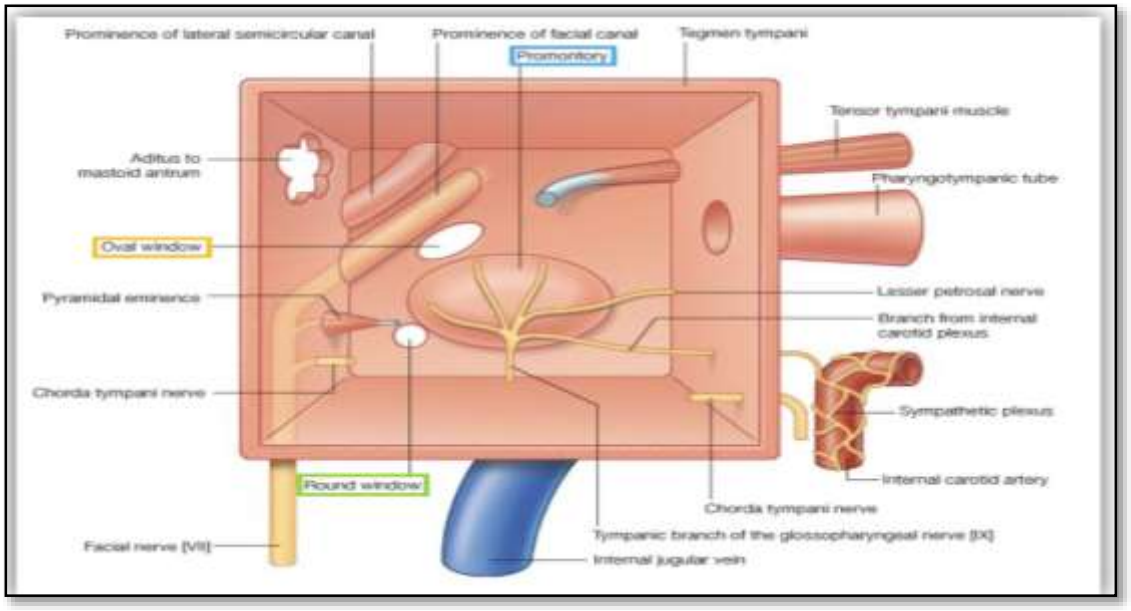


Figure-11: Medial wall of middle ear

Lateral Wall Middle Ear

The tympanic membrane makes up the majority of the lateral wall. The membrane is positioned laterally, front, and downward in an oblique manner. It has a very high pain threshold. The ear drum's nerve supply outer surface by the auricular branch of vagus and the auriculotemporal nerve. inner surface by the glossopharyngeal nerve's tympanic branch.

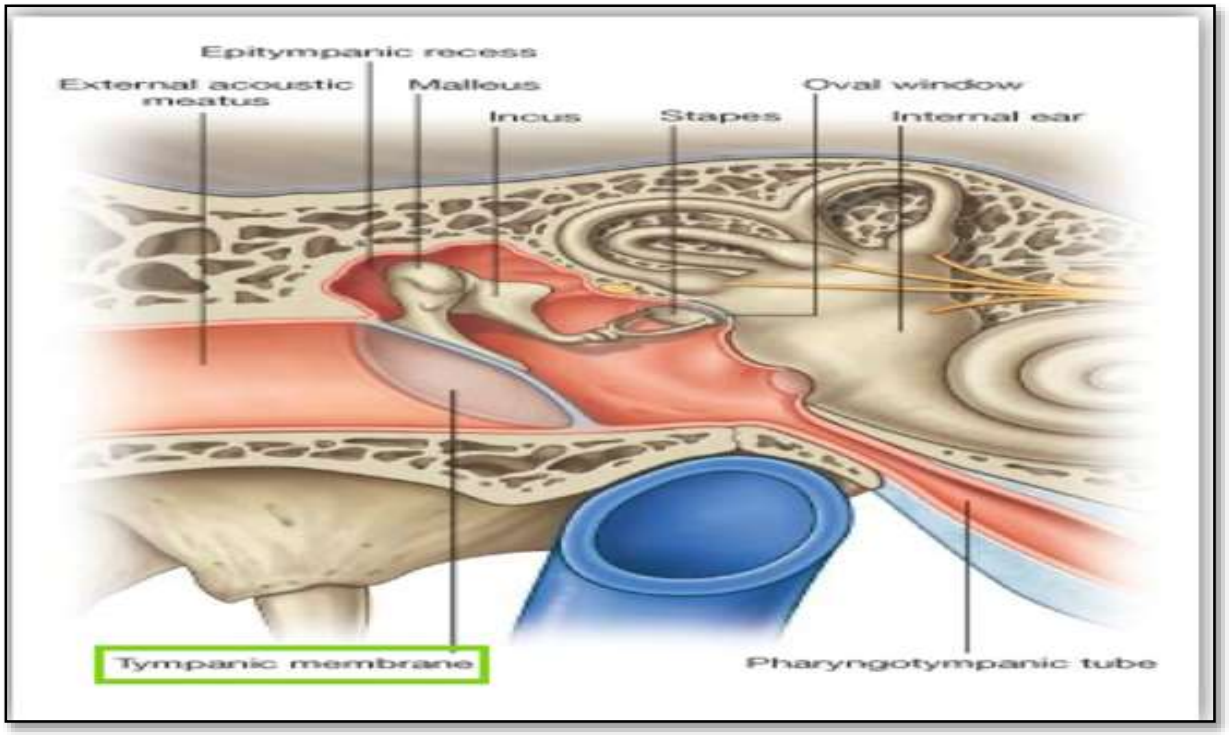


Figure-12: Lateral wall middle ear

It is normally concave laterally, with the tip of the malleus handle creating a tiny dip known as "the Umbo" at the depth of its concavity. The concavity creates a "Cone of Light" that emanates from the umbo anteriorly and inferiorly when the membrane is illuminated with an otoscope. The Pars Tensa is the term for the majority of the membrane that is tense. The Pars Flaccida is a little, loose, triangular section on its upper portion.

Auditory Ossicles Middle Ear :

The Malleus, Incus, and Stapes are the auditory ossicles.

They carry sound waves from the tympanic membrane to the internal ear's perilymph. They are articulated by synovial joints and coated by mucous membranes.

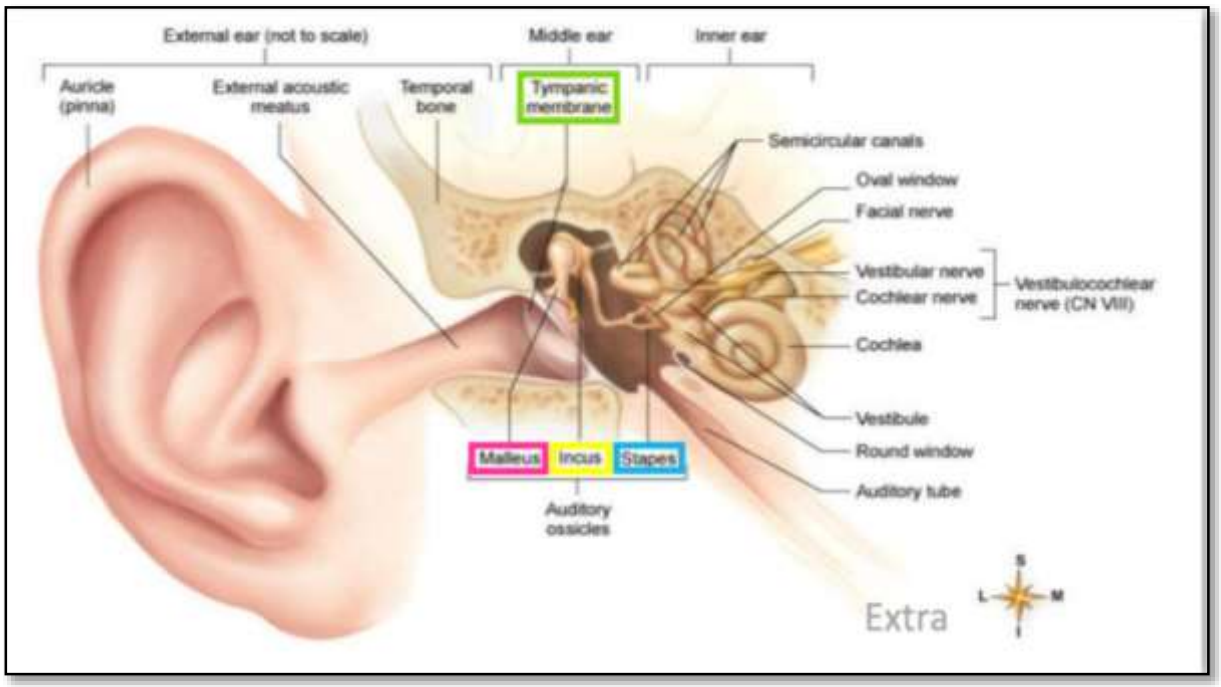


Figure-13: Auditory ossicles middle ear

The Labyrinth or Internal Ear:

The labyrinth is located medial to the middle ear in the petrous portion of the temporal bone. It is made up of both membranous and bone labyrinths.

Bony labyrinth: An arrangement of endosteum-lined bony chambers. The membrane labyrinth is floating in a transparent fluid called perilymph. The vestibule, semicircular canals, and cochlea make up the bone labyrinth.

The point on the tympanic cavity's medial wall is the result of the cochlea's initial turn. The cochlear duct, a component of the membranous labyrinth, is located there.

Vestibule:

It is located in the middle of the bony labyrinth. It includes the saccule and utricle, which are components of the membranous labyrinth.

The base of the stapes closes the fenestra vestibuli (oval window) while the secondary tympanic membrane closes the fenestra cochleae (round window) in the vestibule's lateral wall.

Canals that are semicircular

The semicircular canals are superior (anterior), posterior, and lateral. The ampulla is a bulge at one end of each canal. Five orifices, including one shared by two of the canals, allow the canals to open into the vestibule. The semicircular ducts are lodged inside the canals.

The endolymph-filled membrane labyrinth is made up of a number of membranous sacs and ducts inside the bone labyrinth. Four ducts and two sacs make up the membranous labyrinth, and they can freely communicate with one another:

- •Sacs: Utricle & Saccule lodged in the bony vestibule.
- •Ducts: Three semicircular ducts lie within the bony semicircular canals. (anterior, posterior, lateral)
- • Cochlear Duct: lies within the bony cochlea.

Specialized sensory receptors on the walls of the saccule and utricle are sensitive to the head's orientation in relation to acceleration forces like gravity. The maintenance of equilibrium is the responsibility of the semicircular ducts, saccule, and utricle.

The Spiral organ of Corti, which houses the sensory receptors for hearing, is formed by the highly specialized epithelium on the cochlear duct floor.

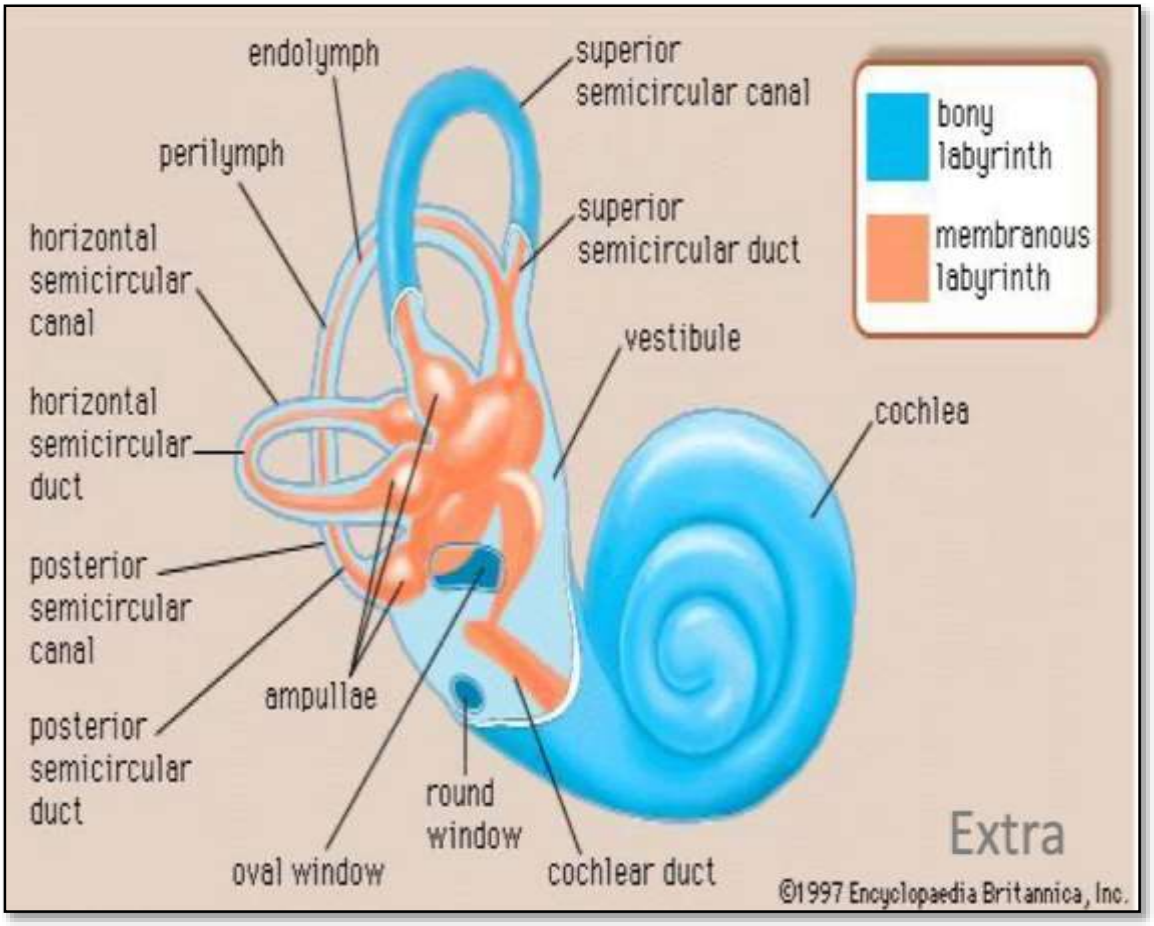


Figure-14: Anatomy of inner ear

MATERIALS AND METHODS

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SOURCE OF DATA:

This Prospective observational study was conducted in patients with aural polyp in chronic conditions of the ear, Department of Otorhinolaryngology, R.L. Jalappa Hospital and Research Centre attached to Sri Devaraj Urs Medical College, Tamaka, Kolar between April 2023 to September 2024.

