AUDIT ARTICLE

# Ambulatory Otologic Surgery, a 5-year audit of a tertiary care landscape: An Audit

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## Abstract

**Objective:** To assess the frequency and characteristics of readmissions following ambulatory daycare otological surgeries.

**Method:** The retrospective, cross-sectional study was conducted in December 2024 at the Department of Otolaryngology and Head and Neck Surgery, Aga Khan University Hospital, Karachi, and comprised data of patients who underwent therapeutic ambulatory otological procedures, such as cochlear implantation, tympanoplasty, myringoplasty, mastoidectomy and stapedectomy/stapedotomy, between September 1, 2019, and October 1, 2024. Data was analysed using SPSS 23.

**Results:** Of the 825 patients with mean age 30.43±14.45 years, 433(52.5%) were male and 392(47.5%) were female. The most common procedure was tympanoplasty 605(73.3%), followed by cochlear implantation 104(12.6%), stapedectomies 67(8.1%) and mastoidectomy 49(6.1%). Among the 63(7.6%) unplanned cases, 42(66.67%) were classified as minor complications. The most common reasons for unplanned readmissions were wound care issues 34(53.9%), followed by local swelling/pain 7(11.1%) and bleeding 10(15.8%). Readmissions occurred within 10 days post-surgery in 62(98.4%) cases, with only 1(1.6%) patient experiencing a delayed complication in the shape of facial nerve paralysis.

**Conclusion:** Ambulatory otological surgeries were found to be safe and feasible with a low complication rate.

**Key Words:** Ambulatory surgery, Ear surgical procedures, Patient readmission, Tympanoplasty, Cochlear implantation, Wound infection, Postoperative complications.

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## Introduction

Ambulatory surgical procedure or daycare surgeries have been a major cornerstone in the world of otological surgical management. With gradual increase in healthcare costs, shifting trends have favoured ambulatory surgeries owing to reduced healthcare cost, safety profile, early social rehabilitation, and reduced risk of hospital-acquired infections (HAIs). According to an international audit, cost savings up to €5bn could be achieved if 50% of surgical procedures are converted to day-case surgeries in France.[1] A study evaluating social rehabilitation attributed daycare surgeries with rapid social rehabilitation and early return to work/school.[2]

Conventionally, otological procedures have been considered an in-patient endeavour. The rationale of ambulatory surgeries is opposed based on the perioperative risk of adverse events owing to comorbid conditions and perioperative nausea and vomiting.[3] With emerging trends and safety profile of general anaesthesia, daycare surgeries are preferred. However, with government-funded national healthcare systems and difficulty in tertiary-care access, a regular practice of inpatient procedures is generally seen, ultimately increasing healthcare costs and the national health burden. Otological surgeries have been associated with a readmission rate ranging from 2.3% to 4.7%.[4]

The current study was planned to assess the frequency and characteristics of readmissions following ambulatory daycare otological surgeries.

## Materials and Methods

The retrospective, cross-sectional study was conducted in December 2024 at the Department of Otolaryngology and Head and Neck Surgery, Aga Khan University Hospital, Karachi, and comprised data of patients who underwent therapeutic ambulatory otological procedures, such as cochlear implantation, tympanoplasty, myringoplasty, mastoidectomy and stapedectomy/stapedotomy, between September 1, 2019, and October 1, 2024. Data was retrieved using non-probability consecutive sampling technique. The

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inclusion criteria related to all paediatric and adult patients who underwent otological surgeries with therapeutic intent as ambulatory daycare procedures.

Data of patients was excluded in case of missing medical records, and for patients with multiple Operation Room visits for contralateral side surgeries causing duplication.

As the study was a five-year audit, a formal sample size was not calculated. Data was collected using a standardised proforma by reviewing charts on tailored Google Forms.

Data was analysed using SPSS 23. Quantitative variables were reported as mean ± standard deviation or, where appropriate, as median with interquartile range (IQR). Frequencies and percentages were reported for categorical variables.

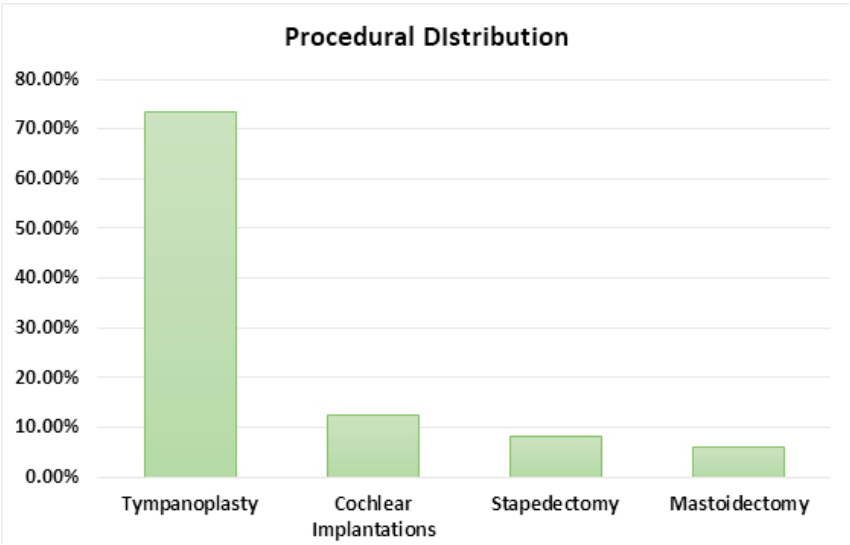


**Figure-1:** Distribution of procedure. Tympanoplasty included type I-V procedures as well as both endoscopic and microscopic procedures, while cochlear implantations included both unilateral and bilateral implantations.

