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Clinical Otolaryngology

## What is the natural history of patients waiting for tonsillectomy during a global pandemic?

### **Introduction**

Tonsillectomy is the most common elective procedure undertaken by (ENT) surgeons within the UK (1). The commonest indications in adults are recurrent tonsillitis and recurrent quinsy (1,2). Tonsillitis can impact on quality of life with throat pain, missed days of education/work and missed social commitments causing low mood. Following implementation of SIGN guidelines, tonsillectomy rates have decreased with a corresponding increase in emergency admissions with tonsillitis and its sequelae (3).

During the pandemic in the UK all non-urgent elective operations were cancelled to increase capacity for COVID-19 patients. The Scottish government target for day case treatment from decision to treat is 12 weeks (4). However currently the waiting time for day case tonsillectomy locally is 78 weeks and patients are still being referred to the hospital with recurrent tonsillitis. Pre-pandemic, 1 in 8 patients did not attend for their tonsillectomy in our centre, which has a resource implication given the cost of day case tonsillectomy of £1416 (5).

Woolford et al (6) found 27% of paediatric patients no longer required tonsillectomy after nine months on the waiting list. It has been shown that social distancing measures during the first lockdown decreased the frequency of episodes of recurrent tonsillitis in the paediatric population, but most parents wished to proceed with elective tonsillectomy (7).

The aims of this paper were; to assess the natural history of adult SIGN compliant tonsillitis patients awaiting tonsillectomy and assess patients' attitudes to tonsillectomy in the context of a global pandemic.

### **Methods**

This study is reported according to the SQUIRE guidelines for quality improvement reporting.

#### *Participants*

Adult patients waiting 12 weeks or more were identified from the tonsillectomy waiting list.

#### *Design & setting*

Patients were invited to take part in a telephone clinic to review their symptoms and place on the waiting list between April to May 2021. Those who failed to attend remained on the waiting list. Patients were informed the decision to stay on the waiting list would be theirs, regardless of answers given.

#### *Outcome measures*

A questionnaire was designed to include questions about their tonsillitis since being placed on the waiting list, incorporating the TOI-14(8) to assess the throat-specific quality of life over the preceding six months. If the patient wished to be removed from the waiting list, the reason(s) for

this were recorded. The patients' feelings regarding having an operation during the pandemic were recorded by asking them to pick from three statements.

### *Ethical considerations*

Research ethics advice was sought using the online tool from the NHS health research authority and Medical research council (<http://www.hra-decisiontools.org.uk/research/>); formal research ethics committee approval was not required.

### *Analysis*

Data was anonymised and collated in Microsoft Excel and Graphpad Prism. Mann-Whitney U tests were used to compare groups and Chi-square test for association was used to assess episodes of tonsillitis over different time periods.

## **Results**

### *Patient participation*

One hundred and thirty-six patients were invited to take part, of which 118 completed the questionnaire, giving a response rate of 86.8%.

### *Demographics*

Mean age of participants was 25 years old (range 16-64). Eighty-four patients (71.2%) were female and 34 were male (28.8%), giving a M:F ratio of 1:2.47.

### *Impact on waiting list*

Mean time on the waiting list was 55 weeks (range 16-108 weeks). Ten patients (8.5%) removed themselves from the waiting list. Multiple reasons could be given - the most common reason given was symptom resolution in nine patients, followed by no longer wishing to have a tonsillectomy in nine patients. COVID-19 was not a factor in any patient removing themselves from the waiting list.

### *TOI-14 score*

Mean total TOI score in those patients remaining on the waiting list was 25.67 (range 0-67, SD 15.9), compared with those removed from the waiting list who had a mean score of 4 (range 0-13, SD 4.6). This was statistically significant ( $p < 0.0001$ ). The differences between the two groups is shown per question item in Table 1.

### *Episodes of tonsillitis and antibiotic usage*

Eighty-five patients (72%) had at least one episode of tonsillitis since being placed on the waiting list, whereas 33(28%) had no episodes. Eighteen patients (15.2%) had seven or more episodes of tonsillitis in this period. Seventy-two (61%) required antibiotics for tonsillitis during this time.

A chi-squared test was performed to assess relationship between number of episodes of tonsillitis and year; this was statistically significant ( $p < 0.001$ ). The number of episodes of tonsillitis per year and the output from the chi-squared test is shown in Figure 1 and Table 2.

#### *Hospital admissions*

Six (5%) patients were admitted to hospital with tonsillitis/quinsy since being placed on the waiting list. Sixteen patients (13.5%) were admitted in 2020, compared with 18 (15%) in 2019 and 12 (10.2%) in 2018.

#### *Satisfaction with information regarding tonsillectomy*

One hundred and six patients (89.8%) were happy with the amount of information they had been given previously regarding tonsillectomy. Twelve (10.2%) required a refresher during the consultation, six of these were referred following admission to the ward.

#### *Concerns regarding COVID-19 pandemic and admission to hospital*

Sixty-eight patients (57.6%) indicated they were not concerned about COVID-19 with regards to admission to hospital. Eleven (9.3%) were concerned about catching COVID-19 themselves, whereas 52 (44.1%) indicated their biggest concern was passing COVID-19 to loved ones.

### **Discussion**

#### *Summary*

The key findings of this study were that 28% of patients had no episodes of tonsillitis since being placed on the waiting list despite an average waiting time of 55 weeks, and only 15.2% had seven or more episodes of tonsillitis. There appeared to be fewer patients than expected who had a higher number of episodes in 2020.