STUDY DESIGN: Prospective Observational Study

STUDY PERIOD: MAY 2023 – OCTOBER 2024

INCLUSION CRITERA:

1. Patients presenting with polyps in external auditory canal and middle ear.
2. Patients presenting with tumours extending into the external auditory canal

EXCLUSION CRITERIA:

1. Patients with aural polyps with deformity/contracture present over aural region.
2. Patients with aural polyps with tegmen defects with herniation on imaging.

METHOD OF COLLECTION OF DATA

METHODOLOGY

The present study was carried out in Department of ENT, RL JALAPPA HOSPITAL, TAMAKA KOLAR. All patients, from April 2023 to September 2025 diagnosed with aural polyp in chronic conditions of the ear were considered.

After obtaining approval from IEC(Institutional Ethics Committee) patients were recruited after their written informed consent. All Patients undergoing tympano-mastoid surgeries or external auditory canal surgeries for aural polypectomy after fulfilling the inclusion and

exclusion criteria were included in this study. A written informed consent was taken from the patients undergoing surgery under general anesthesia. Patient were explained about the procedure followed by intervention via surgery. Patient was assessed on post op day 21, 60 and 90.

A thorough history was taken to determine the onset, duration and cause of the hearing loss and/or discharge. A detailed otological examination was done including otoendoscopy and microscopic examination. Along with this nose and throat examination also was done in detail. Following which investigations was done such as complete blood picture, renal function tests, serum electrolytes, bleeding time, clotting time, coagulation profile, blood grouping, Rh typing, ECG, chest X-ray, HRCT and pure tone audiometry was done.

Patient was taken up for either tympano-mastoid surgeries or external auditory canal surgeries for aural polypectomy. The middle ear cavity inspected for origin of the aural polyp and the polyp was excised and sent for histopathological examination. The findings of all cases were evaluated by the same surgical and pathological team. The sections were examined under high power magnification. The findings seen in pre-operative, clinical and otoscopic examinations, correlated with the Intra op findings and the histopathological examination for confirmation of the diagnosis of the aural polyp.

SAMPLE SIZE:

Assuming alpha error of 5% (95% confidence limit), relative precision of 20% (d=13.4), the minimum required sample size to estimate the proportion of patients with cholesteatoma as the cause for middle ear polyp, was calculated to be **47 subjects (patients with middle ear polyp)[1].**

The sample size was derived from the following formula:

$$n = \frac{z^2_{1-\frac{\alpha}{2}} p(1-p)}{d^2}$$

where,

Z is the critical value for 95% Confidence Interval

d is the absolute precision

P is the expected proportion of cause for middle ear polyp

Hence a total of **47 subjects** with middle ear polyp were included in the study.

STATISTICAL ANALYSIS:

Data will be entered using Microsoft Excel and analysed using the Statistical Package for Social Science (SPSS) standard version 20. All continuous variables will be summarised using Mean (SD) or Median (IQR) depending on the normality of the distribution. Categorical variables will be summarised using proportions. The cause of middle ear polyp will be summarised using proportion with 95% Confidence interval. Comparison of continuous variables such as age etc across different causes of polyp will be done using Independent samples t-test for normally distributed variables. For continuous variables not following normal distribution, Mann Whitney U test will be performed. Comparison of categorical variables across different causes of polyp will be done using Chi square test. P-value of <0.05 will be considered statistically significant.

Does the study require any investigation or intervention to be conducted?

The patients will undergo investigations and interventions which includes General Anesthesia work up were done prior to surgery like Complete blood picture, absolute eosinophil counts, peripheral smear, renal function test, Bleeding time, Clotting time, Serology, Blood grouping, ECG, Chest Xray, coagulation profile, HRCT-temporal bone, Pure tone audiometry.

RESULTS

RESULTS

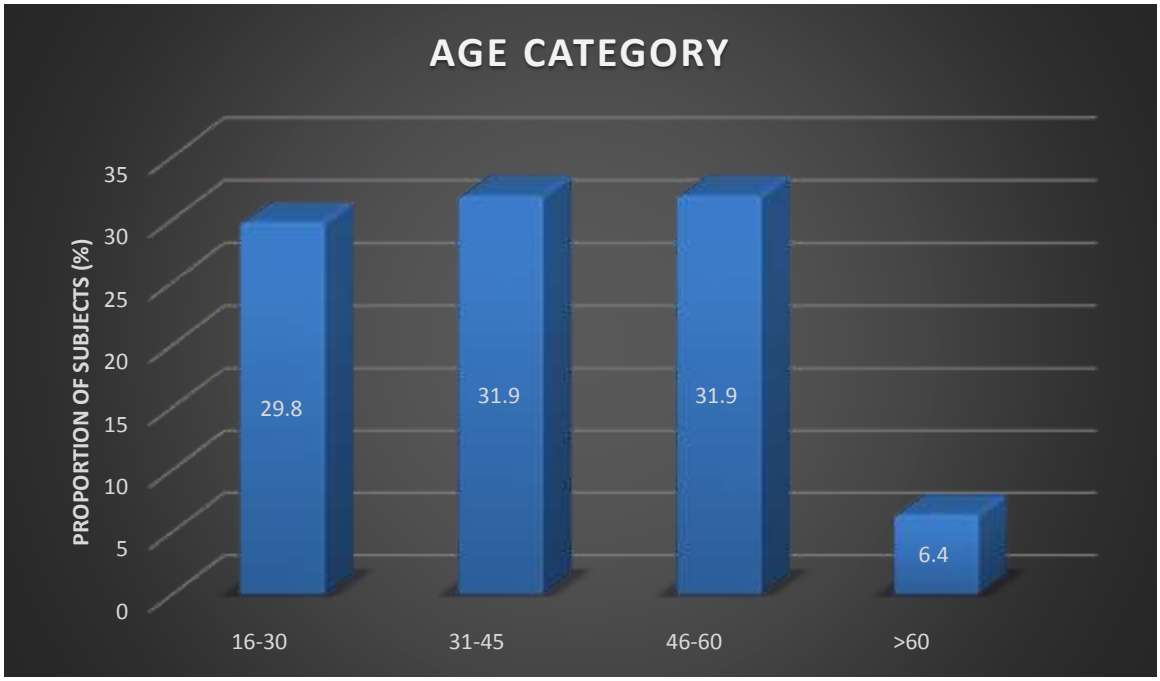
A total number of 47 patients presented with polyps in external auditory canal and middle ear were recruited from Jan 2022 to June 2025 for this study. The patients were selected according to the inclusion and exclusion criteria as mentioned earlier. In the present study, the various characteristics of our sample are shown in the following pages.

The age distribution of the study population was balanced across different age groups. The largest proportion of patients (31.9%) was in the 31-45 years and 46-60 years categories, each comprising 15 patients. The age group 16-30 years consisted of 14 patients, accounting for 29.8% of the total cases. A smaller proportion of patients, 6.4%, were older than 60 years, with only 3 patients in the >60 age category. **Overall**, the study population was predominantly composed of adults aged between 16 and 60 years with the fact that most of your patients were in the middle-aged adult range (31-60 years). The table- 1 and graph-1 shows that distribution of cases according to age category.

Table-1: Distribution of cases according to age category

Age category in years	Number of patients	Percent
16-30	14	29.8
31-45	15	31.9
46-60	15	31.9
>60	3	6.4
Total	47	100.0

Graph-1: Distribution of cases according to age category

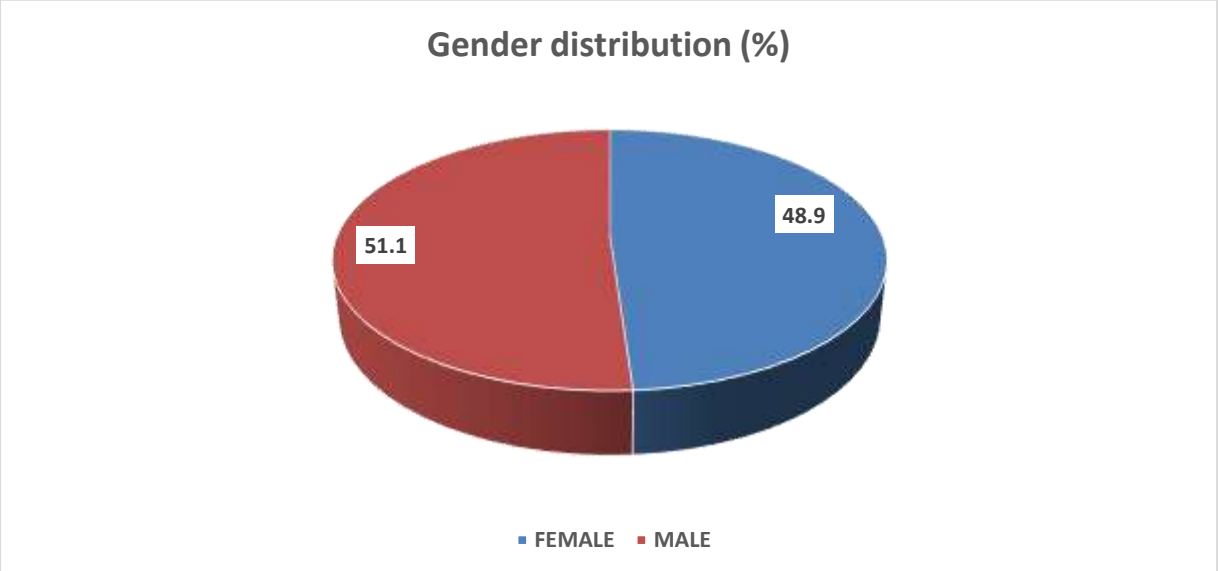


The gender distribution of the study population was nearly equal, with 51.1% (24 patients) being male and 48.9% (23 patients) being female. The slight male predominance in the sample suggests a similar frequency of aural polyps in both genders, with a very minimal difference between the sexes. The table- 2 and graph-2 shows that distribution of cases according to Gender.

Table-2: Distribution of cases according to Gender

Sex	Number of patients	Percent
Female	23	48.9
Male	24	51.1
Total	47	100.0

Graph-2: Distribution of cases according to Gender

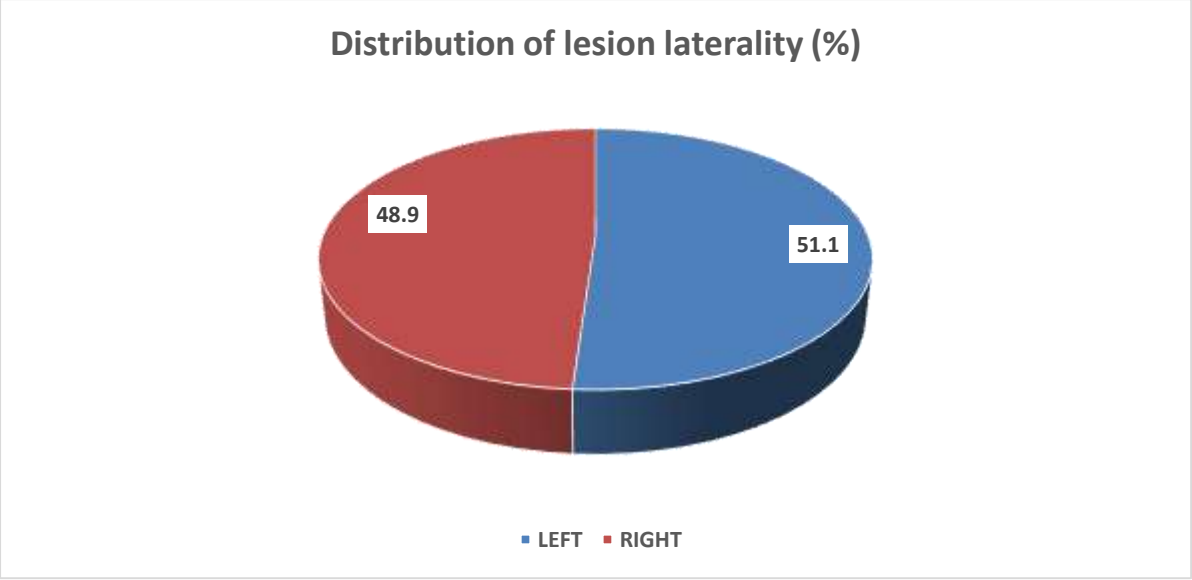


Most cases (51.1%) had lesions located on the **left** side, with 24 patients presenting with left-sided aural polyps. A slightly smaller proportion (48.9%) had **right-sided** lesions, with 23 patients presenting with right-sided aural polyps. **Overall**, the distribution of lesions between the left and right ears was nearly equal, with a very minimal difference in laterality. The table-3 and graph-3 Distribution of cases according to Lesion Laterality.

