

Postoperative Vomiting and Fever Following Tonsillectomy in Enugu, Nigeria

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ABSTRACT

OBJECTIVE: To determine the incidence of postoperative vomiting and fever in patients that had tonsillectomy in our centre over a five year period.

METHODS: The hospital records (case files) of patients that had tonsillectomy with or without adenoidectomy under general anaesthesia at the University of Nigeria Teaching Hospital, Ituku Ozalla, Enugu, Nigeria from January 2004 to December 2008 were retrieved and analyzed. Patients that had an adenoidectomy only were excluded. The patients were of the American Society of Anesthesiologists (ASA) I to III status.

RESULTS: There were fifty two (52) patients that had tonsillectomy and adenotonsillectomy under general anaesthesia during the period under review. Forty one (41) patients were between the ages of 1-13 years (78%) and eleven (11) patients between the ages of 18 - 62 years (12%). There were 32 males and 20 females. The average age for all the patients was 9.03 years. There were seven (7) patients with post operative vomiting (13.4%). These included four (4) patients in the paediatric population (9.75%) and three (3) in the adult population (27.2%). Twenty one (21) patients (40.3%) developed postoperative fever. There were no deaths. The other significant morbidity was postoperative pain.

CONCLUSION: The number of patients that had tonsillectomy in our center was small compared to other studies. The incidence of postoperative vomiting in this study is lower than that reported from Western World, showing possible racial variations, a trend that has been reported in some earlier studies in Black populations.

KEYWORDS: Tonsillectomy, postoperative vomiting and fever, Africa

of 36% to more than 70%⁶⁻⁹. When no anti-emetic is given, the incidence of postoperative vomiting is between 62% and 80% in the paediatric population^{6,10,11}. This has great psychological, physical, emotional and financial consequences because of the distress caused by the vomiting which including electrolyte imbalance and the extra cost incurred because of delayed discharge from hospital. Consequently, a lot of resources have been expended in coming up with a potent antiemetic that would greatly reduce the incidence of POV in patients. Several reports have shown racial characteristics in the incidence of POV, with the Negro race having a reduced incidence of POV¹²⁻¹⁴. This study seeks to find out whether such a pattern exists in a study carried out in a tertiary care center in Sub-Saharan Africa.

METHODS

The hospital records (case files) of 52 patients that had tonsillectomy with or without adenoidectomy in the University of Nigeria Teaching Hospital (UNTH), Enugu, Nigeria from January 2004 to December 2008 were retrieved and analyzed. Patients that had an adenoidectomy only were excluded. Tonsillectomy was defined as removal of the tonsils, and adenotonsillectomy as removal of both tonsils and adenoids. Data collected included the following: patients' demographics, anaesthetic technique and drugs, and the number of patients that vomited post operatively. Also collected was the number of patients that developed postoperative fever (body temperatures of 37.5⁰ - 39.5⁰). Routinely patients scheduled for operation were given perioperative antibiotics.

Anaesthesia and surgery for paediatric tonsillectomy in UNTH, Enugu is conducted by Senior Trainee Specialists and Consultants. Anaesthetic drugs used are sodium thiopentone, ketamine, propofol (induction agents), muscle relaxants include suxamethonium, pancuronium and atracurium. Analgesics were ketamine, fentanyl, non-steroidal anti-inflammatory agents (NSAIDS) and pentazocine. Inhalational agents were halothane and isoflurane. Reversal agents were neostigmine and atropine/glycopyrrolate. Premedicants routinely used are diazepam and atropine. The carrier gases used are oxygen and medical air. Our anaesthetic management of patients for tonsillectomy is general anaesthesia with endotracheal intubation and the relaxant technique. Paediatric patients in this study were patients who were 13 years old and below. The patients

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INTRODUCTION

The indications for tonsillectomy or adenoidectomy and the complications arising from the procedure continue to generate considerable debate in the medical literature¹⁻³. Despite being common procedures, the indications for tonsillectomy and adenoidectomy remain controversial^{4, 5}. Among the complications of tonsillectomy, postoperative vomiting (POV) has not been given much prominence in our environment. Postoperative vomiting in patients that underwent a tonsillectomy, with or without an adenoidectomy is reported to be in the range

were of the American Society of Anesthesiologists (ASA) I to III status.

