

## REVIEW ARTICLE

# RATES OF POST- TONSILLECTOMY BLEEDING IN MALTA A TEN YEAR STUDY

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## ABSTRACT

Patients presenting with post-tonsillectomy haemorrhage are frequently readmitted to hospital, usually for observation, but surgical intervention may sometimes be necessary. A 10 year retrospective analysis of 3553 patients who underwent tonsillectomy with or without adenoidectomy at the Mater Dei hospital was carried out. Clinical notes were used to determine the post-tonsillectomy haemorrhage rate and its relationship to the use of antibiotics.

## INTRODUCTION

Post-tonsillectomy haemorrhage is a well known and relatively common, potentially life-threatening complication. It is the single most important factor to be discussed with patients in the process of obtaining informed consent for the surgical procedure<sup>1</sup>. Addressing patient concerns and educating patients regarding this potential complication is a key factor in managing the situation<sup>2</sup>.

The vast majority of patients who experience any degree of bleeding in the post-operative period seek medical attention. No consensus has been so far reached regarding the use of antibiotics as prophylaxis against post-tonsillectomy bleeding<sup>2-5</sup>. Of the four consultant-led firms in the ENT department, only one does not routinely prescribe antibiotics pre, peri and post-tonsillectomy.

The aim of this study was to establish the rate of post-tonsillectomy haemorrhage in the ENT department and compare it to established international standards. An effort was made to assess the characteristics of the problem regarding higher risk groups and seasonality, as well as to elucidate the role of antibiotics in relation to haemorrhage.

A preliminary four and a half year retrospective study (1464 patients) was concluded in 2003 and published in 2006<sup>6</sup>. The current study (2089 patients) includes a review up to December 2008. The results of both studies are combined in this review to achieve the 10 year conclusions. In November 2007, the ENT department moved from St Luke's Hospital to Mater Dei Hospital.

Three hundred sixty-eight tonsillectomies have been performed in Mater Dei Hospital up to December 2008. Of these, there were 23 patients who were readmitted with post-tonsillectomy haemorrhage (6.25% of all operations

performed). Data was gathered regarding the operation details, patient demographics, methods of haemostasis during the original operation (and during the operation for those patients requiring surgery for post-operative haemostasis) as well as the use of antibiotics. All patients were operated under general anaesthesia, after routine pre-operative assessments by the house officer and the anaesthetic team were performed. The procedures were carried out by consultants, senior registrars and senior house officers.

The rate of post-tonsillectomy haemorrhage was determined by the rate of patients being readmitted to the ward. For these patients, the admission notes were reviewed and data regarding the findings on admission, blood investigation results, management and classification of severity was collected. The severity was classified as mild (conservative management), moderate (requiring operative intervention) and severe (operative intervention plus blood transfusion). The post-operative bleeding was classified as primary (within the first 24 hours post-operatively) and secondary (more than 24 hours post-operatively). A total of 3553 tonsillectomies were carried out during this study period of which 1833 were males (51.6%) and 1720 (48.4%) were females.

Patients ranged from 1 year up to 48 years of age. The number of patients was quite evenly distributed throughout the age groups; however the most common age group was 0-5 years, with 1705 (48%) patients.

Indication for tonsillectomy ranged from recurrent acute tonsillitis to removal for tumour suspicion. However for the purposes of this study, we excluded those for tumour suspicion.

One hundred forty-two patients were admitted with post-tonsillectomy haemorrhage which represents 3.99% of all patients undergoing tonsillectomy. Of these, 17 (12%) were classified as suffering from primary post-tonsillectomy bleeding, whereas 127 (88%) were classified with secondary bleeding. Of the 142 patients who were readmitted there was a slight male preponderance with 83 (58.5%) patients while there were 59 (41.5%) female patients.

The rates of post-tonsillectomy bleeds when compared to the total number of procedure performed. The actual percentage of post-tonsillectomy bleeding rates, when compared to the total number of procedures performed per age group, was significantly different. The highest percentage was found in the

20–29 year age group with up to 23% of patients operated being readmitted with bleeding. The lowest percentage was found in the 0–5 year age group with 1.34%. Bleeding occurred from day 1 up to day 34 post-operatively. It occurred most frequently around 6–8 days post-tonsillectomy.

The patients who were readmitted spent from 1 to 12 days in hospital with a mean of 1.6 days. The majority of patients were discharged after only one day of observation. Most patients were classified as suffering from mild bleeding. In fact 108 (78.8%) cases suffered only mild bleeding, 25 (18.2%) cases suffered from moderate bleeding and only 4 (2.9%) cases suffered serious bleeding.

78.9% of patients admitted had been receiving antibiotics post-tonsillectomy. Only 30 (21.1%) of patients had not received any antibiotics. This means that 2.81% (30 out of 1066) of all patients which were operated on and kept off antibiotics ended up being readmitted with post tonsillectomy haemorrhage. On the other hand, 4.50% (112 out of 2487) of all patients which were operated on and were given antibiotics were being readmitted with post tonsillectomy haemorrhage.

## DISCUSSION

This study revealed a total post-tonsillectomy bleeding rate of 3.99% over a period of 10 years. This compares very well when compared to other studies. Blakely<sup>7</sup> reviewed the results of 4610 published papers found by carrying out a MEDLINE search, 63 of which reported post tonsillectomy bleeding rates. He suggests a maximum 'expected' sustained bleeding rate of 13.9%. The mean was of 4.5% with a maximum reported rate of 20% and a minimum of 0.6%.

The reported incidence of post-tonsillectomy haemorrhage proceeding to operation for haemostasis, ranges from 0.09 to 3%<sup>8–11</sup>. In our case the rate was as high as 20%. In part, this may

be accounted for by the fact that most of the cases regarding post-tonsillectomy bleeding are dealt with by visiting senior registrars from the UK who spend a period of 6–12 months in our facility (they were responsible for 19 cases of this bleeding). In fact of the 29 cases where operative intervention was decided upon, it was only in 3 cases that this decision was taken by the resident UK trained senior. This is a rate of 2.13% which compares well to the published rates. Senior registrars from other countries took an additional 7 patients to theatre.

In keeping with published results<sup>12,13</sup>, we found a higher rate of male patients being admitted suffering from post-tonsillectomy bleeding (58.5%). The most frequent prevalence was found in patients with an age group from 20–29 years.

12% of cases were classified with primary haemorrhage which compares well to other studies which however take into account *all* cases of post-tonsillectomy bleeding, including tumor suspicions<sup>6,14</sup>. With regards to the usage of antibiotics, our results between the consultant-led firm which used antibiotics compared to the three that did not show that they do not help in preventing bleeding post-tonsillectomy. This is in keeping with current trends<sup>2,4,15</sup>. As method of haemostasis during the original procedure itself, two methods were utilised – diathermy and ties. It is interesting to note that all patients who presented with bleeding post-tonsillectomy had had cautery during the tonsillectomy. It should be noted, however, that no data on how many ties were used in the original procedure has been recorded during the operations.

Overall, tonsillectomy is a relatively safe procedure. No deaths were identified during the past 10 years. This study shows that the overall rates of post-tonsillectomy bleeding in the ENT department of Mater Dei hospital is in keeping with the international published rates. There also seems to be no definite role for antibiotics. ❄️