Table-3: Distribution of cases according to Lesion Laterality

Lesion Laterality	Number of patients	Percent
Left	24	51.1
Right	23	48.9
Total	47	100.0

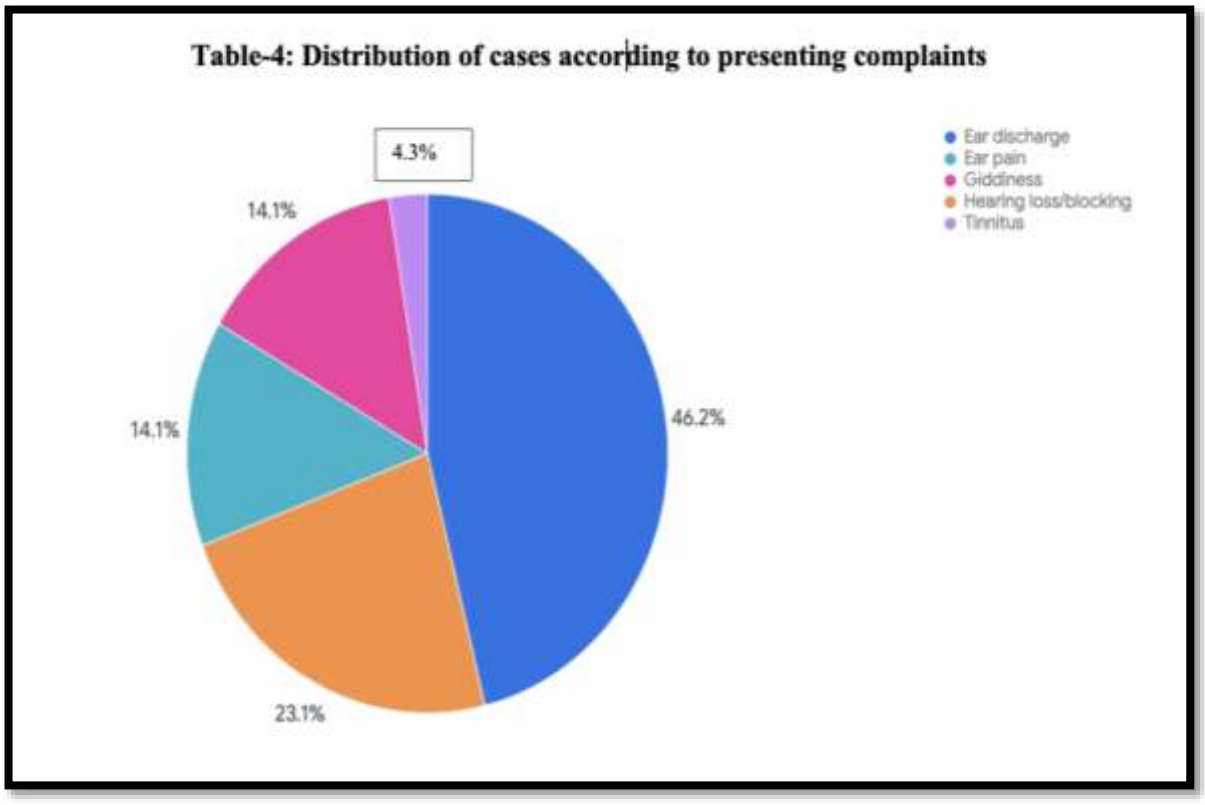
Graph-3: Distribution of cases according to Lesion Laterality



The most common presenting complaint among patients with aural polyps was ear discharge (76.6%), followed by hearing loss/blocking sensation (38.3%). Eleven patients (23.4%) reported ear pain, while 36 patients (76.6%) did not experience ear pain. 11 patients (23.4%) experienced giddiness, while 36 patients (76.6%) did not report this symptom. Most patients (76.6%) presented with ear discharge, with 36 patients reporting this complaint, while only 11 patients (23.4%) did not. 18 patients (38.3%) reported hearing loss or a sensation of ear blockage, while 29 patients (61.7%) did not experience this symptom. Tinnitus was reported by only 2 patients (4.3%), with the majority (45 patients, 95.7%) not experiencing any tinnitus. The table-4 and graph-4 shows the distribution of cases according to presenting complaints.

Table-4: Distribution of cases according to presenting complaints

Presenting complaints	Number of patients	Percent (%)
Ear pain	11	23.4
Giddiness	11	23.4
Ear discharge	36	76.6
Hearing loss/blocking sensation	18	38.3
Tinnitus	2	4.3
Total	47	100

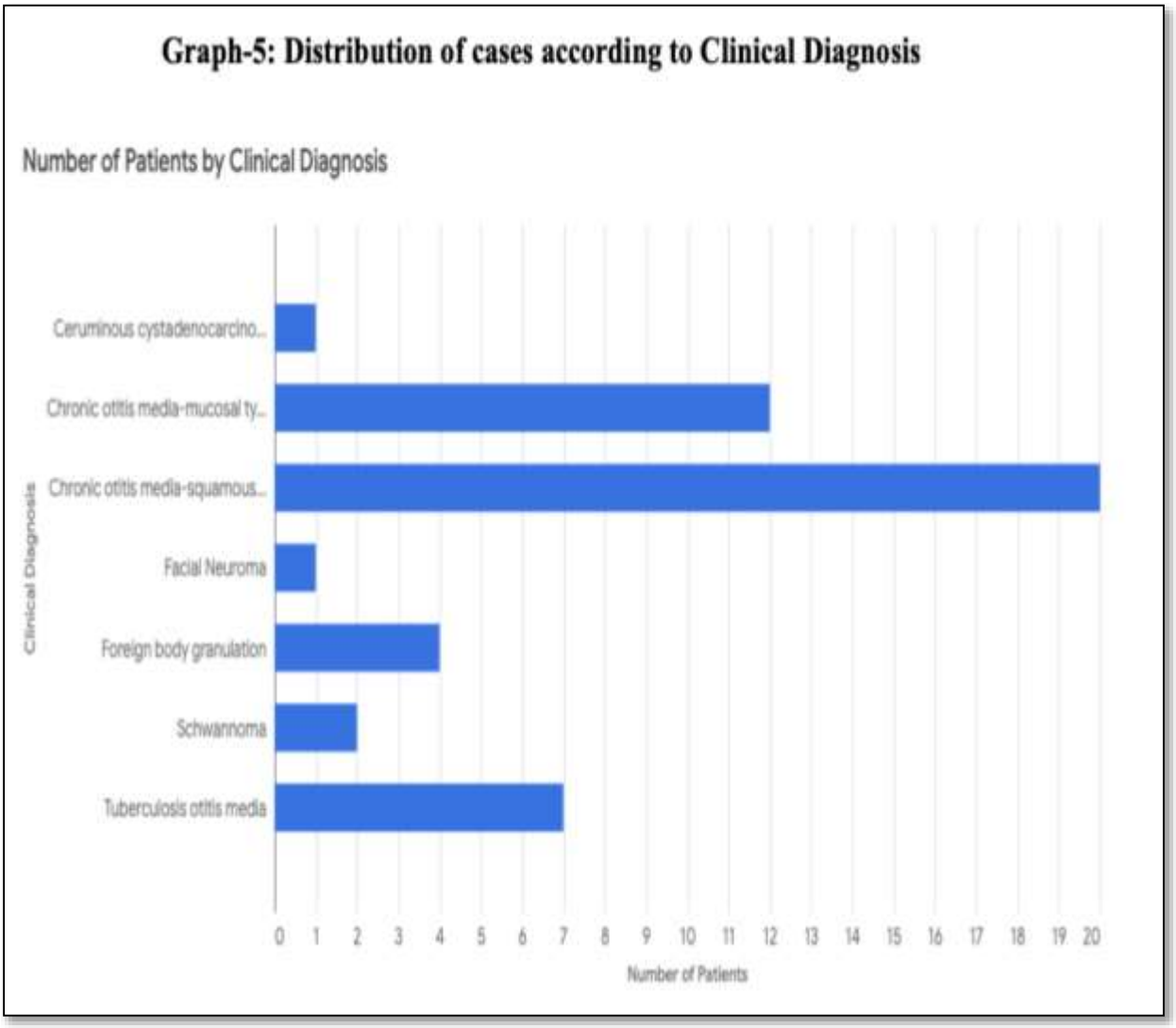


Chronic otitis media-squamous type was the most frequently encountered clinical diagnosis in your study, affecting nearly half of the patients. The most common clinical diagnosis was **Chronic otitis media-squamous type** , observed in 20 patients (42.6%). The second most common diagnosis was **Chronic otitis media-mucosal type** , seen in 6 patients (12.8%). **Facial neuroma** was the least common diagnosis, occurring in only 1 patient (2.1%). The table-5 and graph-5 shows distribution of cases according to clinical diagnosis.

Table-5: Distribution of cases according to Clinical Diagnosis

Clinical Diagnosis	Number of patients	Percent
Chronic otitis media-squamous type	20	42.6
Chronic otitis media-mucosal type	12	25.6
Tuberculosis otitis media	7	14.9
Foreign body granulation	4	8.5
Schwannoma	2	4.3
Facial Neuroma	1	2.1
Ceruminous cystadenocarcinoma	1	2.1
Total	47	100

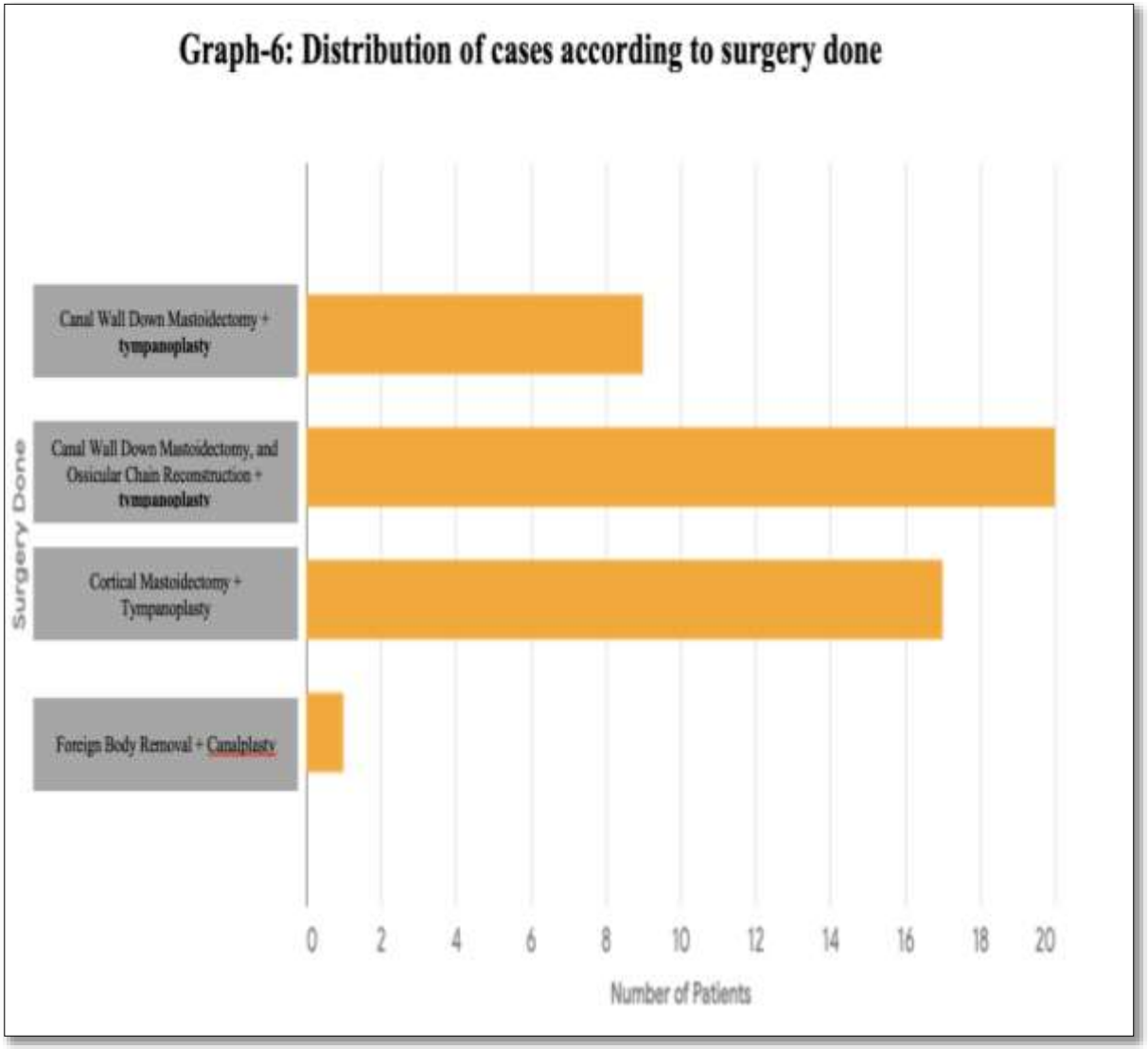
Graph-5: Distribution of cases according to Clinical Diagnosis



The majority of patients underwent **mastoidectomy** procedures, with the combination of **canal wall down mastoidectomy, tympanoplasty, and ossicular chain reconstruction** being the most common surgery performed. A significant proportion of patients also had **cortical mastoidectomy and tympanoplasty**, indicating a focus on addressing both middle ear and mastoid cavity issues. The most common surgery performed was **Canal Wall Down Mastoidectomy, tympanoplasty, and Ossicular Chain Reconstruction** which was done in 20 patients (42.6%). **Cortical Mastoidectomy + Tympanoplasty** was the second most frequent procedure, performed on 17 patients (36.2%). **Canal Wall Down Mastoidectomy + tympanoplasty** was performed in 9 patients (19.1%). The least common procedure was **Foreign Body Removal + Canalplasty**, which was done in only 1 patient (2.1%). One patient with fascial neuroma underwent greater auricular nerve grafting. The table-6 and graph-6 shows distribution of cases according to surgery done in the study population.

