

Current trends in tonsillitis and tonsillectomy

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ABSTRACT

INTRODUCTION The aim of this study was to assess tonsillitis and tonsillectomy trends, both from a local and national perspective.

METHODS Retrospective analysis was carried out of tonsillitis admissions and tonsillectomy rates over a ten-year period in a university teaching hospital from 2003 to 2012.

RESULTS Since 2003 tonsillitis admissions have increased locally by 118% in adults and 179% in children despite negligible changes in tonsillectomy rates. Similar trends have been observed nationally.

CONCLUSIONS The findings of this study may be considered to be the result of current National Health Service policy. A reconsideration of agreed indications for tonsillectomy could potentially reduce hospital admissions of patients with tonsillitis in the long term.

KEYWORDS

Tonsillitis – Tonsillectomy – Quinsy

Accepted 4 April 2014

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Tonsillitis and tonsillectomy are expected to have a defined relationship where the incidence of one should mirror that of the other. Although the absolute incidence of tonsillectomy in a population may be far less than the absolute incidence of tonsillitis, a healthcare system should be able to adapt to increase rates of a specific surgical treatment when the specific indication for that treatment rises.

The National Health Service (NHS) is under significant pressure to become more efficient in the way it manages its resources. This has resulted in the development of healthcare initiatives whereby ‘prior approval’ is required routinely from the local health authority before funding is approved to allow certain procedures to go ahead; without such approval, hospitals are not reimbursed for performing certain operations. This is not unique for ear, nose and throat (ENT) operations as it is applicable to many other disciplines. This practice has been encouraged based on national policy recommendations to reduce the number of certain surgical procedures.¹

Anecdotal evidence points to a rise in tonsillitis admissions but the rise in tonsillectomy operations has not mirrored this and we wished to confirm or refute this perceived trend. The aim of this simple study was to report tonsillitis and tonsillectomy trends for patients passing through Norfolk and Norwich University Hospital (NNUH) over the last ten years.

Methods

Health information records at NNUH were searched using clinical codes for tonsillitis, quinsy and tonsillectomy for

the years 2005–2012 inclusive. Children undergoing combined adenoidectomy and tonsillectomy were excluded to avoid including patients suffering with obstructive sleep apnoea as opposed to recurrent tonsillitis. In view of this, data for children and adults were collated and analysed separately as well as a combined figure to ensure that excluding adenotonsillectomies did not bias the results. The age range set for children was 0–17 years inclusive and adults were defined as being 18 years and above.

Results

Over the 10-year period between 2003 and 2012, a total of 3,936 tonsillectomies were performed at NNUH: 1,501 (38%) on adults and 2,345 (62%) on children. Over the same period, 5,627 patients were admitted with tonsillitis or quinsy, of which 2,376 were adults (42%) and 3,251 were children (58%).

Statistical probabilities were calculated by performing linear regression and using Student’s t-test. During 2003, 127 adults and 203 children underwent a tonsillectomy. In 2012, however, 154 adults and 229 children underwent a tonsillectomy, signifying a rise of 20% ($p=0.76$) and 13% ($p=0.43$) respectively. In 2003 there were 148 adults and 161 children admitted for acute tonsillitis or quinsy. In 2012 these numbers were 323 adults and 450 children, indicating a rise of 118% ($p<0.01$) and 179% ($p<0.01$) respectively.

The total numbers of patients being admitted with tonsillitis and undergoing tonsillectomy over the period

studied as well as predicted trends based on linear regression are illustrated in Figure 1. Figures 2 and 3 illustrate these trends for children and adults independently.

Discussion

The number of tonsillectomy procedures has shown an overall downward trend (linear regression, $p=0.48$) over the last ten years in the catchment area of our hospital despite a two to threefold increase in admissions of patients with tonsillitis ($p<0.01$). These findings are present in both adult ($p<0.01$) and paediatric ($p<0.01$) populations. There is a significant jump in admissions noted from 2005 to 2007 but we can find no plausible reason for this. There has been no change to the catchment population owing to boundary amendments or closure of local services, for example, and in our hospital there have been no changes to admissions criteria or policy, or dilution of ENT staff experience levels.

