

Surgical and Medical Approaches on Pediatric Recurrent Tonsillitis

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ABSTRACT

Aims of the study: This study explores the current trends, advancements, and controversies in managing this condition, providing insights into best practices for pediatric care.

Methodology: A cross-sectional, observational hospital-based research was performed on patients visiting ENT clinic complaining of pain in tonsillar area and who were diagnosed later with recurrent attacks of acute tonsillitis. Three hundred participants were approached with questions concerning their socio-demographic details.

Results: Male seven years old (20.7%) show highest percent, followed by 6 years (61 patients, 20.3%). In relation to symptom fever shown in 87.7%. 183 patients (61.0%) had more than three episodes of recurrent tonsillitis. Medical Treatment which accounts for 61% of the total while 39 % treated by tonsillectomy. The study indicates that complications were relatively rare, with bleeding being the most common complication reported among the sample.

Conclusion: this study provides a comprehensive overview of treatment modalities for tonsillitis, with a strong preference for medical management. Results are comparable with previous findings in the literature, reaffirming current trends in the management of recurrent tonsillitis in pediatric populations.

Keywords

Recurrent Tonsillitis, Tonsillectomy, Pediatric Tonsillitis, Surgical Approaches.

Introduction

Recurrent tonsillitis in pediatric populations is a common condition characterized by repeated episodes of inflammation of the palatine tonsils. It is associated with significant morbidity, including throat pain, fever, difficulty swallowing, and frequent school absenteeism, which impacts the quality of life for children and their families. The pathogenesis often involves bacterial or viral infections, with Group A Streptococcus being the most commonly implicated pathogen in bacterial cases [1].

Management strategies for recurrent tonsillitis have traditionally focused on two primary approaches: medical management and surgical intervention, particularly tonsillectomy.

Medical treatment often includes antibiotics for bacterial infections, with penicillin-based therapies being the first-line agents. Adjunctive treatments such as analgesics and anti-inflammatory medications are also widely used to manage symptoms [2].

However, the frequent use of antibiotics raises concerns about antimicrobial resistance and their potential side effects, leading to an increased interest in alternative strategies such as probiotics and immune-modulatory therapies [3].

Surgical intervention, specifically tonsillectomy, remains a definitive treatment option for children with recurrent tonsillitis who fail to respond to medical therapy. Advances in surgical techniques, including cold dissection, electrocautery, and coblation, have aimed to improve safety profiles, reduce postoperative pain, and enhance recovery times [4].

Despite its efficacy in reducing the frequency of infections, tonsillectomy is associated with risks such as bleeding, anesthetic complications, and long-term effects on immune function, warranting careful patient selection [5].

An evidence-based understanding of both medical and surgical approaches is critical to optimizing outcomes in children with recurrent tonsillitis.

Aims of the Study

This study explores the current trends, advancements, and controversies in managing this condition, providing insights into best practices for pediatric care.

Materials and Methods

Ethical Considerations

This research was approved by the Scientific and Ethical Research Committee, Nineveh Health Directorate, Ministry of Health Iraq with license No. 2025021. Moreover, verbal notified consent was obtained from all participants families.

Study Design

A cross-sectional, observational hospital-based research was performed in the time of June to September 2022 including all patients who visited the ENT Department in Al-Salam Teaching Hospital, suffering from chronic tonsillitis (300). Patients were seen by two ENT consultants, and diagnosis of tonsillitis was done in the ENT clinics using a head mirror, light source, and tongue depressors. Demographic data, clinical features and treatment modalities were reported in this study.

Study Population

Patients visiting ENT clinic complaining of pain in tonsillar area and who were diagnosed later with chronic tonsillitis (recurrent attacks of acute tonsillitis), during the research period who fit the research inclusion’s criteria were joined voluntarily.

Inclusion Criteria

The research inclusion criteria comprise both sex and age groups above 3 years to 12 years with chronic tonsillitis.

Exclusion Criteria

The study exclusion criteria comprise any participants with deficient investigations, unwill to share, systemically unfit and other ENT problems rather than tonsillitis.

Sample Size: 300 participants

Data Collection Procedure

Data were collected using a structured questionnaire. The participants were approached with questions concerning their socio-demographic details, and ENT-related complaints such as sore throat whilst the ENT professionals applied and reported clinical examinations, diagnosis and management.