Table-6: Distribution of cases according to type of surgery done

Type of Surgery Done	Number of patients	Percent
Canal Wall Down Mastoidectomy + tympanoplasty	9	19.1
Canal Wall Down Mastoidectomy, and Ossicular Chain Reconstruction + tympanoplasty	20	42.6
Cortical Mastoidectomy + Tympanoplasty	17	36.2
Foreign Body Removal + Canalplasty	1	2.1
Total	47	100.0


Graph-6: Distribution of cases according to surgery done
Surgery Done
Canal Wall Down Mastoidectomy + tympanoplasty
Canal Wall Down Mastoidectomy, and Ossicular Chain Reconstruction + tympanoplasty
Cortical Mastoidectomy + Tympanoplasty
Foreign Body Removal + Canalplasty
0
2
4
6
8
10
12
14
16
18
20
Number of Patients

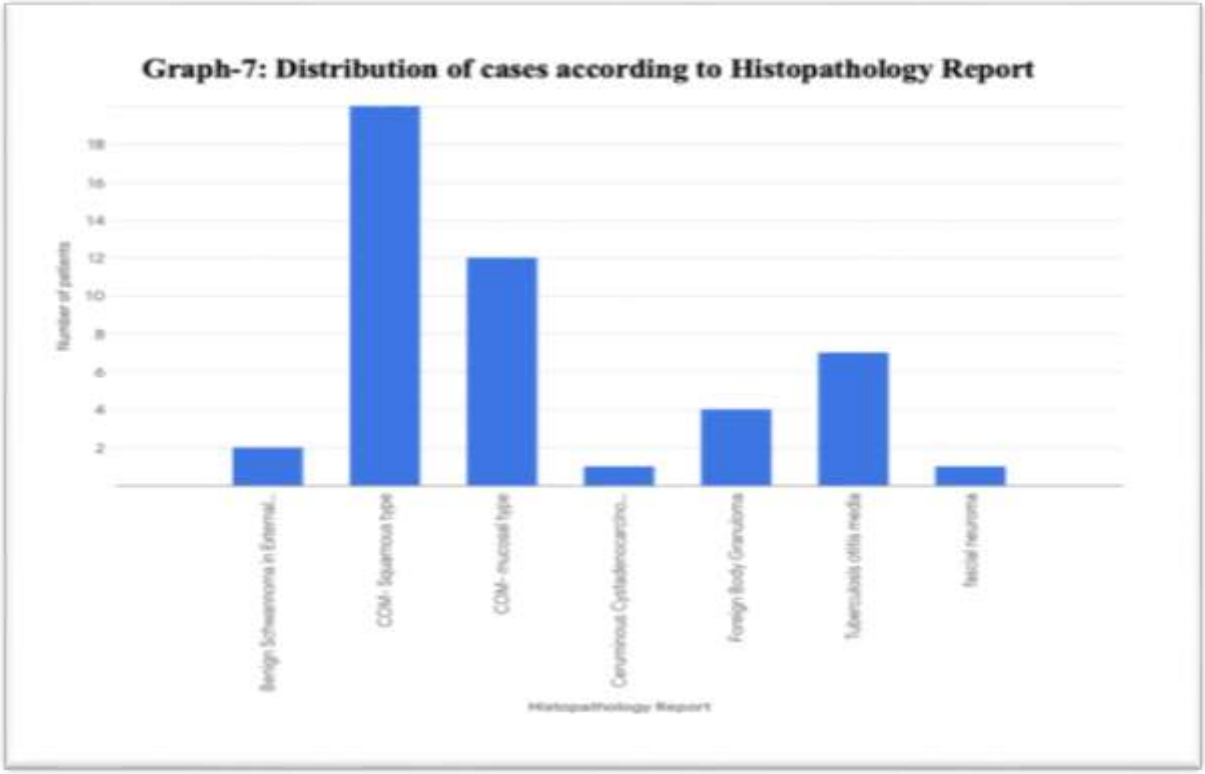
Aural polyps secondary to COM- Squamous type were the most frequently identified pathology, accounting for almost half of the cases. The most common histopathological finding was **Aural Polyp secondary to COM- Squamous type**, which was identified in 23 patients (48.9%). **COM- mucosal type** was the second most common, observed in 10 patients (21.3%). **Tuberculosis otitis media** was present in 7 patients (14.9%). Other rarer findings included **Foreign Body Granuloma** (4.3%, 4 patients), **Benign Schwannoma in External Auditory Canal** (4.2 %, 2 patient), **fascial neuroma** (2.1%, 1 patient), and **Ceruminous Cystadenocarcinoma** (2.1%, 1 patient). The table-7 and graph-7 shows Distribution of cases according to Histopathology findings.

The diversity of histopathological findings reflects the variety of pathologies that can lead to the development of aural polyps, highlighting the importance of histopathological evaluation in diagnosing and managing these conditions.

Table-7: Distribution of cases according to Histopathology Report

Histopathology Report	Number of patients	Percent
COM- Squamous type	20	42.6
COM- mucosal type	12	25.6
Benign Schwannoma in External Auditory Canal	2	4.2
fascial neuroma	1	2.1
Ceruminous Cystadenocarcinoma	1	2.1
Foreign Body Granuloma	4	8.5
Tuberculosis otitis media	7	14.9
Total	47	100.0

Graph-7: Distribution of cases according to Histopathology Report



The **average PTA (Pure Tone Audiometry) score** of the study participants was **58.36** with a **standard deviation (SD) of 16.350**. This suggests that, on an average, patient's in the study had a moderate degree of hearing loss, as PTA scores typically reflect the severity of hearing impairment. The table-8 shows average distribution of cases according to PTA Findings.

Table-8 : Average distribution of cases according to PTA Findings

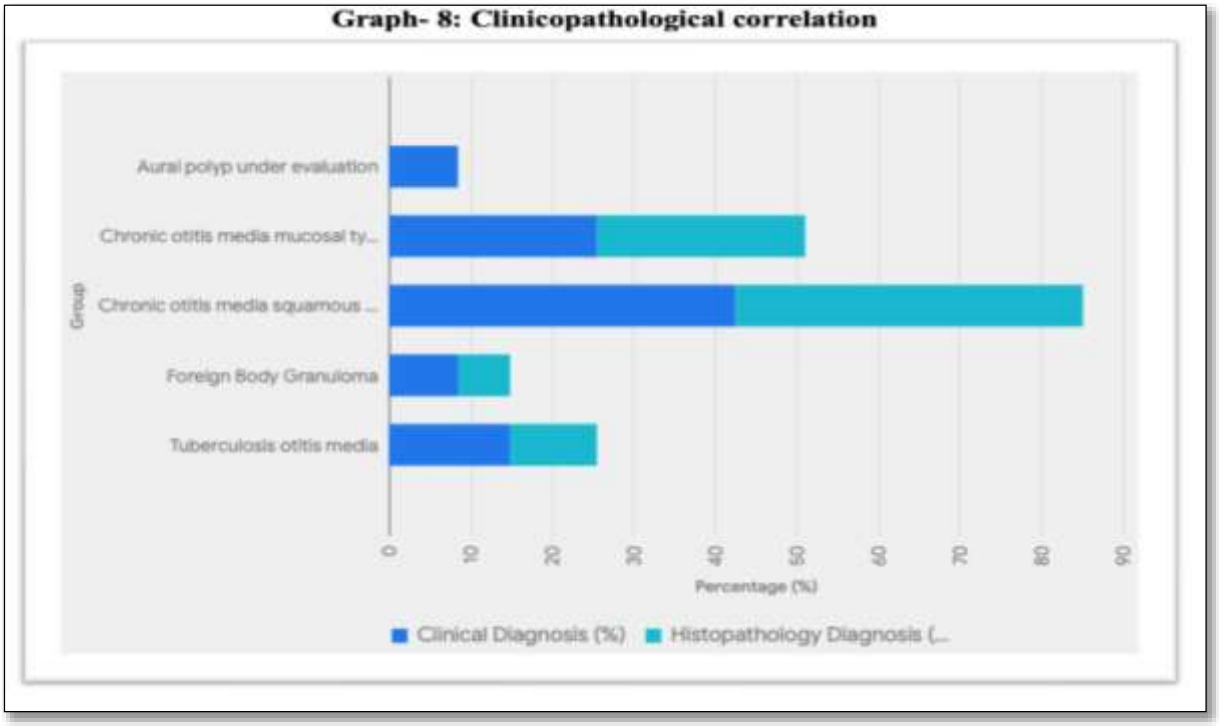
Parameter	Average (SD)
PTA Findings	58.36 16.350

Chronic otitis media squamous type and **Chronic otitis media mucosal type** showed perfect alignment between clinical diagnosis and histopathological findings (100% match), suggesting accurate and reliable clinical assessments for these conditions. The study indicates that, while the clinical diagnosis is highly reliable for some conditions like cholesteatoma and fibrous polyps. This suggests that further refinement in both clinical examination and histopathological assessment, especially for more challenging cases like granulomatous polyps, foreign body granulomas, and aural masses, may be needed. The table-9 and graph-8 shows **clinicopathological correlation details.**

Table-9 : Clinicopathological correlation

Clinicopathological correlation	GROUP		Percentage (%)
	Clinical Diagnosis	Histopathology Diagnosis	
Chronic otitis media squamous type	20	20	100.0%
Chronic otitis media mucosal type	12	12	100.0%
Foreign Body Granuloma	4	3	75.0%
Tuberculosis otitis media	7	5	71.4%
Aural polyp under evaluation	4	0	0.0%
Total	47	40	85.1%

Graph- 8: Clinicopathological correlation



DISCUSSION

DISCUSSION

The present study aimed to assess the clinical and histopathological findings in patients with aural polyps, focusing on understanding the relationship between clinical presentation, otoscopic examination, and histopathological diagnosis. The study was conducted at R.L. Jalappa Hospital and Research Centre between April 2023 and September 2024, involving a total of 47 patients diagnosed with aural polyps.

The term "aural polyp" is seen as misleading. Given the high frequency of chronic suppurative otitis media and its typical clinical manifestations, such as foul-smelling ear discharge and hearing loss, individuals with sinister lesions may unintentionally receive the wrong diagnosis and treatment.

Usually seen in the external auditory canal, the aural polyp is an inflammatory tumor that can originate in the middle ear or the external auditory canal. Generally , it is due to proliferation of granulation tissue in response to chronic inflammatory process[16, 26]. Hawke and Keene [27] proposed potential mechanism involved in foreign-body granuloma that polyp formation in such circumstances represents a foreign-body granuloma reaction to trapped squamous epithelium around the ventilation tube rather than to the tube itself.

Aural polyps in adults may indicate the onset of cholesteatoma or other serious disease processes, but they also frequently indicate an irritative reaction to chronic otitis media[28,16]. Since a preoperative biopsy only reveals a peripheral portion of the underlying condition and may even cause difficulties in the case of vascular lesions, it is unable to provide an accurate diagnosis. As a result, a comprehensive radiological and ENT evaluation is required. The ideal radiological imaging method for comprehending the complexities and moving forward with the management is a high-resolution CT scan of the temporal bone. In a study DONE BY

Williams et al., 2 [16] revealed that temporal bone erosion to be associated with cholesteatoma in adult patients with aural polyps[16,6] .

Aural polyps are considered one of the most significant progressive lesions of the middle ear. It is most notable progressive lesions of middle ear. [29] They are benign growths that develop in the external auditory canal or middle ear. These are abnormal tissue growths that develop within the tympanic cavity and extend toward the external ear. This growth leads to symptoms such as otorrhea, otalgia, and hearing loss, often resulting from the perforation of the tympanic membrane. Aural polyps are recognized as a critical health concern due to their association with severe otitis media and the persistent pain, discomfort, and other symptoms like hearing impairment, dizziness, and chronic ear drainage [28 ,30,31].

Cholesteatomas can be benign, but they can cause injury to the area surrounding the polyps, such as the ossicles, aditus ad antrum, and mastoid. The inflammatory process produces lytic enzymes, attracts immunological factors, and recruits osteoclasts, leading to resorption of middle ear bony structures and potential spread to the face, neck, and brain. Therefore, in every situation where cholesteatoma is suspected, a thorough head and neck examination is required. Aural polyps can arise from middle ear neoplastic adenoma or tumour squamous carcinoma[32,33]. In rare situations, clinical and microscopic studies may reveal higher-grade malignancy and metastatic behaviour[34].

They are most commonly associated with chronic inflammatory conditions of the ear, such as chronic otitis media (COM), cholesteatoma, and other forms of middle ear pathology. Aural polyps can present with a variety of symptoms, including ear discharge, hearing loss, pain, and in some cases, dizziness or tinnitus. The most common presenting symptom in this cohort was ear discharge, reported in 76.6% of the cases, which is in line with literature suggesting that

aural polyps are frequently associated with chronic otitis media, where ear discharge is a hallmark symptom. Hearing loss/blocking sensation was the second most frequent complaint, reported in 38.3% of the patients, further corroborating findings that suggest aural polyps, especially when associated with cholesteatoma or chronic middle ear pathology, can significantly affect hearing[35].

Despite annual declines, approximately five million people worldwide suffer from cholesteatoma. In comparison to previous decades, the prevalence of cholesteatoma has decreased due to advancements in education that have raised people's awareness of their own health, as well as the expansion of healthcare facilities, advancements in medicine, and advancements in imaging methods[36,37].

Less frequently, patients reported ear pain (23.4%) and giddiness (23.4%), both of which are less commonly associated with aural polyps but can occur, especially in the presence of complications like infection or inflammation. The low prevalence of tinnitus (4.3%) in this study contrasts with some studies that have suggested tinnitus can sometimes be linked to chronic ear conditions. However, the minimal association between tinnitus and aural polyps in this study could reflect the specific pathology of aural polyps as observed in the cohort[38].

The clinically investigated patients in this study revealed several types of aural polyps have been identified in the middle ear External Auditory Canal with histopathology diagnosis of COM-Squamous type, COM-Mucosal type, Benign Schwannoma, Foreign Body Granuloma, COM-Tuberculosis otitis media and Ceruminous Cystadenocarcinoma polyp .

