

Paradise Criteria for Tonsillectomy – Its Relevance in Rural Indian Set up

Dr S Sri Krishna Prakash¹, Dr D R K L N Raju²

¹(Department of Otolaryngology, NRI Institute of Medical sciences /NTR University of Health Sciences, Sangivalasa India) ² Corresponding Author (Department of Otolaryngology, GVP Institute of Health Care and Medical Technology/ NTR University of Health Sciences, Visakhapatnam, India)

Abstract:

Background: Across the world, tonsillectomy is one of the most commonly performed operations in the otolaryngology department especially in the pediatric age group for recurrent tonsillitis for which paradise criteria is used as guidance to determine the candidacy. Paradise criteria take various factors into consideration to determine if the indication exists for tonsillectomy. Taking paradise criteria into consideration, various otolaryngologists' associations and boards across the world like American association of otolaryngology etc. have drawn guidelines to help clinicians in identifying candidacy for tonsillectomy. But these criteria cannot be used in rural Indian setup like our institutions which mainly cater health care needs to rural population. Hence where paradise criteria are not relevant we developed a clinical method to determine the candidacy for tonsillectomy. In this study we subjected 100 tonsils specimens of patients who underwent tonsillectomy based on clinical criteria and obtained the results to check the reliability of our methodology in determining the candidacy for tonsillectomy. There was no such study done before hence we choose to do this study

Materials and Methods: In this prospective study done from December 2016 to June 2017, 100 tonsils specimens of patients who underwent tonsillectomy were subjected to histopathological examination. Patients belonged to both the sexes with age between 6 to 25 years from the rural background. All the patients were listed for tonsillectomy based on the clinical criteria and all of them did not qualify the paradise criteria for tonsillectomy.

Results: All 100 tonsil specimens have shown histopathological features suggestive of chronic tonsillitis.

Conclusion: Our clinical method of identifying the candidacy for tonsillectomy has been proved as an useful alternative in daily practice in our rural setup where most patients do not qualify the paradise criteria due to various reasons mentioned further in the discussion section of the paper

Key Word: Paradise criteria, Tonsillitis, Tonsillectomy

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I. Introduction

Recurrent tonsillitis is a very prevalent disease¹ which mainly affects the paediatric population with high incidence both in the developed and developing nations. Every year many children undergo tonsillectomy and this is one of the most commonly performed operations in the otolaryngology department. The palatine tonsils are lymphoid structures present in the oropharynx which provide protection and immunity from the harmful oropharyngeal flora including streptococcus, pneumococcus, klebsiella and E.coli. Thus, the functioning of palatine tonsils is similar to GALT (Gut associated lymphoid tissue) present in the digestive tract. To determine the candidacy for tonsillectomy paradise criteria² is used worldwide and guidelines have been drawn by various associations and board of otolaryngologists^{3,4}. But in Indian rural setup, patients most often fail to meet the paradise criteria or the guidelines and hence clinicians rely on clinical findings to determine the indication for tonsillectomy. In our institutions, we follow a clinical method to determine the candidacy for tonsillectomy. The current study aims to obtain histopathological evidence in support of our clinical method.

II. Material And Methods

A sample size of 100 tonsils specimens from patients who underwent tonsillectomy has been chosen between December 2016 and July 2017. All the specimens have been sent for histopathological examination. All the patients attended the ENT department at Anil Neerukonda Hospital, NRI institute of Medical sciences, which is a tertiary hospital attached to the Post Graduate medical college which caters to the health care needs of rural population of 50 villages. The age group of patients ranged from 6 to 25 years with male to female

distribution of 47:53. The mean age is 11, the Median is 10 and the Mode is 9. Standard deviation is 4.34 with standard error of 0.34. The study population was drawn from consecutive patients who underwent tonsillectomy with

Inclusion criteria:

1. Age group – 6 to 25
2. Both males and females
3. Patients who failed to meet paradise criteria.
4. patients who fulfilled our criteria of clinical method.

Exclusion criteria:

1. Any patient beyond the age range of 6 to 25
2. Patients who met paradise criteria.

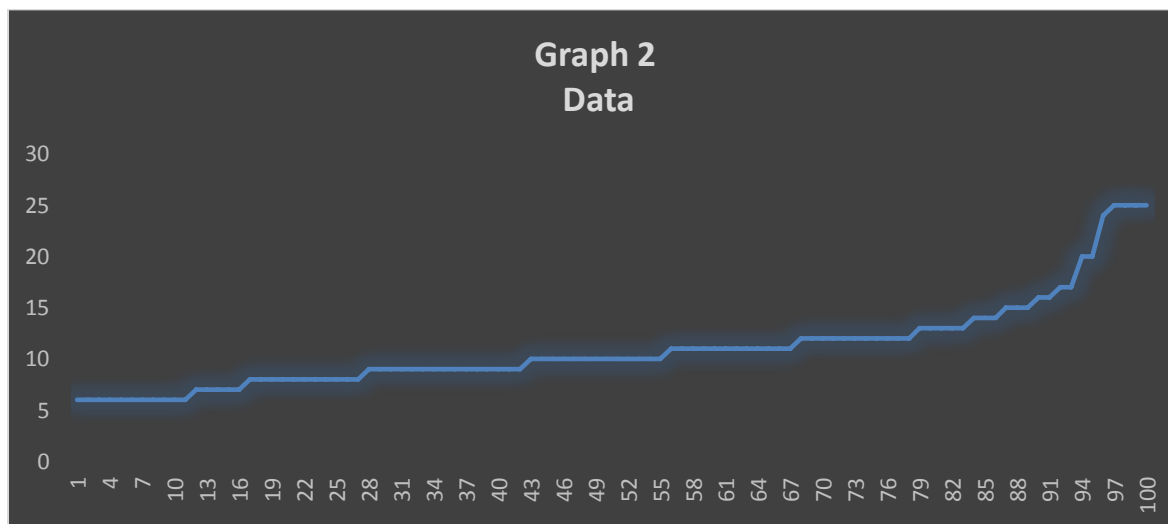
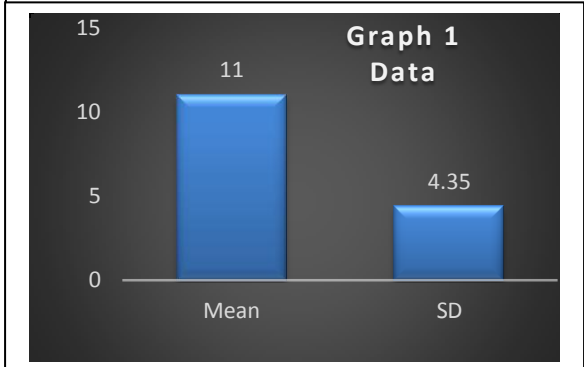
Procedure methodology