#### *Interpretation*

Public health measures for the pandemic have included social distancing, a 'work from home' policy and increased hand hygiene, leading to reduced viral and bacterial transmission. There appeared to be a reduction in episodes of tonsillitis in some patients following social distancing measures which is unsurprising, although there is the possibility that a proportion of these patients would have resolution of symptoms given time as seen in previous studies of the paediatric population (6) and a period of 'watchful waiting' may be appropriate.

Most patients chose to remain on the waiting list despite low TOI-14 scores, reflecting the significant impact of tonsillitis on quality of life. Patients who chose to be removed from the waiting list had lower scores on the TOI-14. It would be of interest to follow this group up further particularly given emerging data on increased hospital admissions with tonsillitis and its sequelae (3)(9).

#### *Comparisons to other studies*

Roplekar et al (8) reported a mean TOI-14 score of 45.62 in a SIGN compliant cohort of patients, with the questionnaire being completed at the time of addition to the waiting list. The lower score in our

cohort of 25.67 may be due to reduced symptom burden in terms of sore throat, along with the long wait patients have experienced while awaiting their operation. Patients may choose to remain on the waiting list despite this due to impact of tonsillitis on employment and education. Anxiety regarding relaxation of public health measures and recurrence of symptoms may play a role.

Most patients felt that they were adequately informed regarding tonsillectomy, although some required a refresher during the consultation, particularly those who were referred following an emergency inpatient stay. This may reflect information giving by junior staff, or be related to stress of admission with acute illness. It may be worth following up these patients to discuss tonsillectomy as it is essential patients are fully aware of the risks of procedures particularly post Montgomery ruling.

Most patients were not concerned about coming into hospital during the pandemic which likely reflects that those patients waiting for tonsillectomy are unlikely to develop severe COVID-19 infection due to their age. This, along with the fact that most patients wished to stay on the waiting list mirrors similar findings by Heward et al (7) in the paediatric population.

#### *Limitations and strengths*

Questionnaire studies are subjective. It may be interesting to contrast this method of assessing disease burden with an objective measure, e.g. compliance with SIGN guidelines. It would have been useful to ask patients if they had been working from home during the pandemic to enable this relationship with tonsillitis to be assessed. The strengths of this study are that it shows the TOI-14 score is lower in this cohort compared with previous reported scores in patients with SIGN-compliant tonsillitis, potentially indicating symptomatic improvement with public health measures during the pandemic. It is the first to assess impact of tonsillitis during the COVID-19 pandemic in adults and demonstrates that patients still wish to pursue tonsillectomy despite symptomatic improvement.

#### *Clinical applicability and generalizability*

Repeat assessment to assess disease burden should be offered to all patients currently on a waiting list for tonsillectomy given the possibility of symptom resolution. Furthermore, in the context of high morbidity from tonsillectomy, this could facilitate further information giving. In England, in 2019-20, 15,386 tonsillectomies were performed in adults aged 16-69(10). If 10% no longer required tonsillectomy after reassessment, this could provide estimated savings to the health service of £2,178,657.60.

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<b>Problem</b>	<b>A) Mean TOI-14 score for all patients</b>	<b>B) Mean TOI-14 score for those remaining on waiting list</b>	<b>C) Mean TOI-14 score for those being removed from the waiting list</b>
Dry Throat	2.49 (SD 1.44)	2.64 (SD 1.36)	0.80 (SD 1.13)
Catarrh/thick secretions	2.47 (SD 1.62)	2.64 (SD 1.56)	0.60 (SD 0.97)
Sore throat	2.79 (SD 1.46)	2.95 (SD 1.38)	1.10 (SD 1.28)
Swallowing difficulties	2.07 (SD 1.69)	2.24 (SD 1.67)	0.40 (SD 0.70)
Feeling ill	2.43 (SD 1.59)	2.60 (SD 1.54)	0.50 (SD 0.71)
Reduced ability to work	1.78 (SD 1.64)	1.92 (SD 1.64)	0.20 (SD 0.42)
Frequency of visits to the doctor	1.38 (SD 1.60)	1.50 (SD 1.62)	0.10 (SD 0.31)
Costs of doctor visits	0.39 (SD 0.94)	0.43 (SD(0.98)	0 (SD 0)
Frequency of use of antibiotics	1.40 (SD 1.65)	1.51 (SD 1.67)	0.2 (SD 0.63)
Costs of medicines	0.99 (SD 1.38)	1.08 (SD 1.36)	0 (SD 0)
Trouble at work	1.64 (SD 1.84)	1.79 (SD 1.85)	0 (SD 0)
Reduced event participation	1.41 (SD 1.58)	1.54 (SD 1.60)	0.1 (SD 0.31)
Fewer gatherings with family or friends	1.11 (SD 1.46)	1.21 (SD 1.48)	0 (SD 0)
Feeling depressed due to tonsillitis/sore throat	1.66 (SD 1.77)	1.82 (SD 1.36)	0 (SD 0)

Table 1

Time period	Numbers of patients with number of episodes of tonsillitis per time period			
	0	1-3	4-6	7+
Since being placed on waiting list	33	43	24	18
2020 Observed	12	54	28	24
2020 <i>Expected</i>	8	34.33	45.00	30.67
2019 Observed	3	20	51	44
2019 <i>Expected</i>	8	34.33	45.00	30.67
2018 Observed	9	29	56	24
2018 <i>Expected</i>	8	34.33	45.00	30.67