Our results indicated that COM-Squamous type was the most prevalent condition among the patients, being diagnosed in 23 (48.9%) of the total cases. This finding aligns with a histopathological study of aural polyps by Xenellis and colleagues et al., [10] , which reported

that 86.7% of patients with chronic otitis media were diagnosed with cholesteatoma. A similar trend was observed by Kalra and others[3], who found that 88% of patients diagnosed with cholesteatoma following mastoidectomy. In contrast, an earlier study by Gliklich et al.,[6] showed that 42% of patients with aural polyps had chronic otitis media, and only 28% of those were diagnosed with cholesteatoma. While COM-Squamous type was most common cause of aural polyp, it was noted intraoperatively that these cases also had polypoidal middle ear mucosa [11, 39,40].

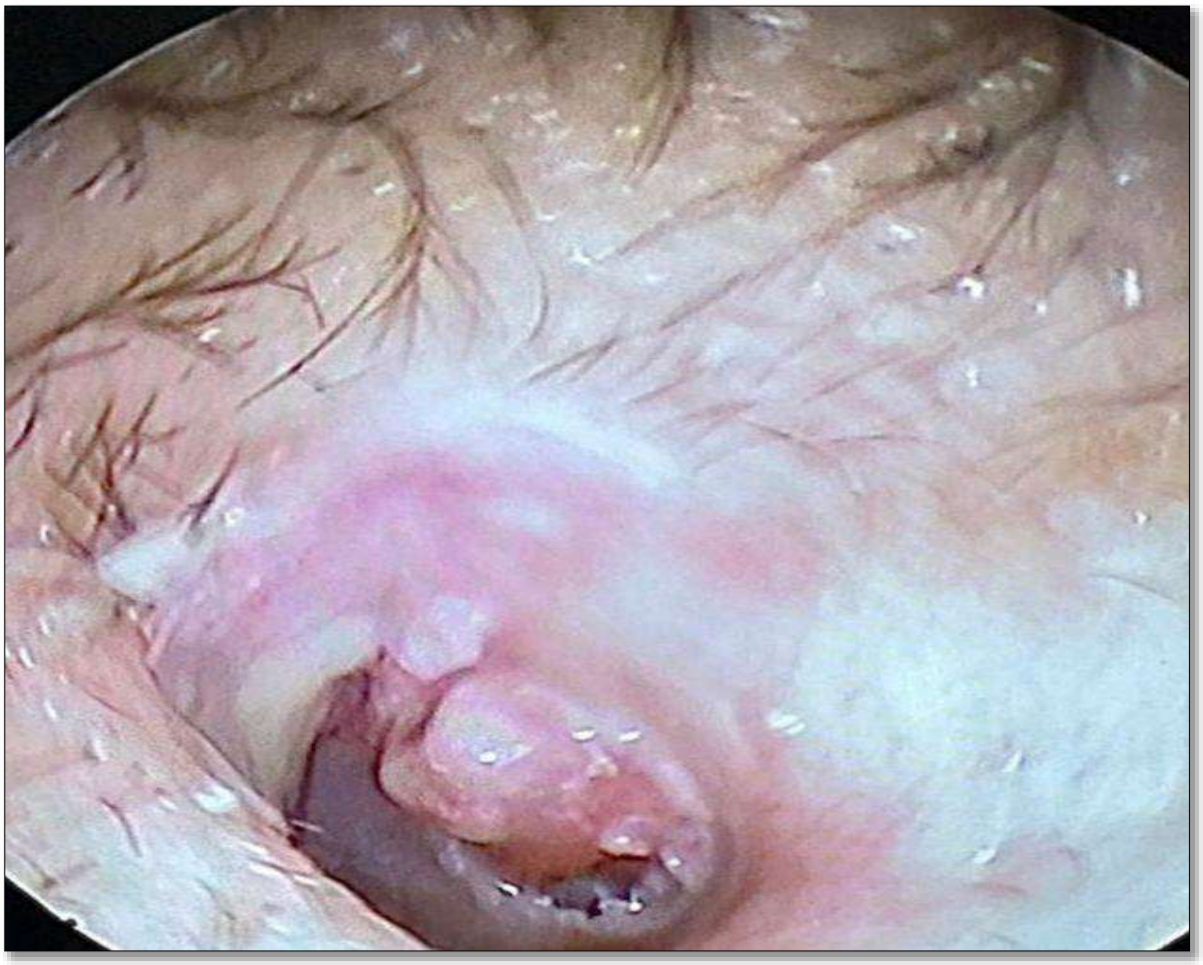


FIGURE-15: Aural polyp secondary to COM-squamous type

Polyps can be caused by persistent suppurative otitis media, inflammatory disease, or pulmonary or systemic tuberculosis[41]. According to studies, between 3 and 5% of surgical specimens have granulomatous disorders[42]. Additionally, cases of tuberculosis presenting with multiple tympanic membrane perforations and limited presentations of tuberculous otitis media

have been described. It is also known that the internal carotid artery in the middle ear runs abnormally[20 26]. Nevertheless, no research on tuberculosis manifesting as an auditory polyp has been cited in the literature.

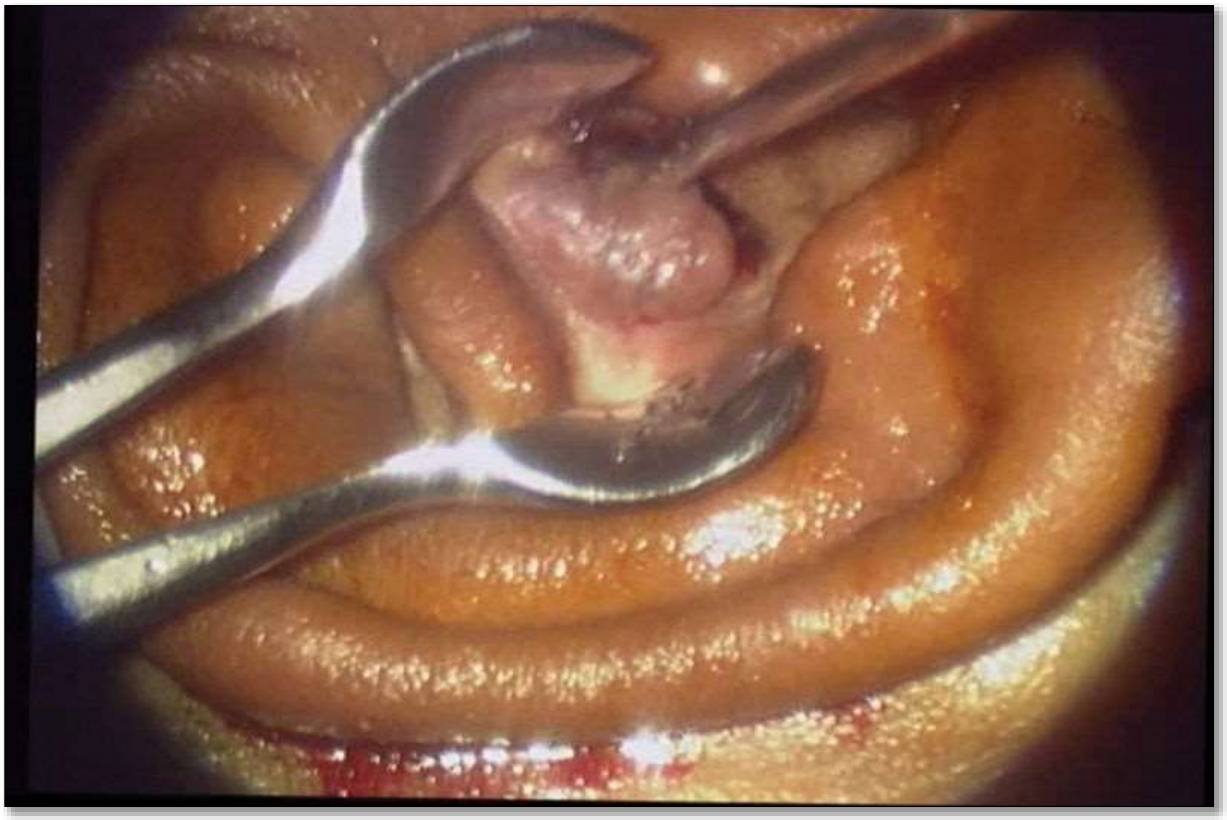


FIGURE-16 : Gross clinical picture of aural polyp secondary to tuberculosis otitis media. Definitive diagnosis requires tissue biopsy and histopathological confirmation.

Tegmen erosion may result from trauma, brain herniation, underlying inflammatory or malignant pathology, or any severe squamous disease[3,43,44]. Radiological assessments and advancements in surgical navigation are crucial in the present day, particularly for surgeons[45]. Before undergoing any major surgery, a detailed picture of the normal important structures, together with any abnormalities and disease progressions, is essential. Soft tissue attenuation with hyperintense or hypointense areas affecting the external auditory canal, middle ear, and mastoid cavity was recorded by radiological assessment in the majority of our cases. High resolution computerized tomography (CT) imaging is key to assessing any associated temporal

bone destruction with up to 98.6% accuracy in diagnosing middle ear diseases and its complications [46,47].

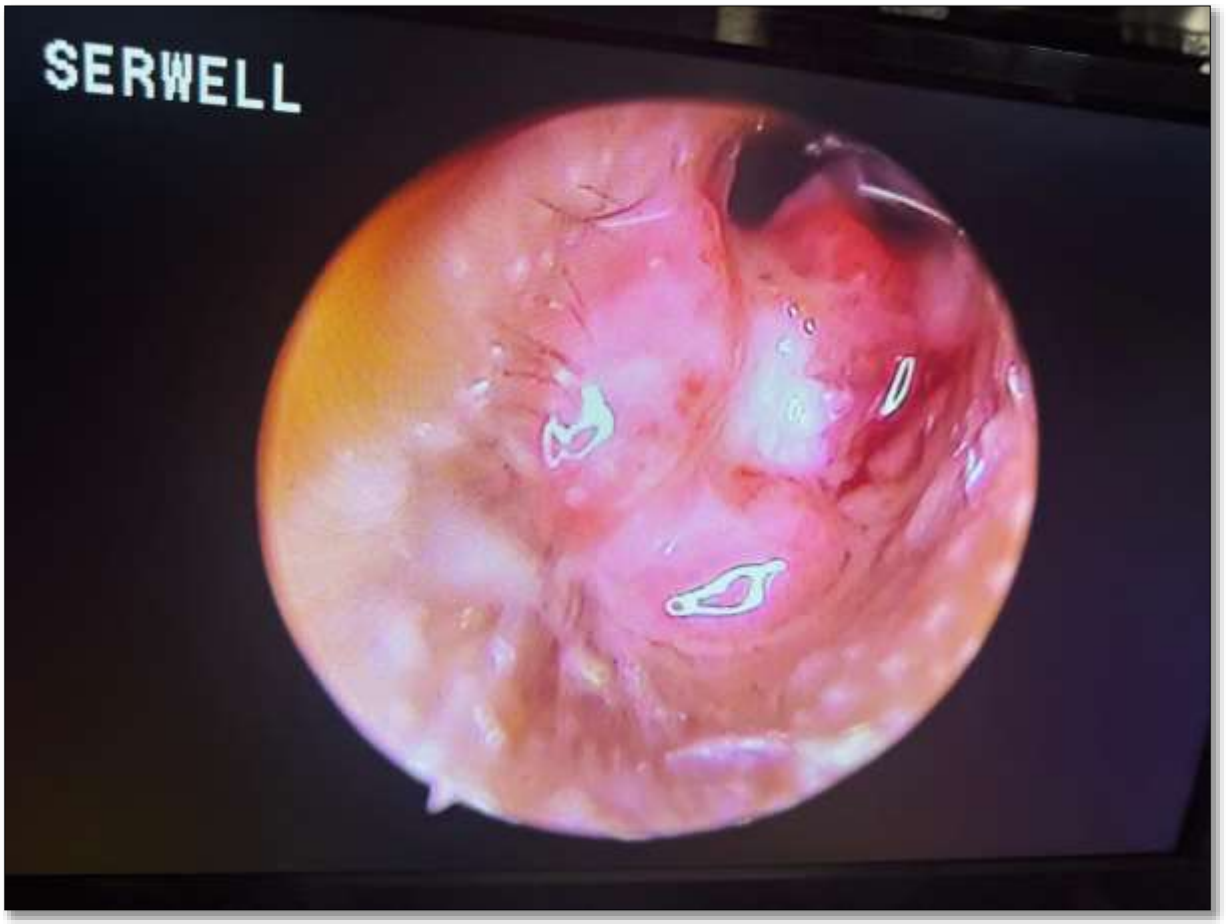


Figure-17: Gross clinical picture of aural polyp secondary to foreign body granulations.

Cancerous masses were most commonly found in patients over the age of 50. Tumour carcinomas were identified in one woman, she had bloody discharge and a history of chronic otitis media. Similar findings have been reported in other studies, which emphasize the low likelihood of neoplastic development in middle ear masses. Due to the higher rate of squamous epithelium proliferation in middle ear tumours, the majority of neoplastic growths are squamous cell carcinomas. In these cases, polypectomy is performed along with the removal of the surrounding affected tissue, followed by radiotherapy. The prognosis for patients with neoplastic ear tumours is generally poor, largely due to delayed diagnosis and the extensive spread of the disease to nearby areas, along with the tumour's metastatic nature.

Only one woman with a history of chronic otitis media with bloody discharge had tumour carcinomas. Other investigations that highlighted the low risk of neoplastic growth linked to middle ear tumours produced similar findings[15,48,49]. The majority of neoplastic growth in middle ear tumours is squamous cell carcinoma because of the increased proliferation of squamous epithelium in these tumours. In these situations, radiation is administered after polypectomy and the surrounding afflicted area. The prognosis for cases of neoplastic development in the ears is typically quite bad; this is typically due to the tumour's metastatic behaviour, the disease's widespread spread to the surrounding areas, and the delayed diagnosis[25 33].