RESULTS

Fifty two (52) patients had tonsillectomy and adenotonsillectomy under general anaesthesia during the period under review. Twenty eight (28) patients (53.8%) had adenotonsillectomy while twenty four (24) patients (46.2%) had tonsillectomy only. There were forty one (41) patients between the ages of 1-13 years (78%) and eleven (11) patients between the ages of 14-62 years (12%). There were 32 males and 20 females. The average age for all the patients was 9.03 years (3.5 years for paediatric patients and 29.5 years for the adults). There were seven (7) patients with POV (13.4%). These included four (4) patients in the paediatric population (9.75% or 4/41) and three (3) in the adult population (27.2% or 3/11).

Four (4) patients vomited within the first twenty-four hours, two (2) patients vomited on the second postoperative day and one (1) patient on the third postoperative day. The percentage of POV in the male population was 12.5% (4/32) and 15% (3/20) in the female group. Eight (8) patients received perioperative steroids, five (5) preoperatively and three (3) in the immediate postoperative period. None of those patients vomited.

Twenty one (21) patients (40.3%) developed postoperative fever. Fourteen (66.7%) of them were paediatric patients and seven (33.3%) were adults. Eighty one (81) percent developed the fever in less than 24 hours.

There were no deaths. The other significant morbidity was postoperative pain.

DISCUSSION

The percentage of post tonsillectomy vomiting (POV) in this study at 13.4% mirrors a similar study from the West Indies. The percentage of POV in that study was 13.1%.¹² This is in contrast to other studies in the Western World with figures that range from 36% to 80% depending on whether the patients received anti-emetic prophylaxis or not^{6-10, 15, 16}.

This highlights the possible role of racial factors in the incidence of postoperative vomiting. Previous studies on PONV in black populations from Nigeria¹⁴ and Guyana¹³ reported incidences of less than 1% and 2.9% in their recovery rooms. In the Nigerian study, the incidence of PONV in the first twenty-four hours was 19.6%. The incidence of vomiting in both studies might have been lower if POV alone was considered as in this study, because of the difficulty in determining nausea in children.

It has been reported that variations in CYP2D6 metabolism can lead to differences in drug clearance, leading to therapeutic failure or increased adverse effects. This is because in CYP2D6 deficient people, there is reduced metabolism leading to drug accumulation and, possibly increased adverse effects. Because less than 10% of Caucasians are poor metabolizers, there is more therapy failure when 5-HT₃ receptors antagonists are used for prevention of PONV as most of them except granisetron are metabolized by CYP2D6¹⁷. This may explain the increased incidence of PONV in Caucasians. However, there are variations even within the same race¹⁷.

There was no significant gender difference in POV in this study at 12.5% for males and 15% for females. This is similar to the study by Scarlet et al at 12.6% and 13.6% for males and females respectively¹². This is because the majority of our study population was 13 years or less (78%). Several studies have identified the female gender from puberty onwards as a strong risk factor for PONV^{15, 16, 18-20}.

Our figures seem significant because, it is not part of our protocol to give pre-operative anti-emetics. However, our patients receive anticholinergics to dry secretions and present a clear field for the surgeons.

None of the eight patients who received perioperative steroids vomited. Steroids are known to reduce POV in tonsillectomy patients.¹³

Twenty one (21) patients (40.3%) developed postoperative fever. A report in the literature on the incidence of post tonsillectomy fever ranges from 1.5% to 79% of the patients studied²¹.

The etiology of post tonsillectomy fever is obscure. The following are all implicated; bacteraemia during the operation, anaesthetic agents and the inflammatory response of tissue to injury during surgery²². It is reported to occur in a significant percentage of tonsillectomies²³⁻²⁵. This may be because this is a procedure which involves the breaching of the pharyngeal mucosa the creation of a fresh wound made in a field with a rich blood supply, teeming with bacteria, most of which are pathogenic²¹. In the patients that had a fever in this study, 81% developed the fever in less than twenty-four hours postoperatively. This is similar to that reported by Telian et al²³ at 79% and lower than those reported by Anand et al (54%)²¹. A Nigerian study on day case adenotonsillectomy gave a POV incidence of 19.7%, but fever was low at 7.6%²⁶.

CONCLUSION

The number of patients that had tonsillectomy in our center was small compared to other studies. The incidence of postoperative vomiting in this study is

lower than that reported from Western World, showing possible racial differences, a trend that has been reported in some earlier studies in Black populations.

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