Tonsillitis and tonsillectomy are one of the most common presenting conditions and operative treatments respectively.² The current clinical guidelines for indication of tonsillectomy in both children and adults used in our hospital (and widely across the UK) are based on Scottish Intercollegiate Guidelines Network recommendations⁵ while these, in turn, are based on criteria set out in Paradise *et al*'s 1984 study of severe tonsillitis and tonsillectomy in children.⁴

There may be a number of reasons why tonsillitis admissions are increasing while tonsillectomy rates remain static.

We have considered government policy as an explanation for why tonsillectomy rates have not increased to mirror the incidence of tonsillitis but other reasons may also be possible. One explanation may be the way tonsillitis is managed in the community. A survey from 2013 has suggested that patients are deterred from seeing a general practitioner owing to prolonged waiting times for an appointment.⁵ This could be contributing to a delayed diagnosis, with patients presenting with more severe symptoms that require hospitalisation. Both of these arguments, however, are speculative and have not been supported with any formal data.

Over the last ten years, the number of tonsillectomies performed in England as a number per head of population has decreased. In 2003–2004 in England, 50,224 tonsillectomies were performed,⁶ at an estimated rate of 1.01 per 1,000 population.⁷ This number reduced to 46,830⁸ by 2012–2013 at an estimated rate of 0.87 per 1,000 population.⁹ This was a reduction of 3,394 operations (-6.8%) but over the same 10-year period, the estimated population in England increased by 3.9 million people (+8%). Nationally, there has been an increase in tonsillitis admissions: in 2003–2004 there were 24,221 hospital admissions for acute tonsillitis¹⁰ whereas in 2012–2013 acute tonsillitis admissions rose to 68,178¹¹ (increase of 181%). It would seem that our local figures are consistent with a national trend.

There is much debate about the socioeconomic benefits of tonsillectomy in the UK. A 2012 Belgian study found that if one takes into consideration the cumulative costs of parents' work absenteeism, watchful waiting of recurrent tonsillitis results in a higher cost than tonsillectomy.¹²