Data Analysis

The patients’ data were processed statistically using the SPSS version 21. A descriptive statistical summarization was performed.

Results

Table 1 summarizes the demographic characteristics of the patient sample, including age, gender, and residency place.

Age Distribution

The age group with the highest number of patients is **7 years** (62 patients, 20.7% of the sample), followed by **6 years** (61 patients, 20.3%). The age group with the least number of patients is **10 years** (21 patients, 7.0%), and the age group **11 years** had 19 patients (6.3%).

Gender Distribution

The sample consists of **62.3% male patients** (187 patients) and **37.7% female patients** (113 patients), indicating a higher proportion of males in the sample.

Residency Place

Most patients come from **rural areas** (55.7% or 167 patients), while **urban area residents** make up 30.0% (90 patients) and **mixed area residents** constitute 14.3% (43 patients).

Table 1: Descriptive Analysis (Frequency) for Patient’s Sample. (Age, Gender and Residency Place).

Variables		No.	%
Age	4 Years	14	4.7
	5 Years	14	4.7
	6 Years	61	20.3
	7 Years	62	20.7
	8 Years	53	17.7
	9 Years	56	18.7
	10 Years	21	7.0
	11 Years	19	6.3
Gender	Male	187	62.3
	Female	113	37.7
Residency Place	Urban Area	90	30.0
	Rural Area	167	55.7
	Mixed Area	43	14.3

Symptoms Distribution: Figure 1, presents the frequency of various symptoms in the patient sample

🏠 **Sore Throat:** 211 patients (70.3%) experienced sore throat, while 89 patients (29.7%) did not report it.

🏠 **Fever:** 263 patients (87.7%) reported fever, while 37 patients (12.3%) did not.

Odynophagia or painful swallowing: 149 patients (49.7%) had this symptom, and 151 patients (50.3%) did not.

Red Swollen Tonsils: 246 patients (82.0%) had signs of redness, while 54 patients (18.0%) did not.

Jugulo Digastric Lymph Node : 77 patients (25.7%) exhibited this symptom, whereas 223 patients (74.3%) did not.

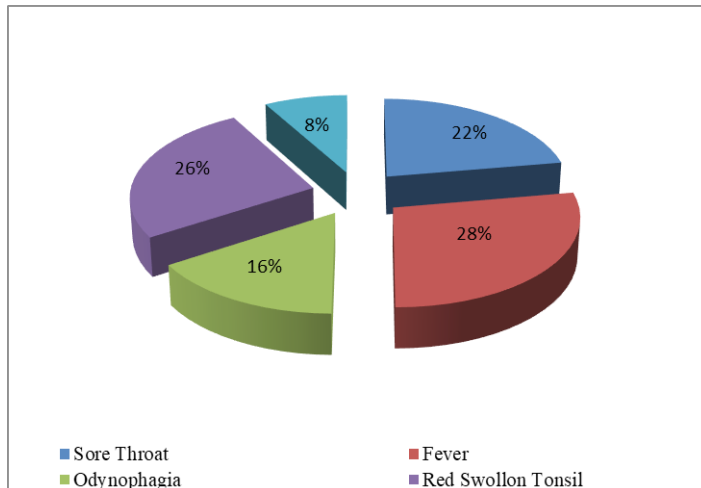


Figure 1: Symptoms Frequencies in Patient's Sample.

Figure 2 describe details the frequency of recurrent tonsillitis in the patient sample.

- **Frequency of Recurrent Tonsillitis > 7 Episodes:** 65 patients (28.3%) had more than seven episodes of recurrent tonsillitis.
- **Frequency of Recurrent Tonsillitis > 5 Episodes:** 52 patients (17.3%) had more than five episodes of recurrent tonsillitis.
- **Frequency of Recurrent Tonsillitis > 3 Episodes:** 183 patients (61.0%) had more than three episodes of recurrent tonsillitis.

