

# Actinomyces In The Tonsils: Hospital Universiti Sains Malaysia Experience

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## Abstract

**Introduction :** Tonsillectomy is performed for several indications. Nevertheless, the specimen sent for histological examination usually reveals expected result. Incidental findings such as bacterial colony may have some input for a better understanding of tonsillar disease.

**Objective :** This study was conducted to establish the incidence of Actinomyces in the tonsils of patient undergoing tonsillectomy or adenotonsillectomy and to evaluate its role in clinical tonsillar disease.

**Results :** 197 patients were recruited in the study. 43% of the specimens showed positive for Actinomyces. There is no association between the colonies with the clinical diagnosis.

**Conclusion :** Actinomyces colony in tonsil specimen is more of incidental findings. Their presence does not change the management of the patient post operatively.

## INTRODUCTION

Tonsillectomy is the most common surgical procedure in Otorhinolaryngology setting. It is defined as a surgical excision of palatine tonsils. The most common indications for tonsillectomy are the episodes of recurrent tonsillitis or tonsillar hypertrophy causing obstructive symptoms such as snoring and sleep apnea.

In some centers performing tonsillectomy, regardless of the indications, tonsils specimens are sent routinely from the operation theatre to the pathology laboratory for histopathological examination because of the concern that the tonsil might harbor malignancy. However, studies have demonstrated that sending routine tonsil specimens following tonsillectomy operation for histopathological examination are not cost-effective [1].

Presence of bacterial colony, foreign body or other artifacts in the tonsil specimens are more of incidental findings. Usually their presences do not change the management of the patient. However, Actinomyces colony is relatively more constant revealed on the histological examination of tonsil specimen.

## OBJECTIVE

The objective of the study was to establish the prevalence of Actinomyces in the tonsils of patient undergoing tonsillectomy or adenotonsillectomy and to evaluate its role in clinical tonsillar disease.

## METHODOLOGY

This is an observational study.

Subjects were selected from those who had undergone tonsillectomy in Hospital Universiti Sains Malaysia. Operation and histological examination were done as routinely practiced. Reports were reviewed and data were analyzed by using SPSS version 12.

## RESULTS

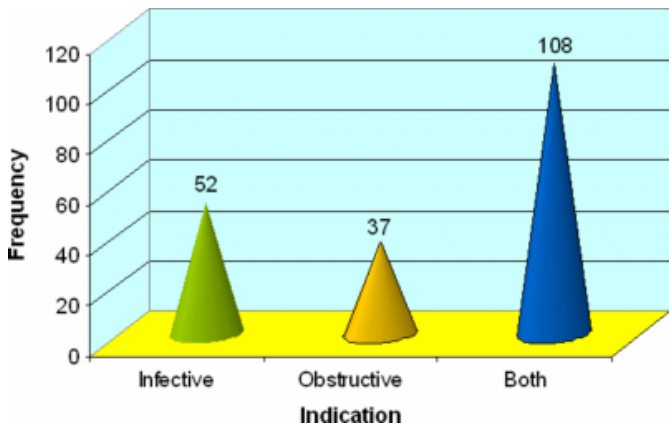
197 patients were included in this study from August 2005 to January 2007. The age of the patients in the study population ranged from 2 to 50 years old. All of them underwent tonsillectomy indicated by recurrent or chronic tonsillitis and obstructive symptoms such as snoring or sleep apnea.

The most frequent indication for tonsillectomy in our set up

was infective cause. It was followed by tonsillar hypertrophy causing obstructive symptoms. Actinomyces colonies were found in some of the sections.

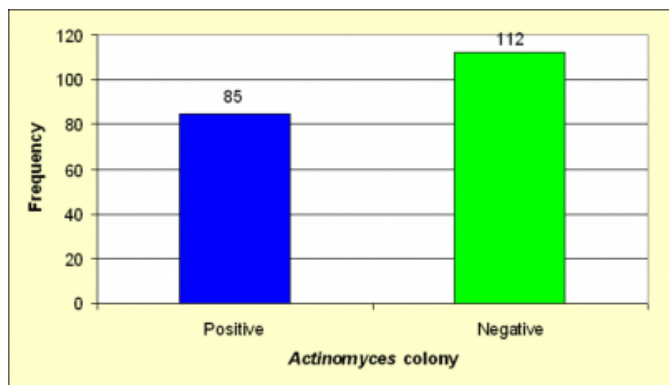
**Figure 1**

Figure 1 : Indications for tonsillectomy



**Figure 2**

Figure 2: Prevalence of colonies identified



Pearson Chi-Square p value was taken and there is no association between Actinomyces colonies and recurrent tonsillitis (  $p=0.064$  ) or tonsillar hypertrophy (  $p=0.639$  ).

**DISCUSSION**

Actinomyces is a genus of gram-positive rods, which are strict or facultative anaerobes <sub>2</sub> . The colonies form fungus-like branched networks of hyphae. Many Actinomyces species are opportunistic pathogens of humans and other mammals, particularly in the oral cavity. Except for Actinomyces bovis, all species are normal inhabitants of human oral cavity. Precipitating factors believed to lead to disease in the cervical facial region include dental caries, dental manipulations and maxillofacial trauma <sub>3</sub> . Mucosal disruption of the tonsil is required for the bacteria to become infective in the tonsil.

Incidental findings of bacterial colonies specifically Actinomyces in the tonsil specimens were expected. This is based on the data from previous study that found Actinomyces in between 1.8 % and 37.0% of resected tonsils

4 .

A study was conducted to identify the presence of this organism and its role in promoting tonsillar hypertrophy in sleep disordered breathing patient ( Toh ST, 2007). The prevalence of tonsillar Actinomyces colonization was higher in patients who had undergone tonsillectomy for sleep-disordered breathing ( 44.1 % ) than in patients who had undergone tonsillectomy for recurrent tonsillitis ( 33.3 % ). However, the presence of Actinomyces does not indicate active disease. Although Actinomyces colonization is more prevalent in patients with sleep-disordered breathing, it does not contribute to tonsillar hypertrophy or to recurrent tonsillitis <sub>5</sub> .

Similarly shown our study that these colonies were identified in both patients with recurrent tonsillitis and obstructive tonsillar hypertrophy. The prevalence was 43.1 % . It was slightly higher than the data from previous study. This is because in the histopathological reports, not all specimens of the right and left tonsil from each patient were reported exclusively. Some of them summarized the findings of both sides of tonsils together, as they share almost the same pathology. The colonies identified were not specifically mentioned either present in both specimens or only on one side. Based on this, we have to count both of the specimens as positive.

In addition, majority of our patient were in paediatric age group. There was evidence that there may be correlation between Actinomyces colonisation and age with Actinomycosis being more common in older children <sub>6</sub> .

As for other bacteria, they need to be cultured to make their presence identifiable on microscopic examination.

**CONCLUSION**

Findings of Actinomyces colonies are more of incidental observation. The management of patients post-operatively is not changed regardless of the presence of the colonies.

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