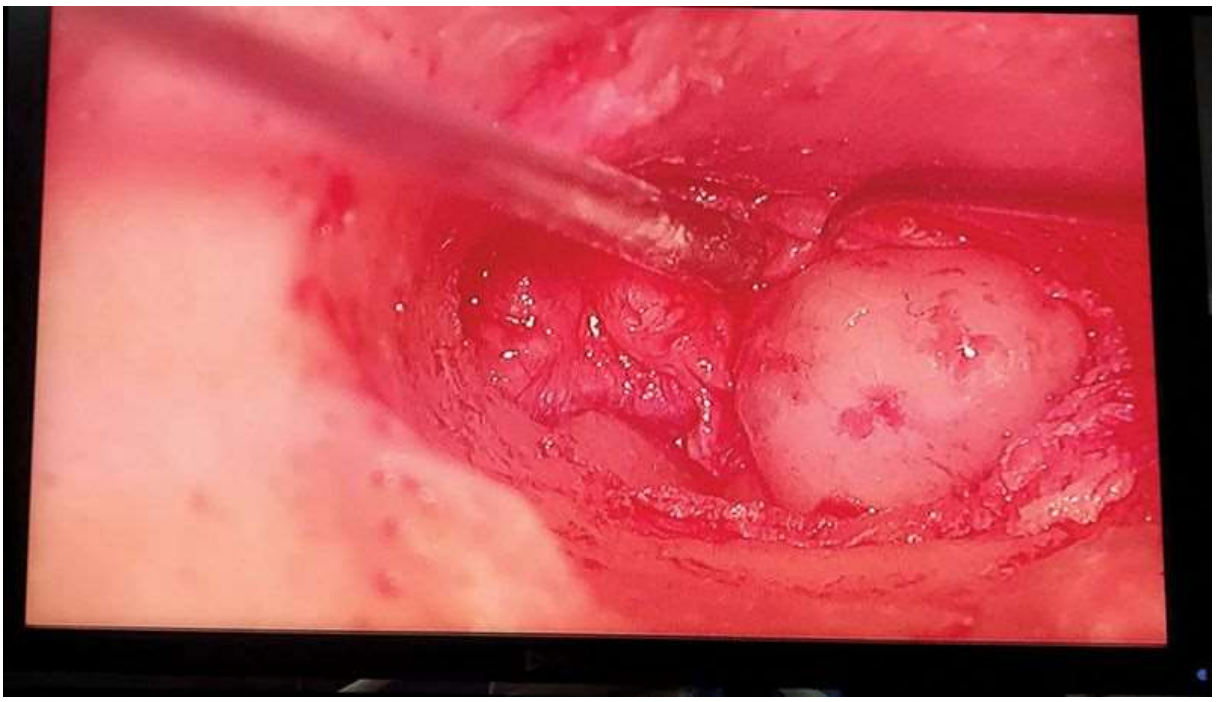


Figure-18: Gross clinical picture of facial neuroma presenting as aural polyp

Aural polyps that do not exhibit neoplastic features are typically treatable and can be effectively managed to prevent future recurrence. Preserving hearing in the affected ear remains a challenge, especially after the tympanic membrane has been perforated by the polyp. Although the value of preoperative biopsy for a conclusive diagnosis has not been well-documented in literature, we do not advise it in the absence of a deeper comprehension of the underlying

pathology. Polyps need to be evaluated completely preoperatively. The greatest caution must be used when reaching the polyps intraoperatively, particularly from the retrotympanum. When raising the tympanomeatal flap, it's crucial to avoid employing sharp objects close to mass lesions because they can never be withdrawn. In the event of vascular lesions, avoiding the fibrous annulus is also advised.

Figure-19: Gross clinical picture of aural polyp emerging from the retrotympanum with a broad base and narrow stalk attachment.

The best approach to treating and managing aural polyps depends on the specific characteristics of the condition. In cases where there is simple tissue overgrowth without any visible complications affecting the surrounding middle ear structures, surgical removal typically leads to a favorable outcome [50]. However, when the diagnosis includes cholesteatoma or carcinoma, more extensive treatment is required, and these cases have a higher risk of recurrence, often with no chance of fully restoring normal hearing[8]. Cholesteatoma in children is particularly concerning due to the rapid growth facilitated by the structure of the temporal bone, which leads to more aggressive complications. These cases require special attention and care [51].

Medical professionals must rely on a comprehensive clinical history, a clinical examination that includes any surrounding structures in the event of extension, and underlying inflammatory processes when aural polyps are presented. Before surgery, a thorough radiological assessment is required. Working with auditory polyps requires the utmost caution and attention to detail, and postoperative histopathological tissue analysis is essential to avoid jeopardizing the patient's final course of treatment.

In conclusion, while much has been learned about the clinical presentation and histopathological features of aural polyps, the correlation between these two aspects is still an underexplored area of research. The findings from studies reviewed here indicate that a better understanding of the clinical-histopathological relationship could help refine diagnostic and treatment protocols for patients with aural polyps. Future research, particularly prospective observational studies, will be crucial in advancing this field and improving patient outcomes.

SUMMARY

SUMMARY

This prospective observational study, conducted between April 2023 and September 2024 at R.L. Jalappa Hospital and Research Centre, Tamaka, Kolar, aimed to investigate the correlation between clinical findings and histopathological examination of aural polyps in patients with chronic ear conditions. A total of 47 patients were enrolled in the study, all diagnosed with aural polyps in the external auditory canal and middle ear, following rigorous inclusion and exclusion criteria.

The study's objectives were to analyses the clinical and histopathological findings in patients with aural polyps and explore the association between these findings. Data collection included detailed patient history, otological examination, pre-operative investigations, and histopathological evaluation of excised polyps. Clinical diagnoses were verified by histopathological examination to assess diagnostic accuracy and agreement.

The results showed a predominant presence of cholesteatoma (48.9%) among the histopathological findings, followed by benign fibrous polyps (21.3%) and granulomatous polyps (14.9%). The study revealed that the most common presenting symptom was ear discharge (76.6%), followed by hearing loss/blocking sensation (38.3%), with a minimal occurrence of tinnitus (4.3%). Otoscopic examination primarily identified tympanic membrane retraction (46.8%) and perforations with an aural mass (36.2%). The clinical diagnosis most commonly associated with the polyps was chronic otitis media (COM) with complications, particularly the squamous type (42.6%).

The histopathological examination confirmed that the majority of polyps were related to chronic otitis media, with cholesteatoma being the most common pathology identified. The

study found a high correlation between clinical and histopathological findings in cases of cholesteatoma and benign fibrous polyps, with moderate diagnostic agreement observed in granulomatous and foreign body granulomas. The mean pure tone audiometry (PTA) score of the patients indicated a moderate degree of hearing loss.

The study's findings emphasize the importance of both clinical examination and histopathological analysis in accurately diagnosing and managing aural polyps. It highlights the need for further refinement in clinical assessment and histopathological correlation, particularly for challenging cases like granulomatous polyps and foreign body granulomas. Additionally, the study underscores the significance of preoperative imaging and careful surgical intervention, especially when managing complex cases involving cholesteatoma or other serious middle ear pathologies.

In conclusion, this study provides valuable insights into the relationship between clinical presentation and histopathological findings in aural polyps, offering evidence for more accurate diagnostic approaches and targeted treatment strategies. Future research in this field will help enhance patient outcomes and improve management protocols for aural polyps.

CONCLUSION

CONCLUSION

This prospective observational study provides valuable insights into the clinical and histopathological characteristics of aural polyps, emphasizing the importance of a comprehensive diagnostic approach. The findings indicate a strong correlation between clinical presentation and histopathological results, particularly for common conditions such as COM-Squamous type and COM-mucosal type , where the clinical diagnosis showed high accuracy. Moderate diagnostic agreement was observed in more challenging cases like COM-tuberculosis otitis media and foreign body granulomas, highlighting the complexity of diagnosing aural polyps based solely on clinical or otoscopic findings.

The study underscores the need for a thorough clinical examination, which includes a detailed patient history, oto-logical evaluation, and appropriate imaging, along with histopathological confirmation, to ensure accurate diagnosis and treatment planning. The results also emphasize the importance of surgical intervention, particularly for cases involving chronic otitis media squamous type, which require specialized management to prevent complications such as hearing loss. In order to prevent difficulties, surgeons are advised to handle aural polyps with the utmost care and attention to detail.

Overall, this study supports the need for an integrated approach that combines clinical, otoscopic, and histopathological findings for optimal management of aural polyps. Future studies with larger sample sizes and longer follow-up periods will further refine diagnostic and therapeutic strategies, ultimately improving patient outcomes and reducing the risk of recurrence or complications associated with aural polyps.

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ANNEXURE

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH,
TAMAKA, KOLAR - 563101.

PROFORMA (ANNEXURE-I)

S.NO.	COMPONENTS	
1.	CASE NO.	
2.	AGE	
3.	GENDER	
4.	UHID	
5.	CHIEF COMPLAINTS Hard of hearing Duration Unilateral-right/left Bilateral Ear pain Duration Type of pain -pricking -throbbing -radiating -non radiating Ear discharge Duration If so type Mucous Purulent Mucopurulent Foul smelling Amount Tinnitus Giddiness	

	Facial nerve weakness Headache Fever Nasal obstruction Facial nerve palsy (House brackman scoring)	
6.	**PAST HISTORY** Hypertension Diabetes Primary tuberculosis	
7.	**PERSONAL HISTORY** Diet Appetite Sleep Bowel and bladder habits Smoking (If yes no of packs per day And duration) Alcohol (If yes, duration)	
9.	**GENERAL PHYSICAL EXAMINATION** Build and Nourishment Level of consciousness Temperature Pulse Blood pressure Respiration	

10.	**<u>LOCAL EXAMINATION</u>**
	EAR EXAMINATION
	• PREAURICULAR
	  ○ SINUS
	  ○ CYSTS
	  ○ ABSCESS
	• POSTAURICULAR
	  ○ SINUS
	  ○ ABSCESS
	• PINNA
	SHAPE
	SIZE
	• TRAGUS TENDERNESS
	• EXTERNAL AUDITORY CANAL
	DISCHARGE
	TYPE OF DISCHARGE
	EDEMA
	MASS/POLYP
	-grade of occlusion in ear canal
	(Less than 50%, between 50 and 90%
	And more than 90%)
	-apparent quadrant of origin
	-surface aspect (epithelized or reddish)
	• Tympanic membrane
	cone of light
	perforation
	site
	size
	• Facial nerve
	Tuning fork tests
	• Rinne's test
	• Weber's test
		RIGHT	LEFT

11.	**NOSE EXAMINATION** • EXTERNAL FRAME WORK - ANY ABNORMALITY • COLUMELLA • VESTIBULE • SEPTUM - DEVIATION • PNS TENDERNESS	
12.	**ORAL CAVITY** • MOUTH OPENING • LIPS • TEETH • TONGUE • ANTERIOR PILLAR • POSTERIOR PILLAR • POSTERIOR PHARYNGEAL WALL	
13.	**SYSTEMIC EXAMINATION** CVS CNS RS P/A	
14.	**SURGERY DONE**	
15.	**SURGERY DATE**	
16.	**INTRAOP FINDINGS**	

17.	**DATE OF DISCHARGE**	
18.	**Histopathology report**	
19.	**Course in the hospital**:	
20	**Condition of the patient on discharge:**	
21	**Post-operative period**	

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH, TAMAKA, KOLAR - 563101.

PATIENT INFORMATION SHEET
(ANNEXURE-II)

Name of the study:

CORRELATION OF CLINICAL AND PATHOLOGICAL FINDINGS IN AURAL POLYPS

Place of study- R.L Jalappa hospital attached to Sri Devaraj Urs Medical college

Aural Polyps can form in the middle ear and external auditory tube as a result of ongoing irritation or an infection of unknown origin. Patients may experience reduced hearing, otalgia and otorrhea as the condition worsens over time and this can be treated by surgical removal of the aural polyp. The Dept of Otorhinolaryngology, at Sri Devaraj Urs Academy of Higher Education & Research has decided to undertake a study on this regard.

We are inviting patients with aural polyps to take part in this study, based on criteria list.
Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you agree to participate in this study, necessary details as given in the proforma need.
Patients participating will undergo tympano-mastoid surgeries or external auditory canal surgeries and aural polyp collected will be sent for histopathological study
Your participation will help us to use the outcomes of this study for future subjects. Your participation in this study will not put you at any risk.
All information collected from you will be strictly confidential & will not be disclosed to any outsider. This information collected will be used for research purpose. This information will not reveal your identity & this study have been reviewed by central ethics committee.
For any further clarification you are free to contact the Principal investigator, Dr Deepthi M, mobile – 973161128
There is no compulsion to participate in this study, further you are at the liberty to withdraw from the study at any time if you wish to do so. Your treatment aspect will not be affected if you not wish to participate. You are required to sign only if you voluntarily agree to participate in proposed study. This document will be stored in a safe locker at the Dept of Otorhinolaryngology and strict confidentiality will be maintained. A copy of this document will be given to you for your information.