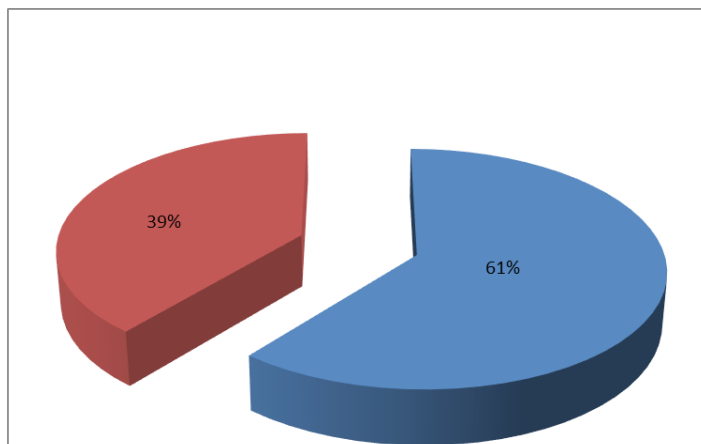


Figure 2: Frequency of Recurrent Tonsillitis in sample.

Based on the figure 3, here's the result for the treatment modalities:

- **Medical Treatment (Medical TT):** 202 patients, which accounts for **67.3%** of the total.
- **Tonsillectomy:** 98 patients, which accounts for **32.7%** of the total.
- **Tonsillotomy:** 0 patients, which accounts for **0%** of the total.

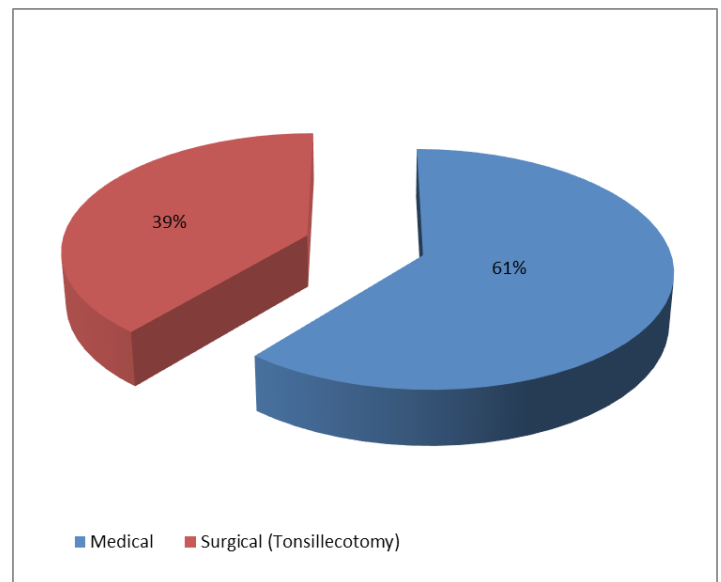


Figure 3: Treatment Plane for Patients.

Table 2 provides the data on complications among patients

- **Bleeding:** 16 patients (5.3%) experienced bleeding as a complication, while 284 patients (94.7%) did not.
- **Injury:** 2 patients (0.7%) experienced injury, while 298 patients (99.3%) did not.
- **Infection:** 5 patients (1.7%) had infections as a complication, while 295 patients (98.3%) did not.

This data indicates that complications were relatively rare, with **bleeding** being the most common complication reported among the sample.

Table 2: Complications recorded in Patients Sample.

Complications	No.	%
Bleeding	16	5.3
Injury	2	0.7
Infection	5	1.7
Tonsiller Remnant	0	0

Discussion

Pediatric Recurrent Tonsillitis refers to the frequent inflammation of the tonsils, which can significantly affect the child's health and quality of life. It can be a challenging condition, and management usually involves both medical and surgical approaches. Pediatric recurrent tonsillitis requires a tailored approach based on the severity and frequency of episodes. Medical management with antibiotics and supportive care should be the first step, while surgical options like tonsillectomy are appropriate for children with frequent, severe, or complicated infections. Thorough clinical assessment, appropriate interventions, and careful follow-up are essential to providing optimal care for these patients.

Demographic Characteristics and Treatment Choice

As shown in the demographic breakdown, the patient sample predominantly consisted of **male patients (62.3%)**, with a higher representation of those from **rural areas (55.7%)**. The age group

with the highest number of patients was **7 years (20.7%)**, followed closely by **6 years (20.3%)**. These findings are consistent with other studies on pediatric tonsillitis, where children aged 6 to 8 years are typically most affected [6].

The higher prevalence of medical treatment (202 out of 300 patients) among these younger patients could reflect the tendency to initially manage recurrent tonsillitis with antibiotics and other medical treatments, reserving surgery for more severe cases.

