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Case Report

Audit of Secondary Post Tonsillectomy Bleeding

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Introduction

Adenotonsillectomy operations are still the commonest surgical procedures for ENT surgeons and hence postoperative complications of bleeding, pain, remains the most recorded adverse events of such procedures.

This audit reflects the experience of a single Surgeon and his team at Tameside and Glossop NHS Hospital in the period from November 2016 till October 2017. Children formed The majority of the patient's population in this audit .

All Tonsillectomy procedures for both adults and Paediatric patients was a done as a day case procedures where children were observed for at least 8 hours postoperatively in a paediatric ward and adults in the normal day recovery unit.

Bipolar electro diathermy technique at power 17 JW settled manually at the start of each surgical procedure was the main technique used in Tonsillectomy procedures .

This audit reflects the rate of secondary post tonsillectomy bleeding and pain using such technique as no primary post tonsillectomy bleeding was recorded in the Cohort population.

Materials and Method

A total of 70 patients under went Tonsillectomy in the period from 14/11/2016 till 14/09/2017 done by named Surgeon at Tameside NHS Hospital, data was collected from Theatre Records Postoperative complications were matched with Department Morbidity& Mortality Log Book.

32 patients had Adenoidectomy with Tonsillectomy and none of these 32 patients had either Primary or Secondary post Adenoidectomy Bleeding.

Patient's Ages varied from the youngest of 2 years 6months and the oldest was 44years old with a mean age of 15 years.

Regarding the Paediatric population age from 2-16 years old, all patients received Dexamethasone a dose of 0.5mg/kg by the anaesthetic team in the peri-operative time , also postoperatively all children received the standard postoperative analgesic regime of per orally Paracetamol at a dose of 250mg every 4-6hours /day maximum of 4 doses per day for 7 days (180-200mg/day for age 2-5years old) also ibuprofen at dose of 5mg/kg for 5 days (unless contraindicated e.g. asthma)

Postoperatively All children were assessed regularly by the clinical team to make sure that adequate pain control with a score of 3 or 4 as satisfactory score (using visual analogue score) and signs of satisfactory hydration before discharge .

In the Adult Patients (above 16 years old) Dexamethasone was administrated at a dose of 0.5mg/kg with a maximum dose of 8 mg was given by the anaesthetic team in the peri –operative period.

The postoperative pain control regime included Co-codamol tablets 500/30(500mg Parcetamol and 30mg Codeine) for 10 days in addition to Ibuprofen tablets for one week.

Prior to discharge all patients were assessed with the clinical team to ensure adequate hydration and a satisfactory pain control of 4 or 5 using the visual analogue score .

No Primary Post Tonsillectomy Haemorrhage was recorded in any of the 70 patients.

4(5%) Patients were re admitted post Tonsillectomy procedure 1 patient was admitted 6 days post Tonsillectomy with pain that was managed conservatively with IV Fluids, IV antibiotics, Analgesics and was discharged 48 hours post readmission.

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3 (4%)Patients were admitted with Secondary Post tonsillectomy bleeding which occurred 5-7 days post Primary Surgery. The Age of the 3 patients varied from the youngest was 2 yrs 6 months -the oldest was 29years and 18 years old.

All 3 patients had minimal oral bleeding no blood transfusion was required. None of the 3 patients needed Surgical Intervention to control Bleeding hence managed Conservatively with IV Fluids, IV Antibiotics and were discharged 48 hours with eventual recovery .

In Conclusion The rate of secondary post Tonsillectomy Bleeding in a single Surgeon Cohort of patients is 4% which matches the British post Tonsillectomy bleeding audit scores of 3-5%, following this audit a trial to decrease the power settings of the Bipolar electrocautery Forceps from 17 JW to 15JW and a secondary audit to monitor the rate of Secondary Post Tonsillectomy Bleeding following power change.

A Secondary outcome of this Audit that only 5% of patients were readmitted post Tonsillectomy procedure which support the Philosophy of Day Case Tonsillectomy for both Adult and paediatric populations.

Discussion

Tonsillectomy procedure still remains one of the most common Surgical Procedure in ENT practice. Postoperative Complications includes mainly pain, and Bleeding are the commonest reported adverse effects of such procedure whether in adult or paediatric patients.

Postoperative Bleeding can be primary occurring within 24 hours of surgery with rate varies from 0.5%-1% of patients as reported in Literature.

Secondary Postoperative Bleeding is more common than primary bleeding with a rate that varies from 1%-6% of patients according to National British audit study published in 2005 that mainly depends on technique used to perform tonsillectomy as follows; the lowest rate of bleeding was found in cold steel dissection technique 1.3% and return to theatre of 1%,and increased to 2.9% and return to theatre of 1.7% if bipolar diathermy was used to control bleeding.

Regarding the use of Hot Techniques to perform tonsillectomy the rate of secondary post tonsillectomy bleeding were ; in case of using Bipolar forceps for dissection 3.9% and return to theatre of 2.3% of patients, Coblation technique of 4.4% with 3.1% of patients returned to Theatre and the highest incidence of Secondary Bleeding occurred with using Monopolar Diathermy 6.1% and 4% of patients return to theatre.

The British National Audit study highlighted The extent to which diathermy is used in a patient seems to be linked to the amount of thermal damage to surrounding tissues. This indicates that diathermy should always be used with caution, and the power setting, frequency and duration of diathermy use should be carefully controlled. Hence following this audit setting adjusting the power and frequency settings to a lower level in addition to the time used in controlling bleeding are important Factors to be considered in Surgeon experience to decrease rate of Secondary Post Tonsillectomy Bleeding [1].

Lowe *et al.*, in 2009 published a study to highlighted the importance of adjusting lower power settings on using Bipolar Forceps as a tool for performing Tonsillectomy to decrease the rate of Secondary Post Tonsillectomy Bleeding [2].

Finally a recent Meta analysis published in 2017 by Francis DO., *et al.*, found the frequency of primary and secondary Post Tonsillectomy Bleeding associated with total and partial tonsillectomy was <4% for any technique and with overlapping confidence bounds.

Pooled frequencies of Post Tonsillectomy Bleeding were also <5% overall (4.2% for total tonsillectomy, 1.5% for partial tonsillectomy) in comparative studies.

The meta-analysis revealed that frequency of Post Tonsillectomy Bleeding-associated non-operative revisits/readmission or reoperation ranged from 0.2% to 5.7% for total tonsillectomy and from 0.1% to 3.7% for partial tonsillectomy.

Conclusion

This audit reflects a retrospective study of single surgeon experience at Tameside NHS Hospital in the period from November 2016 –September 2017.

A total 70 patients had a tonsillectomy procedures , for both adult and paediatric patients. None of patients had a primary Post tonsillectomy Bleeding.

3 Patients(4%) had Secondary Post Tonsillectomy Bleeding that occurred between 5^{th}-7^{th} day postoperatively managed conservatively without the need for Surgical Intervention to control bleeding.

Various studies highlighted the importance of decreasing power, Frequency, settings and duration on using Bipolar Forceps as a tool of Performing Tonsillectomy which is implemented by Surgeon in current Tonsillectomy procedures by decreasing power setting to 12JW for 3 seconds in controlling bleeding.

References

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