PRINCIPAL INVESTIGATOR'S NAME: Dr.Deepthi.M(Postgraduate in department of Otorhinolaryngology)
MOBILE NUMBER: 9731611278
EMAIL ID : deepthimanjunath27@gmail.com

GUIDE- Dr. K.C Prasad
Professor and Head of department of Otorhinolaryngology
Sri Devaraj Urs Medical College, Tamaka, Kolar

ರೋಗಿಯ ಮಾಹಿತಿ ಹಾಳೆ

ಅಧ್ಯಯನದ ಹೆಸರು:

ಆರಲ್ ಪಾಲಿಪ್ಸ್ ನಲ್ಲಿ ಕ್ಲಿನಿಕಲ್ ಮತ್ತು ಪ್ಯಾಥೊಲಾಜಿಕಲ್ ಸಂಶೋಧನೆಗಳ ಸಹಯೋಗ

ಅಧ್ಯಯನ ಸ್ಥಳ- ಶ್ರೀ ದೇವರಾಜ್ ಅರಸ್ ವೈದ್ಯಕೀಯ ಕಾಲೇಜಿಗೆ ಲಗತ್ತಿಸಲಾದ ಆರ್.ಎಲ್.ಜಾಲಪ್ಪ ಆಸ್ಪತ್ರೆ

ನಿರಂತರ ಕಿರಿಕಿರಿ ಅಥವಾ ಅಪರಿಚಿತ ಮೂಲದ ಸೋಂಕಿನ ಪರಿಣಾಮವಾಗಿ ಮಧ್ಯ ಕಿವಿ ಮತ್ತು ಬಾಹ್ಯ ಶ್ರವಣ ಕೊಳವೆಯಲ್ಲಿ ಔರಲ್ ಪಾಲಿಪ್ಸ್ ರೂಪುಗೊಳ್ಳಬಹುದು. ಕಾಲಾನಂತರದಲ್ಲಿ ಪರಿಸ್ಥಿತಿ ಹದಗೆಡುವುದರಿಂದ ರೋಗಿಗಳು ಕಡಿಮೆ ಶ್ರವಣ, ಒಟಾಲ್ಜಿಯಾ ಮತ್ತು ಒಟೋರಿಯಾವನ್ನು ಅನುಭವಿಸಬಹುದು ಮತ್ತು ಇದನ್ನು ಔರಲ್ ಪಾಲಿಪ್ ಅನ್ನು ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಯಿಂದ ತೆಗೆದುಹಾಕುವ ಮೂಲಕ ಚಿಕಿತ್ಸೆ ನೀಡಬಹುದು. ಈ ನಿಟ್ಟಿನಲ್ಲಿ ಶ್ರೀ ದೇವರಾಜ ಅರಸು ಅಕಾಡೆಮಿ ಆಫ್ ಹೈಯರ್ ಎಜುಕೇಶನ್ ಅಂಡ್ ರಿಸರ್ಚ್ ನ ಒಟೋರ್ಹಿನೊಲಾರಿಂಗಾಲಜಿ ವಿಭಾಗವು ಅಧ್ಯಯನ ನಡೆಸಲು ನಿರ್ಧರಿಸಿದೆ.

ಮಾನದಂಡ ಪಟ್ಟಿಯ ಆಧಾರದ ಮೇಲೆ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳಲು ನಾವು ಔರಲ್ ಪಾಲಿಪ್ಸ್ ಹೊಂದಿರುವ ರೋಗಿಗಳನ್ನು ಆಹ್ವಾನಿಸುತ್ತಿದ್ದೇವೆ.

ಈ ಸಂಶೋಧನೆಯಲ್ಲಿ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯು ಸಂಪೂರ್ಣವಾಗಿ ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ. ಭಾಗವಹಿಸಬೇಕೋ ಬೇಡವೋ ಎಂಬುದು ನಿಮ್ಮ ಆಯ್ಕೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನೀವು ಸಮ್ಮತಿಸಿದರೆ, ಪ್ರೊಫಾರ್ಮಾದಲ್ಲಿ ನೀಡಲಾದ ಅಗತ್ಯ ವಿವರಗಳು ಅಗತ್ಯ . ಭಾಗವಹಿಸುವ ರೋಗಿಗಳು ಟ್ರಿಂಪಾನೊ-ಮಾಸ್ಟಾಯ್ಡ್ ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಗಳು ಅಥವಾ ಬಾಹ್ಯ ಶ್ರವಣೇಂದ್ರಿಯ ಕಾಲುವೆ ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಗಳಿಗೆ ಒಳಗಾಗುತ್ತಾರೆ ಮತ್ತು ಸಂಗ್ರಹಿಸಿದ ಶ್ರವಣೇಂದ್ರಿಯ ಪೊಲಿಪ್ ಅನ್ನು ಹಿಸ್ಟೊಪಾಲಾಜಿಕಲ್ ಅಧ್ಯಯನಕ್ಕೆ ಕಳುಹಿಸಲಾಗುತ್ತದೆ

ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯು ಈ ಅಧ್ಯಯನದ ಫಲಿತಾಂಶಗಳನ್ನು ಭವಿಷ್ಯದ ವಿಷಯಗಳಿಗೆ ಬಳಸಲು ನಮಗೆ ಸಹಾಯ ಮಾಡುತ್ತದೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯು ನಿಮಗೆ ಯಾವುದೇ ಅಪಾಯವನ್ನುಂಟು ಮಾಡುವುದಿಲ್ಲ.

ನಿಮ್ಮಿಂದ ಸಂಗ್ರಹಿಸಲಾದ ಎಲ್ಲಾ ಮಾಹಿತಿಯು ಕಟ್ಟುನಿಟ್ಟಾಗಿ ಗೌಪ್ಯವಾಗಿರುತ್ತದೆ ಮತ್ತು ಯಾವುದೇ ಹೊರಗಿನವರಿಗೆ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ. ಸಂಗ್ರಹಿಸಿದ ಈ ಮಾಹಿತಿಯನ್ನು ಸಂಶೋಧನಾ ಉದ್ದೇಶಕ್ಕಾಗಿ ಬಳಸಲಾಗುತ್ತದೆ. ಈ ಮಾಹಿತಿಯು ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸುವುದಿಲ್ಲ ಮತ್ತು ಈ ಅಧ್ಯಯನವನ್ನು ಕೇಂದ್ರ ನೈತಿಕ ಸಮಿತಿಯು ಪರಿಶೀಲಿಸಿದೆ.

ಯಾವುದೇ ಹೆಚ್ಚಿನ ಸ್ಪಷ್ಟೀಕರಣಕ್ಕಾಗಿ ನೀವು ಪ್ರಧಾನ ತನಿಖಾಧಿಕಾರಿ ಡಾ ದೀಪ್ತಿ ಎಂ, ಮೊಬೈಲ್ - 973161128 ಅನ್ನು ಸಂಪರ್ಕಿಸಲು ಮುಕ್ತರಾಗಿದ್ದೀರಿ

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಯಾವುದೇ ಬಲವಂತವಿಲ್ಲ, ಮುಂದೆ ನೀವು ಹಾಗೆ ಮಾಡಲು ಬಯಸಿದರೆ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ನಿಮಗೆ ಸ್ವಾತಂತ್ರ್ಯವಿದೆ. ನೀವು ಭಾಗವಹಿಸಲು ಬಯಸದಿದ್ದರೆ ನಿಮ್ಮ ಚಿಕಿತ್ಸೆಯ ಅಂಶವು ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ. ಉದ್ದೇಶಿತ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನೀವು ಸ್ವಯಂಪ್ರೇರಣೆಯಿಂದ ಒಪ್ಪಿಕೊಂಡರೆ ಮಾತ್ರ ನೀವು ಸಹಿ ಮಾಡಬೇಕಾಗುತ್ತದೆ. ಈ ಡಾಕ್ಯುಮೆಂಟ್ ಅನ್ನು ಒಟೋರಿನೋಲಾರಿಂಗೋಲಜಿ ವಿಭಾಗದಲ್ಲಿ ಸುರಕ್ಷಿತ ಲಾಕರ್‌ನಲ್ಲಿ ಸಂಗ್ರಹಿಸಲಾಗುತ್ತದೆ ಮತ್ತು ಕಟ್ಟುನಿಟ್ಟಾದ ಗೌಪ್ಯತೆಯನ್ನು ಕಾಪಾಡಿಕೊಳ್ಳಲಾಗುತ್ತದೆ. ನಿಮ್ಮ ಮಾಹಿತಿಗಾಗಿ ಈ ಡಾಕ್ಯುಮೆಂಟ್‌ನ ನಕಲನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುತ್ತದೆ.

ಪ್ರಧಾನ ತನಿಖಾಧಿಕಾರಿಗಳ ಹೆಸರು: ಡಾ. ದೀಪ್ತಿ ಎಂ (ಒಟೋರಿನೋಲಾರಿಂಗೋಲಜಿ ವಿಭಾಗದಲ್ಲಿ ಸ್ನಾತಕೋತ್ತರ ಪದವೀಧರರು)

ಮೊಬೈಲ್ ಸಂಖ್ಯೆ: 9731611278

ಇಮೇಲ್ ಐಡಿ :deepthimanjunath27@gmail.com

ಮಾರ್ಗದರ್ಶಿ- ಡಾ.ಕೆ.ಸಿ.ಪ್ರಸಾದ್

ಒಟೋರಿನೋಲಾರಿಂಗೋಲಜಿ ವಿಭಾಗದ ಪ್ರಾಧ್ಯಾಪಕ ಮತ್ತು ಮುಖ್ಯಸ್ಥ

ಶ್ರೀ ದೇವರಾಜ ಅರಸು ವೈದ್ಯಕೀಯ ಕಾಲೇಜು, ಟಮಕ, ಕೋಲಾರ.

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH,

TAMAKA, KOLAR - 563101.

INFORMED CONSENT FORM

(ANNEXURE -III)

Name of the study: CORRELATION OF CLINICAL AND PATHOLOGICAL FINDINGS IN AURAL POLYPS

I have read the foregoing information, or it has been read to me. I am willing to undergo tympano-mastoid surgeries or external auditory Canal surgeries for polypectomy, as explained to me by my treating doctor. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I have been explained about the possible benefits and adversities, due to interventions in my own understandable language. I consent voluntarily to participate as a participant in this research.

Print Name of Participant_____
Signature of Participant _____ Date _____

For illiterate -
I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness_____ AND Thumb print of participant
Signature of witness _____ Date _____

Statement by the researcher/person taking consent-
I have accurately read out the information sheet to the potential participant with the best of my ability.I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.
A copy of this ICF (informed consent form) has been provided to the participant.

Print Name of Researcher taking the consent_____

Signature of Researcher taking the consent_____ Date_____

PRINCIPAL INVESTIGATOR'S NAME : Dr Deepthi M(Postgraduate in department of otorhinolaryngology)
MOBILE NUMBER : 9731611278
EMAIL ID : deepthimanjunath27@gmail.com

ತಿಳಿಸಲಾದ ಒಪ್ಪಿಗೆ ನಮೂನೆ

ಅಧ್ಯಯನದ ಹೆಸರು: ಆರಲ್ ಪಾಲಿಪ್ಸ್ ನಲ್ಲಿ ಕ್ಲಿನಿಕಲ್ ಮತ್ತು ಪ್ಯಾಥೊಲಾಜಿಕಲ್ ಸಂಶೋಧನೆಗಳ ಸಹಯೋಗ

ನಾನು ಮೇಲಿನ ಮಾಹಿತಿಯನ್ನು ಓದಿದ್ದೇನೆ ಅಥವಾ ಅದನ್ನು ನನಗೆ ಓದಿದ್ದೇನೆ. ನನ್ನ ಚಿಕಿತ್ಸಕ ವೈದ್ಯರು ನನಗೆ ವಿವರಿಸಿದಂತೆ ನಾನು ಟೈಂಪನೋಮಾಸ್ಟಾಯ್ಡ್ ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಗಳು ಅಥವಾ ಬಾಹ್ಯ ಶ್ರವಣೇಂದ್ರಿಯ ಕಾಲುವೆ ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಗಳಿಗೆ ಒಳಗಾಗಲು ಸಿದ್ಧನಿದ್ದೇನೆ. ಅದರ ಬಗ್ಗೆ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲು ನನಗೆ ಅವಕಾಶವಿದೆ ಮತ್ತು ನಾನು ಕೇಳಿದ ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳಿಗೆ ನನ್ನ ತೃಪ್ತಿಗೆ ಉತ್ತರಿಸಲಾಗಿದೆ. ನನ್ನ ಸಂತ ಅರ್ಥವಾಗುವ ಭಾಷೆಯಲ್ಲಿ ಮಧ್ಯಸ್ಥಿಕೆಗಳಿಂದಾಗಿ ಸಂಭವನೀಯ ಪ್ರಯೋಜನಗಳು ಮತ್ತು ಪ್ರತಿಕೂಲಗಳ ಬಗ್ಗೆ ನನಗೆ ವಿವರಿಸಲಾಗಿದೆ. ಈ ಸಂಶೋಧನೆಯಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳುವವನಾಗಿ ಭಾಗವಹಿಸಲು ನಾನು ಸ್ವಯಂಪ್ರೇರಣೆಯಿಂದ ಸಮ್ಮತಿಸುತ್ತೇನೆ.

ಭಾಗವಹಿಸುವವರ ಹೆಸರನ್ನು ಮುದ್ರಿಸಿ_____

ಭಾಗವಹಿಸುವವರ ಸಹಿ _____ ದಿನಾಂಕ _____

ಅನಕ್ಷರಸ್ಥರಿಗೆ -

ಸಂಭಾವ್ಯ ಪಾಲ್ಗೊಳ್ಳುವವರಿಗೆ ಒಪ್ಪಿಗೆಯ ನಮೂನೆಯ ನಿಖರವಾದ ಓದುವಿಕೆಯನ್ನು ನಾನು ನೋಡಿದ್ದೇನೆ ಮತ್ತು ವ್ಯಕ್ತಿಯು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲು ಅವಕಾಶವನ್ನು ಹೊಂದಿದ್ದೇನೆ. ವ್ಯಕ್ತಿಯು ಮುಕ್ತವಾಗಿ ಒಪ್ಪಿಗೆ ನೀಡಿದ್ದಾರೆ ಎಂದು ನಾನು ದೃಢೀಕರಿಸುತ್ತೇನೆ.