The 2021 study investigated the prevalence and demographic characteristics of chronic tonsillitis patients. It revealed a higher prevalence among males (67.5%) and children aged between 11-20 years (32.4%), aligning with your study's findings [7].

Symptoms and Recurrent Tonsillitis

The symptoms of the patients in this study were largely consistent with those reported in prior research on tonsillitis. **Sore throat (70.3%)** and **fever (87.7%)** were the most common symptoms, while **odynophagia (49.7%)** and **red swollen tonsils (82.0%)** were also prevalent.

An overview of tonsillitis epidemiology indicated that 15-30% of sore throats in children are due to bacterial adeno-tonsillitis. The incidence varies by socioeconomic status, with lower incidence in higher-income groups [8].

The frequency of **recurrent tonsillitis** is also in line with existing studies, with near **40%** of patients having experienced more than **five to seven episodes** of tonsillitis, which often correlates with the decision to proceed with a tonsillectomy in persistent cases [6]. This highlights the importance of recurrent infection episodes in determining treatment modality, especially when episodes exceed five or more in a year.

Complications and Treatment Outcome

Complications following treatment were relatively rare in the study sample, with **bleeding (5.3%)** being the most common complication, followed by **infection (1.7%)** and **injury (0.7%)**. These results are consistent with findings from other studies on tonsillectomy and medical management, which report bleeding as the most common complication following tonsillectomy, though it remains relatively rare in well-performed surgeries [9]. The low incidence of complications in this study suggests that both medical treatment and tonsillectomy are generally well-tolerated among pediatric patients, with careful management minimizing risks.

Comparison of Treatment Modalities and Patient Demographics

The treatment modalities employed in this study, as summarized in Figure 3, reveal that **61 % of patients** received medical treatment, while **39 % underwent tonsillectomy**, and **0% underwent tonsillotomy**. This treatment distribution aligns with the findings presented in previous literature on tonsillitis management, highlighting the preference for conservative medical treatment over surgical interventions in many cases. The absence of tonsillotomy

as a treatment choice may reflect current medical practices, where tonsillectomy is more commonly recommended for patients with recurrent tonsillitis or significant symptoms, as noted in studies by [10]. These studies also emphasize the growing trend toward non-invasive treatment options like medical management when appropriate.

A 2021 study compared tonsillectomy and tonsillotomy in treating recurrent acute tonsillitis. The research highlighted that while tonsillectomy remains the standard surgical approach, tonsillotomy is gaining attention as a potential alternative. However, long-term benefits and harms of tonsillotomy compared to tonsillectomy are still unclear [11].

A Systematic review, published in 2022, examined various treatment options for recurrent acute tonsillitis. The review found that conservative treatments, such as antibiotics, are effective in managing acute episodes. For recurrent cases, surgical intervention like tonsillectomy may be considered based on patient needs [12].

A 2023 review discussed the management of recurrent tonsillitis and peritonsillar abscesses. It emphasized that recurrent tonsillitis is often managed with antibiotics and that tonsillectomy may be a treatment for recurrent cases [13].

A 2023 study in Saudi Arabia found that children accounted for 74.7% of tonsillitis cases, with a male predominance (60%). These findings align with the study's demographic breakdown [14].

A 2023 article discussed the diagnosis and management of tonsillitis. It found that treatment for recurrent tonsillitis includes medical management (antibiotics), or surgical management with tonsillectomy [15]. In another study compared the effectiveness of azithromycin and benzathine penicillin in treating recurrent tonsillitis, with both antibiotics being equally effective, supporting the medical management approach used in this study [16].

Conclusion

This study provides a comprehensive overview of treatment modalities for tonsillitis, with a strong preference for medical management (61 %) and a moderate number of tonsillectomy cases (39 %). The age distribution and gender distribution align with those found in other studies on pediatric tonsillitis, with higher rates in younger children and a male predominance. The symptom distribution further supports the choice of treatment, with a high proportion of patients experiencing symptoms like sore throat and fever. Additionally, the low complication rate highlights the effectiveness and safety of the treatment strategies employed. These results are comparable with previous findings in the literature, reaffirming current trends in the management of recurrent tonsillitis in pediatric populations.

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