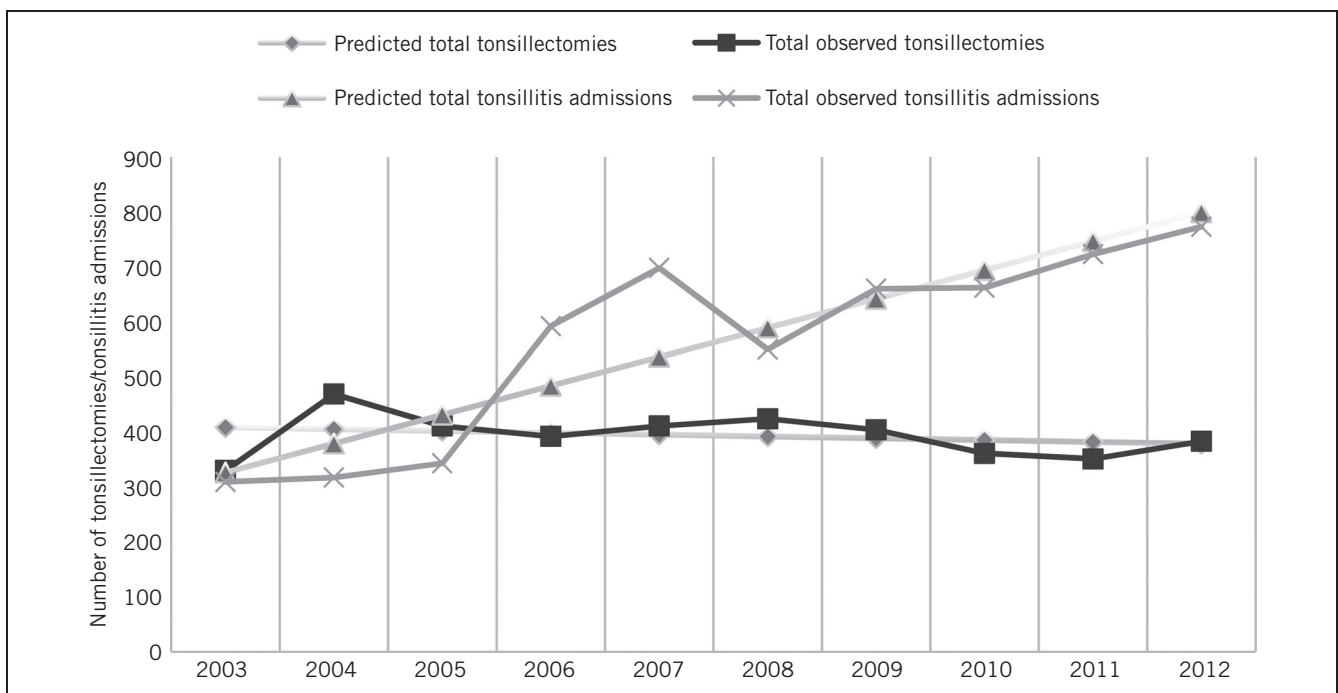


Figure 1 Total number of tonsillectomies and tonsillitis admissions with lines of best fit

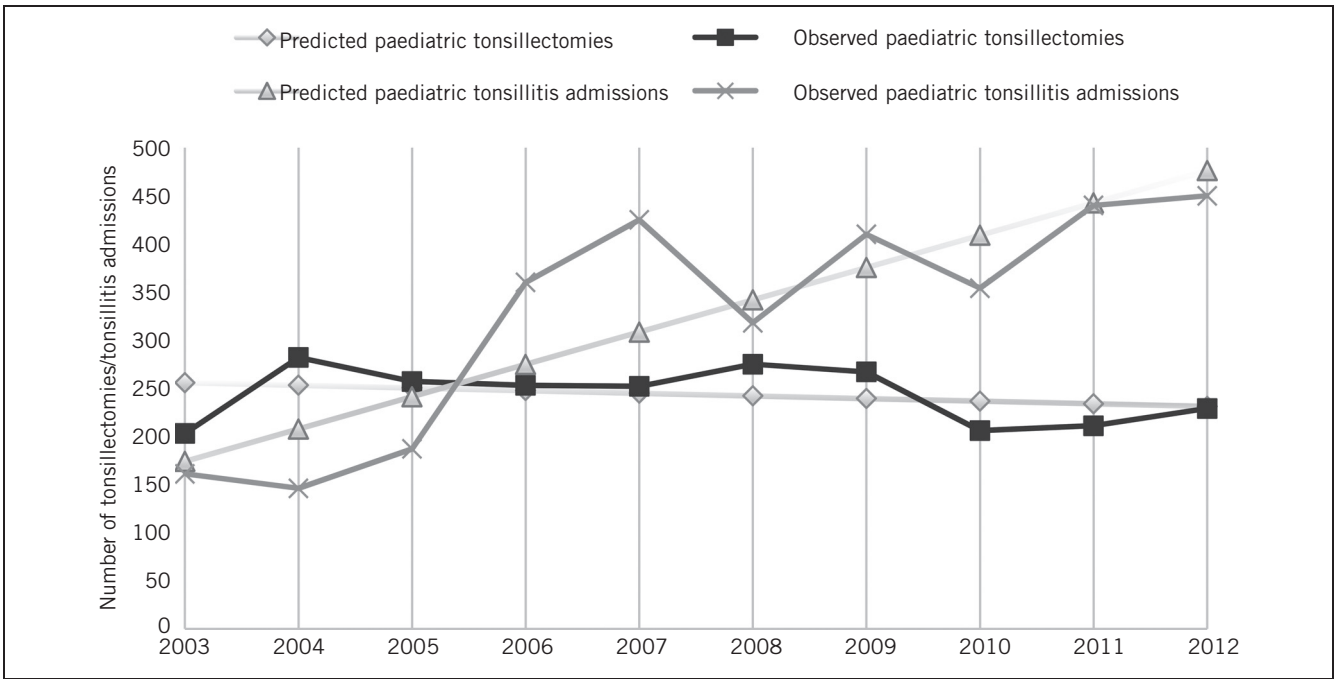


Figure 2 Number of paediatric tonsillectomies and tonsillitis admissions with lines of best fit

