

# Trismus Assessment In Tonsillitis And Quinsy: Does It Help?

S Duvvi, H Beer, L Thomas, C Webb

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## Abstract

**Objective:** To assess whether the degree of trismus in quinsy is quantifiable and used in the diagnosis of quinsy in patients with acute sore throats.

**Design:** Prospective observational study

**Setting:** Single secondary level Otolaryngology care

**Participants:** Patients presenting to the department of ENT with acute sore throats from October 2003 to April 2004. Inclusion criteria- all patients with acute tonsillitis, peritonsillitis and quinsy. Exclusion criteria - children below 16 years of age. Twenty-one patients were included in the study. Six had acute tonsillitis, there were eight with quinsy, and seven had peritonsillitis. The inter-incisor distances of the patients were measured at the time of initial assessment.

**Results:** The mean inter-incisor distance in the tonsillitis group was 32.67mm with a 95% confidence interval (CI) being 27.3mm to 38.02mm. The mean inter-incisor distances in the quinsy and peritonsillitis groups were 19.88mm (95% CI - 15.05mm to 24.7mm) and 22.73mm (95% CI- 13.39mm to 32.07mm) respectively. The difference between the mean inter-incisor distances in patients with tonsillitis and quinsy was 12.78mm, which was statistically significant ( $p < 0.01$ ,  $t = 3.455$ ). The 99% confidence interval for the difference between means was from 3.24mm to 22.3mm.

**Conclusions:** Patients with quinsy have significant reduction in their inter-incisor distance when compared to acute tonsillitis. Those with inter-incisor distance of more than 25mm are unlikely to have quinsy.

## HOW THIS FITS IN

It is often difficult to distinguish quinsy, peritonsillitis and a bad attack of acute tonsillitis in the primary care setting and due to this, unnecessary delay in referring or inappropriate referrals can be made. Often the differentiating clinical feature is the associated trismus in quinsy, which can be used to aid in diagnosis. In this article we have tried to quantify trismus so that it is easier for the primary care physician and for those unfamiliar with these infections to reach a correct diagnosis.

## INTRODUCTION

Sore throats are one of the most common reasons for visiting a General Practitioner (GP) in the UK. There is some concern amongst GPs as to which patients have quinsy and require referral to the local ENT department for drainage and

intravenous antibiotics. One of the major distinguishing features between simple tonsillitis and quinsy is the presence of trismus in patients with quinsy. This trismus can be quantified by measuring the inter-incisor distance. Being able to confidently diagnose quinsy will avoid unnecessary delay and inappropriate referrals.

## METHOD

A prospective observational study was conducted on patients with sore throats that were referred acutely to the ENT department at Warrington Hospital, Cheshire from October 2003 to April 2004. Inclusion criteria was 1) all patients suffering with acute tonsillitis, peritonsillitis or quinsy. Exclusion criteria was 1) children below 16 years of age.

Patients were stratified according to diagnosis (i.e. acute

tonsillitis, quinsy or peritonsillitis) and the inter-incisor distance was measured with Vernier callipers. All patients with suspected quinsy (based on clinical features) underwent incision and drainage under local anaesthesia. Those with pus were categorised as quinsy and those without pus were classified as peritonsillitis. All patients were treated with intravenous antibiotics for a minimum of 24 hours or until their symptoms settled sufficiently to allow safe discharge home. All patients had an infectious mononucleosis (IM) screen done.

The stratified data was entered onto a spreadsheet (Microsoft Excel) and statistical analysis performed using unpaired t test.

### RESULTS

Twenty-one patients were included in the study. Six patients had acute tonsillitis, eight were diagnosed to have quinsy, and seven had peritonsillitis.

The median age was 31.3 years, range being 16 to 48 years. All patients stayed a minimum of 24 hours in the hospital. Average duration of stay was 1.8 days. None of the patients had known temperomandibular joint disorders or other conditions, which could cause trismus such as radiation therapy or previous surgery to the area. Patients with acute tonsillitis were given intra-venous benzyl penicillin and others were given metronidazole in addition to benzyl penicillin. One patient with allergy to penicillin was given clarithromycin. Two patients who were already on oral penicillin were administered co-amoxiclav intravenously. Two patients with acute tonsillitis had positive IM screen test.