ಸಾಕ್ಷಿಯ ಹೆಸರನ್ನು ಮುದ್ರಿಸಿ_____ ಮತ್ತು ಭಾಗವಹಿಸುವವರ ಹೆಬ್ಬೆರಳು ಮುದ್ರೆ

ಸಾಕ್ಷಿಯ ಸಹಿ _____ ದಿನಾಂಕ _____

ಸಂಶೋಧಕರು/ಸಮ್ಮತಿಯನ್ನು ತೆಗೆದುಕೊಳ್ಳುವ ವ್ಯಕ್ತಿಯಿಂದ ಹೇಳಿಕೆ-

ಸಂಭಾವ್ಯ ಭಾಗವಹಿಸುವವರಿಗೆ ನನ್ನ ಸಾಮರ್ಥ್ಯಕ್ಕೆ ತಕ್ಕಂತೆ ನಾನು ಮಾಹಿತಿ ಹಾಳೆಯನ್ನು ನಿಖರವಾಗಿ ಓದಿದ್ದೇನೆ. ಭಾಗವಹಿಸುವವರಿಗೆ ಅಧ್ಯಯನದ ಕುರಿತು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲು ಅವಕಾಶವನ್ನು ನೀಡಲಾಗಿದೆ ಎಂದು ನಾನು ದೃಢೀಕರಿಸುತ್ತೇನೆ ಮತ್ತು ಭಾಗವಹಿಸುವವರು ಕೇಳಿದ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಸರಿಯಾಗಿ ಉತ್ತರಿಸಲಾಗಿದೆ ಮತ್ತು ನನ್ನ ಸಾಮರ್ಥ್ಯದ ಅತ್ಯುತ್ತಮ. ಸಮ್ಮತಿಯನ್ನು ನೀಡುವಂತೆ ವ್ಯಕ್ತಿಯನ್ನು ಒತ್ತಾಯಿಸಲಾಗಿಲ್ಲ ಮತ್ತು ಒಪ್ಪಿಗೆಯನ್ನು ಮುಕ್ತವಾಗಿ ಮತ್ತು ಸ್ವಯಂಪ್ರೇರಣೆಯಿಂದ ನೀಡಲಾಗಿದೆ ಎಂದು ನಾನು ದೃಢೀಕರಿಸುತ್ತೇನೆ.

ಈ ICF ನ ನಕಲನ್ನು (ಮಾಹಿತಿ ಸಮ್ಮತಿ ನಮೂನೆ) ಭಾಗವಹಿಸುವವರಿಗೆ ಒದಗಿಸಲಾಗಿದೆ.
ಸಮ್ಮತಿಯನ್ನು ತೆಗೆದುಕೊಳ್ಳುವ ಸಂಶೋಧಕರ ಹೆಸರನ್ನು ಮುದ್ರಿಸಿ_____
ಸಮ್ಮತಿಯನ್ನು ತೆಗೆದುಕೊಳ್ಳುವ ಸಂಶೋಧಕರ ಸಹಿ_____
ದಿನಾಂಕ_____

ಪ್ರಿನ್ಸಿಪಾಲ್ ತನಿಖಾಧಿಕಾರಿಗಳ ಹೆಸರು: ಡಾ ದೀಪ್ತಿ ಎಂ (ಓಟೋರಿನೋಲಾರಿಂಗೋಲಜಿ ವಿಭಾಗದಲ್ಲಿ ಸ್ನಾತಕೋತ್ತರ ಪದವೀಧರರು)ಮೊಬೈಲ್ ಸಂಖ್ಯೆ : 9731611278
ಇಮೇಲ್ ಐಡಿ : deepthimanjunath27@gmail.com

MASTERCHART

Serial No	AGE	SEX	LESION LATERALITY	EAR PAIN	Giddiness	Ear discharge	Hearing Loss/blocking sensation	Tinnitus	OTOSCOPY FINDINGS	Clinical Diagnosis	FINAL CLINICAL DIAGNOSIS	PTA Findings	KPS	Surgery Done	intra op and post op complications	Histopathology Report	
1	48	Female	Left	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	64 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
2	23	Female	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with mild hearing loss with complications	COM with cholesteatoma	37 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
3	51	Male	Left	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	71 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
4	19	Female	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss without complications	COM with cholesteatoma	47 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
5	40	Male	Left	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	77 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
6	62	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss with complications	COM with cholesteatoma	44 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
7	58	Male	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	73 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
8	30	Female	Right	NO	NO	YES	NO	no	TM posterosuperior retraction noted	Squamous type COM with moderate hearing loss with complications	Aural Polyp secondary to Cholesteatoma	60 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
9	60	Male	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	66 dBHL	70	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
10	32	Female	Left	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	COM with cholesteatoma	71 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
11	50	Male	Right	NO	NO	YES	YES	yes	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	78 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
12	52	Female	Right	NO	NO	YES	YES	no	Aural polyp seen	Aural Mass Under Evaluation	Aural Mass Under Evaluation	60 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	hign Schwannoma in External Auditory Canal	
13	41	Male	Right	NO	NO	YES	YES	no	Aural polyp seen	Aural Mass Under Evaluation	Aural Mass Under Evaluation	71 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Benign Schwannoma in Middle Ear	
14	21	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with mild hearing loss with complications	Granulomatous Polyp	31 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Granulomatous Polyp	
15	59	Female	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss with complications	Granulomatous Polyp	43 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Granulomatous Polyp	
16	26	Female	Right	NO	NO	YES	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	78 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
17	39	Female	Right	NO	NO	YES	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	73 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
18	18	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss without complications	Granulomatous Polyp	49 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Granulomatous Polyp	
19	35	Female	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	72 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
20	38	Female	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	64 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
21	49	Male	Right	NO	NO	YES	YES	yes	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	64 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
22	43	Female	Left	yes	YES	NO	NO	no	Aural polyp seen	Aural Mass Under Evaluation	Aural Mass Under Evaluation	12 dBHL	90	Foreign Body Removal + Canalplasty	nil	Foreign Body Granuloma	
23	27	Male	Left	NO	NO	YES	YES	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss with complications	Granulomatous Polyp	45 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Granulomatous Polyp	
24	17	Female	Left	NO	NO	YES	YES	no	Different types of perforation with an aural mass seen	Mucosal type COM with mild hearing loss without complications	Granulomatous Polyp	39 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
25	25	Male	Right	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	69 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
26	56	Female	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss with complications	Foreign Body Granuloma	41 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Granulomatous Polyp	
27	36	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with mild hearing loss with complications	Foreign Body Granuloma	34 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Foreign Body Granuloma	
28	33	Female	Right	NO	NO	YES	YES	no	Aural polyp seen	Aural Mass Under Evaluation	Aural Mass Under Evaluation	78 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Ceruminous Cystadenocarcinoma	
29	31	Female	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	76 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
30	54	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss with complications	Foreign Body Granuloma	48 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Foreign Body Granuloma	
31	34	Female	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	69 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
32	20	Female	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with mild hearing loss with complications	Benign Fibrous Polyp	37 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
33	37	Female	Right	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	69 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
34	47	Male	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	69 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
35	57	Female	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss with complications	Granulomatous polyp	47 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Granulomatous Polyp	
36	53	Female	Left	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	62 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
37	22	Female	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with mild hearing loss with complications	Foreign Body Granuloma	31 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Foreign Body Granuloma	
38	44	Male	Right	NO	NO	YES	YES	no	Aural polyp seen	Aural Mass Under Evaluation	Aural Mass Under Evaluation	76 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
39	46	Male	Right	YES	YES	NO	NO	no	Aural polyp seen	Aural Mass Under Evaluation	Aural Mass Under Evaluation	65 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
40	45	Male	Right	NO	NO	YES	YES	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	78 dBHL	90	Canal Wall Down Mastoidectomy + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
41	16	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss without complications	Granulomatous Polyp	48 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Granulomatous Polyp	
42	55	Male	Right	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with moderate hearing loss with complications	Aural Polyp secondary to Cholesteatoma	60 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
43	29	Female	Right	NO	NO	YES	YES	no	Intact TM	Facial Neuroma	Aural Polyp secondary to Cholesteatoma	70 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
44	64	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with moderate hearing loss without complications	Granulomatous Polyp	48 dBHL	70	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
45	42	Male	Right	NO	NO	YES	YES	no	Aural polyp seen	Aural Mass Under Evaluation	Aural Mass Under Evaluation	60 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	
46	28	Male	Left	YES	YES	NO	NO	no	TM posterosuperior retraction noted	Squamous type COM with severe hearing loss with complications	Aural Polyp secondary to Cholesteatoma	79 dBHL	90	Canal Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + Temporalis Fascia Grafting	nil	Aural Polyp secondary to Cholesteatoma	
47	63	Male	Left	NO	NO	YES	NO	no	Different types of perforation with an aural mass seen	Mucosal type COM with mild hearing loss with complications	Granulomatous Polyp	40 dBHL	90	Cortical Mastoidectomy + Tympanoplasty + Temporalis Fascia Grafting	nil	Benign Fibrous Polyp	

Serial No	AGE	SEX	LESION LATERALITY	EAR PAIN	Giddiness	Ear discharge	Hearing Loss/blocking sensation	Tinnitus	Clinical Diagnosis	FINAL CLINICAL DIAGNOSIS	PTA Findings	Surgery Done	histopathology diagnosi
1	48	Female	Left	YES	YES	NO	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	64 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
2	23	Female	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	37 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
3	51	Male	Left	YES	YES	NO	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	71 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
4	19	Female	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	47 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
5	40	Male	Left	YES	YES	NO	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	77 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
6	62	Male	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	44 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
7	58	Male	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	73 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
8	30	Female	Right	NO	NO	YES	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	60 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
9	60	Male	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	66 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
10	32	Female	Left	YES	YES	NO	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	71 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-mucosal type**
11	50	Male	Right	NO	NO	YES	YES	yes	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	78 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
12	52	Female	Right	NO	NO	YES	YES	no	Foreign body granulation	Foreign body granulation	60 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	Foreign body granulation
13	41	Male	Right	NO	NO	YES	YES	no	Tuberculosis otitis media	Aural Mass Under Evaluation	71 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	Aural Mass Under Evaluation
14	21	Male	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	31 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
15	59	Female	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	43 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
16	26	Female	Right	NO	NO	YES	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	78 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
17	39	Female	Right	NO	NO	YES	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	73 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
18	18	Male	Left	NO	NO	YES	NO	no	Aural Mass Under Evaluation	Granulomatous Polyp	49 dBHL	Cortical Mastoidectomy + Tympanoplasty	Granulomatous Polyp
19	35	Female	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	72 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
20	38	Female	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	64 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
21	49	Male	Right	NO	NO	YES	YES	yes	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	64 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
22	43	Female	Left	yes	YES	NO	NO	no	Schwannoma	Aural Mass Under Evaluation	12 dBHL	Foreign Body Removal + Canalplasty	Aural Mass Under Evaluation
23	27	Male	Left	NO	NO	YES	YES	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	45 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
24	17	Female	Left	NO	NO	YES	YES	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	39 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
25	25	Male	Right	YES	YES	NO	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	69 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
26	56	Female	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	41 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
27	36	Male	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	34 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
28	33	Female	Right	NO	NO	YES	YES	no	Foreign body granulation	Foreign body granulation	78 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	Foreign body granulation
29	31	Female	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	76 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
30	54	Male	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	48 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
31	34	Female	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	69 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
32	20	Female	Left	NO	NO	YES	NO	no	**Chronic otitis media-mucosal type**	**Chronic otitis media-mucosal type**	37 dBHL	Cortical Mastoidectomy + Tympanoplasty	**Chronic otitis media-mucosal type**
33	37	Female	Right	YES	YES	NO	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	69 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
34	47	Male	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	69 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
35	57	Female	Left	NO	NO	YES	NO	no	Aural Mass Under Evaluation	Ceruminous cystadenocarcinoma	47 dBHL	Cortical Mastoidectomy + Tympanoplasty	Ceruminous cystadenocarcinoma
36	53	Female	Left	YES	YES	NO	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	62 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
37	22	Female	Left	NO	NO	YES	NO	no	Tuberculosis otitis media	Tuberculosis otitis media	31 dBHL	Cortical Mastoidectomy + Tympanoplasty	Tuberculosis otitis media
38	44	Male	Right	NO	NO	YES	YES	no	Foreign body granulation	Foreign body granulation	76 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	Foreign body granulation
39	46	Male	Right	YES	YES	NO	NO	no	Aural Mass Under Evaluation	Schwannoma	65 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	Schwannoma
40	45	Male	Right	NO	NO	YES	YES	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	78 dBHL	Canal Wall Down Mastoidectomy + Tympanoplasty	**Chronic otitis media-squamous type**
41	16	Male	Left	NO	NO	YES	NO	no	Tuberculosis otitis media	Tuberculosis otitis media	48 dBHL	Cortical Mastoidectomy + Tympanoplasty	Tuberculosis otitis media
42	55	Male	Right	YES	YES	NO	NO	no	**Chronic otitis media-squamous type**	**Chronic otitis media-squamous type**	60 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	**Chronic otitis media-squamous type**
43	29	Female	Right	NO	NO	YES	YES	no	Aural Mass Under Evaluation	Facial neuroma	70 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	Facial neuroma
44	64	Male	Left	NO	NO	YES	NO	no	Tuberculosis otitis media	Tuberculosis otitis media	48 dBHL	Cortical Mastoidectomy + Tympanoplasty	Tuberculosis otitis media
45	42	Male	Right	NO	NO	YES	YES	no	Foreign body granulation	Granulomatous Polyp	60 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	Granulomatous Polyp
46	28	Male	Left	YES	YES	NO	NO	no	Tuberculosis otitis media	Tuberculosis otitis media	79 dBHL	Wall Down Mastoidectomy, Temporalis Fascia and Ossicular Chain Reconstruction + typano	Tuberculosis otitis media
47	63	Male	Left	NO	NO	YES	NO	no	Tuberculosis otitis media	Tuberculosis otitis media	40 dBHL	Cortical Mastoidectomy + Tympanoplasty	Tuberculosis otitis media