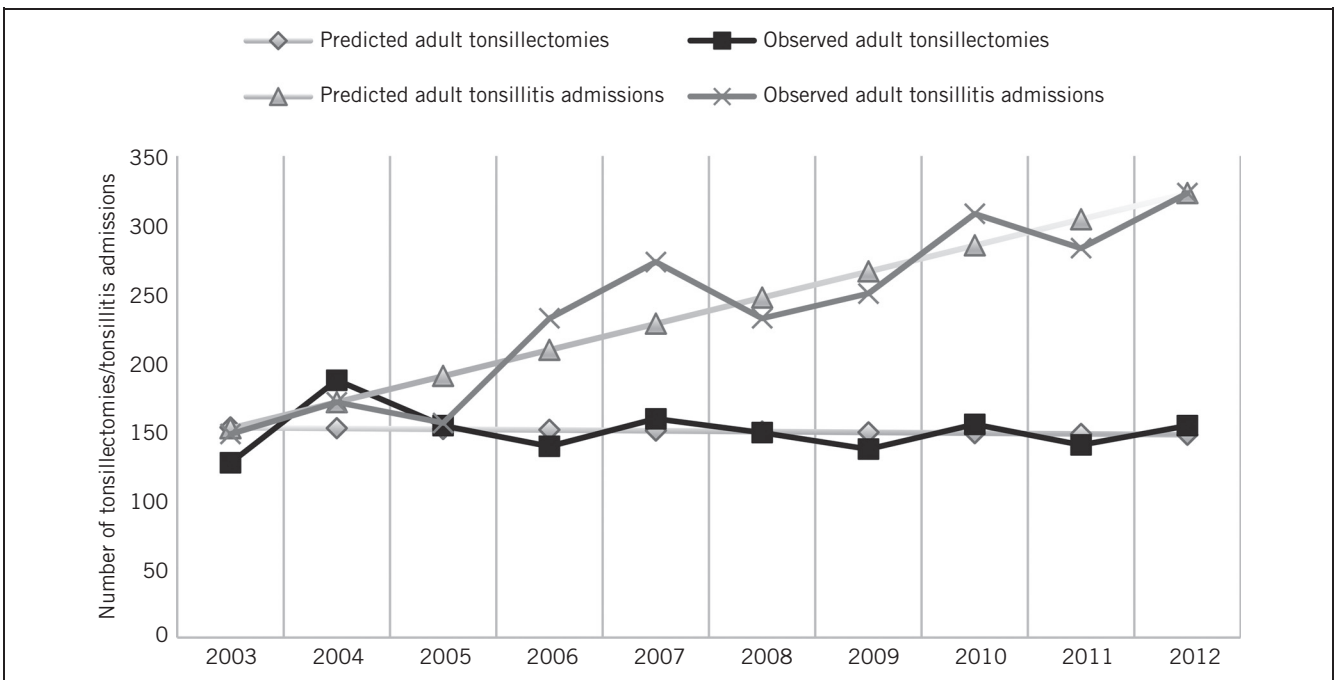


Figure 3 Number of tonsillectomies and tonsillitis admissions with lines of best fit

A 2012 UK study found that prompt tonsillectomy could save up to eight sore throats at a 'reasonable cost'.¹⁵ An NHS hospital inpatient bed is an expensive commodity, particularly as capacity is currently at a premium with many surgical and non-surgical patients all competing for a bed at seasons of high intensity. For the sake of performing more tonsillectomies in the short term, hospital admissions for patients with tonsillitis will be reduced in the long term. This would not only benefit the health of the individual patient but would also have wider reaching benefits for the NHS as a whole.

Conclusions

Tonsillectomy rates have remained static over the last ten years in the catchment area of our hospital despite an increase in admissions of patients with tonsillitis. The trend is mirrored nationally. This may be the result of current NHS policy. A reconsideration of agreed indications for tonsillectomy could potentially reduce hospital admissions of patients with tonsillitis in the long term.

Acknowledgements

The authors would like to thank Caroline Newman, Matthew Keeling and Jonathan Eagle from the information services department at Norfolk and Norwich University Hospitals NHS Foundation Trust for their assistance with this project, and Khan Doyme for his help with the statistical analysis.

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