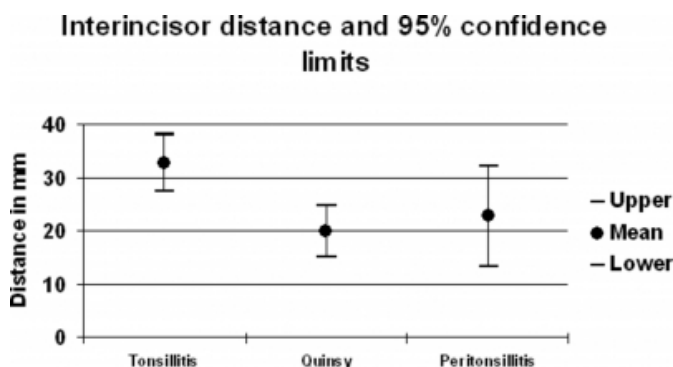
The mean inter-incisor distance in the tonsillitis group was 32.67mm with a 95% confidence interval (CI) from 27.3mm to 38.02mm. While the mean inter-incisor distances in the quinsy and peritonsillitis groups were 19.88mm (95% CI – 15.05mm to 24.7mm) and 22.73mm (95% CI- 13.39mm to 32.07mm) respectively. (Graph 1)

The difference between the mean inter-incisor distances in patients with tonsillitis and quinsy was 12.78mm, which was statistically significant ( $p < 0.01$ ,  $t = 3.455$ ). The 99% confidence interval for the difference between means was from 3.24mm to 22.3mm.

There was no significant difference between the quinsy and peritonsillitis groups or the peritonsillitis and tonsillitis groups.

**Figure 1**

Graph 1



### DISCUSSION

In the present study it has been shown that patients with quinsy have significantly more trismus than those with simple tonsillitis. There was no significant difference in degree of trismus between the quinsy and peritonsillitis groups, and therefore trismus measurement cannot exclusively diagnose quinsy. Though there are other clinical features differentiating between acute tonsillitis and quinsy or peritonsillitis, often it is difficult to examine the throat in such patients in the primary care setting. Hence assessing trismus could greatly aid the GP in reaching a diagnosis.

Quinsy is the formation of an abscess in the peritonsillar space. It occurs in patients who have tonsillitis, but with the spread of infection beyond tonsils. Because of its proximity to the parapharyngeal musculature there is associated spasm particularly of the pterygoid muscles. This results in limitation of mouth opening, which is termed trismus. The normal mouth opening in young adults was shown to be 42-47mm. <sup>1</sup> Therefore the patients with tonsillitis in the present study did have some degree of trismus which has not been so far reported.

Brodsky et al <sup>2</sup> found no difference in inter-incisor distance in patients with peritonsillitis or quinsy at initial presentation, but after 24 hours of intravenous antibiotics the patients with peritonsillitis had less trismus than those in the quinsy group. However no patients underwent incision and drainage in her study.

The main drawbacks with this study are the relatively small number of patients in each group (but despite this statistical significance was still achieved). If there were more patients in each group, the confidence intervals may have been closer. There may also be bias in the study population by the fact that they were all deemed severe enough to warrant referral from their GPs or the Accident and Emergency

department. Patients with less severe infection were not seen.

#### Conclusion

Patients with simple tonsillitis have an inter-incisor distance significantly greater than those with quinsy and if the inter-incisor distance is greater than 25 mm (approximately one inch) the patient is unlikely to have quinsy. This fact can help the General Practitioners and others without specific ENT training in the diagnosis of a patient presenting with acute sore throat.

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#### CORRESPONDENCE TO

S K Duvvi Flat 4 158 Wigan lane Wigan WN1 2LA Phone (Mobile) 07717298346 (Home) 01942773502 E mail: skduvvi@aol.com

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**Author Information**

**S. Duvvi, MRCS**

Department of Otolaryngology/Head and Neck Surgery, Warrington General Hospital

**H. Beer, MRCS**

Department of Otolaryngology/Head and Neck Surgery, Warrington General Hospital

**L. Thomas, FRCS**

Department of Otolaryngology/Head and Neck Surgery, Warrington General Hospital

**C. Webb, FRCS**

Department of Otolaryngology/Head and Neck Surgery, Warrington General Hospital