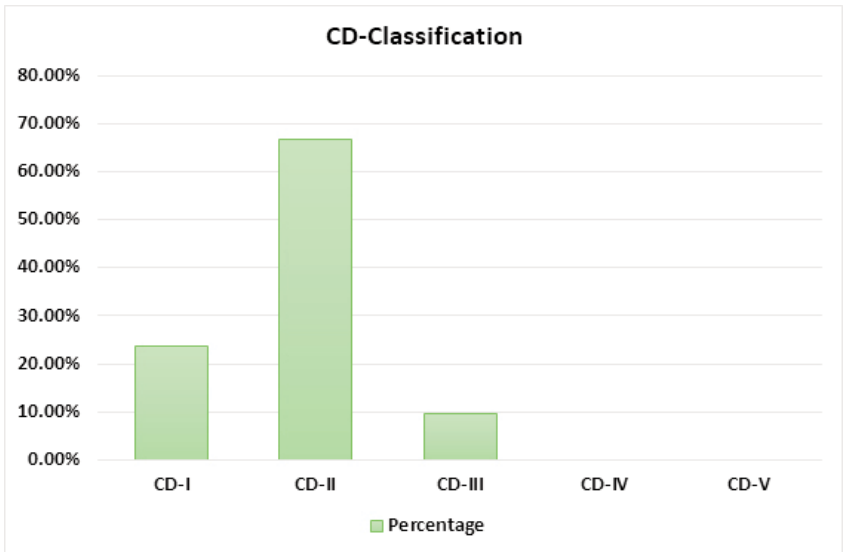


**Figure-1:** Distribution of procedure. Tympanoplasty included type I-V procedures as well as both endoscopic and microscopic procedures, while cochlear implantations included both unilateral and bilateral implantations.

## Results

Of the 825 patients with mean age 30.43±14.45 years, 433(52.5%) were male and 392(47.5%) were female. The most common procedure was tympanoplasty 605(73.3%), followed by cochlear implantation 104(12.6%), stapedectomies 67(8.1%) and mastoidectomy 49(6.1%) (Figure 1).

Majority of the patients 688(83.4%) had planned visits, while 63(7.6%) patients had unplanned emergency room (ER) or clinic visits. A total of 74(9%) of the patients had been lost to follow-up after the surgical intervention.

Among the 63(7.6%) unplanned cases, 42(66.67%) were classified as minor complications (Figure 2). Readmissions occurred within 10 days post-surgery in 62(98.4%) cases, with only 1(1.6%) patient experiencing a delayed complication in the shape of facial nerve paralysis that developed after three weeks of surgery. The patient was subsequently managed conservatively as outpatient with oral steroids and showed improvement.

1- The most common reasons for unplanned readmissions were wound care issues 34(53.9%), followed by local swelling/pain 7(11.1%) and bleeding 10(15.8%), discharging ear 6(9.5%), abscess or wound dehiscence 3(4.7%), and perioperative nausea and vomiting 3(4.7%).

## Discussion

Ambulatory surgeries are categorised as same-day discharges post-operatively. In resource-stricken countries, ambulatory surgeries can serve to alleviate the financial burden on healthcare systems. National numbers evaluating the rate of complications is an obvious gap in literature. A surrogate marker of this rate is unplanned postoperative visits. Ear surgeries are generally considered safe as ambulatory surgeries because there is no major impact on airway, and it is not associated with any systemic impact.[2] The biggest hurdle to national change is

hesitation, owing to rates of complications or unwanted re-admissions leading to patient dissatisfaction.[1,5,6]

In international studies, the rates of readmission have been quoted between 2.3% and 4.7%, but the visits were not specifically categorised. In a study, the rate of readmission overall was 5.2% (875/16,709)[4] compared to the 7.6% (63/825 patients) seen in the current study. Urinary retention/urinary tract infection (UTI) represented the most common diagnosis at readmission (10.6%), followed by otalgia (9.7%) and dizziness (9.1%).[4] The current data showed wound-care issues being the highest cause of patient discomfort, with 53.9% of the patients opting for an early revisit.

Clavien-Dindo classification (CDC) has been traditionally used as a measure of classification of postoperative adverse events.[7] Of the 63(7.6%) unplanned cases, iin the current study, 42(66.67%) were classified as having minor complications based on their CDC categorisation.

In the current study, 53.9% patients required additional information, suggesting effective measures aiding postoperative rehabilitation.

The current study has limitations sample size was not calculated. Besides, patient inclusion based on electronic health record coding meant atticotomies and combined approach procedures were included under the tympanoplasty category.

## Conclusion

Ambulatory daycare otological surgeries were found to be safe and reliable ways of postoperative patient management. The major reason for revisit was the lack of patient awareness regarding postoperative rehabilitation and wound care.

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**Conflict of Interest:** None.

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