Institutional ethics committee consent has been obtained and all 100 patients’ specimens have been sent to departments of pathology and subjected to histopathological examination at NRI institute of medical sciences

Statistical analysis:

The statistical data of all 100 patients is as shown in the table 1. The mean age of the patients is 11, with median of 10, mode 9 and standard deviation of 4.35. The age range of patients is 6 yrs to 25 years. The mean and standard deviation are shown in graph 1 and age wise distribution of data is shown in graph 2

Table 1	
Mean	11
Standard Error	0.434613
Median	10
Mode	9
Standard Deviation	4.346135
Sample Variance	18.88889
Kurtosis	3.211335
Skewness	1.69648
Range	19
Minimum	6
Maximum	25
Sum	1100
Count	100
Largest	25
Smallest	6
Confidence Level (95.0%)	0.862367



III. Result

All 100 specimens sent for histopathological examination have shown features suggestive of chronic tonsillitis

IV. Discussion

The paradise criteria are adopted across the world by Otolaryngologist to determine the indication for Tonsillectomy. Paradise criteria are an evidence based criteria that has been evolved with a primary purpose of providing guidance to clinicians to check candidacy of patient for tonsillectomy.

The American association of Otolaryngology and Head and Neck surgery has written guidelines for the same purpose and also for optimizing patient care in the peri-operative period and to provide improved counseling & education to the families of children undergoing tonsillectomy.

The paradise criteria⁷ advocate the following factors in determining the candidacy of child.

a) **Frequency criteria** : The minimum number of tonsillitis episodes required to do tonsillectomy in a child are,

1. 7 episodes in the past 1 year.
2. Minimum of 5 episodes per year for the past 2 years.
3. Minimum of 3 episodes per year for the past 3 years.

b) **Episode criteria**: Each episode of tonsillitis must include one of the following in addition to sore throat.

1. Temperature of 38.30C
2. Tender cervical adenopathy or cervical lymph nodes >2cm in size.
3. Tonsillar exudates.
4. A positive culture showing group A Beta hemolytic streptococcus.

c) **Treatment criteria**: Each episode of tonsillitis which qualifies the episodic criteria should have been treated with standard protocol at empirical dosing of antibiotics.

d) **Documentation criteria**: Which includes record of each episode of tonsillitis with above criteria or observation by a trained & qualified clinician for at least 2 consecutive episodes that meet the above criteria over a period of 12 months

In rural Indian setup due to various factors including patient's ignorance, availability of the over the counter medications, alternative systems of medicine and other local methods involving quackery most often patients do not receive neither proper treatment nor the episodes of tonsillitis are properly recorded. Although there is a robust three tier health care system is in place in India because of the mentioned reasons and poor patient record system the patients most often do not meet paradise criteria to undergo tonsillectomy.

Hence we rely on clinical findings apart from the vague history with which the patients present to our Otolaryngology department. The clinical signs as shown in figure 1. include

- Hypertrophied, unhealthy more than grade 2 tonsils
- Presence or absence of non tender jugulo-digastric lymph nodes >2cm in size
- Positive Irwin-Moore's sign (Exudation of debris from the tonsillar pits on pressing anterior faucial pillar against the tonsillar parenchyma)
- Hyperemia of anterior faucial pillars

Figure 1



In our prospective study of 100 patients who attended our ENT and Head & Neck surgery department OPD at NRI Medical sciences come from a rural background and underwent tonsillectomy. we observed that they have not strictly qualified for tonsillectomy according to paradise criteria and we have chosen the above clinical finding to determine the candidacy for tonsillectomy. All the specimens are sent for histopathological examination and all the specimens have invariably shown feature suggestive of chronic tonsillitis thus supporting the clinical method we chose as an alternative to paradise criteria in an Indian rural set up like ours.

V. Conclusion

In conclusion, although our method is a working alternative to the paradise criteria in evaluating candidacy for tonsillectomy, we feel that this is still not the best way and in no shape can substitute the paradise criteria. Also

We propose that, the government provides a well connected primary, secondary & tertiary health care systems with appropriate maintenance of medical records and referral system.

A strict vigilance on pharmacies is required in dispensing medications to keep in check of over the counter prescription of medications.

A large multi centric study on the same subject is needed to close the gaps and evolve better criteria which can be followed universally to identify the candidacy for tonsillectomy and avoid unnecessary and unwarranted operations..

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