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DAY CASE ADENOTONSILLECTOMY: IS IT SAFE?

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Summary

To determine the risk of complications of adenotonsillectomy if they are discharged after a short period of postoperative observation, this study was conducted. The records of all patients, 14 years of age or less who underwent tonsillectomy with or without adenoidectomy from July 1996 through August 2000, were reviewed. A total of 250 patients were identified, 17 patients were excluded from the study because of various medical conditions which was found to have required planned overnight hospitalization. The occurrence and severity of postoperative complications, which happened during the postoperative period, were recorded from their medical files.Complications, which were recorded, included bleeding and vomiting. The total complication rate was 9.4%, primary bleeding occurred in 2.1%, all these cases happened during the first 3 hours of the postoperative period. Secondary hemorrhage occurred in 3%. Vomiting occurred in 4.2% of the patients. we concluded that, short periods of observation could be safe, with low rate of early complications if they are discharged after a period of 4-6 hours, in appropriately selected patients.

Introduction

Tonsillectomy with or without adenoidectomy is an operation with a relatively high postoperative morbidity. The transformation of adenotonsillectomy into an outpatient procedure for otherwise healthy children began with the review of 40000 cases by Chaing et al [1] in 1968. Since 1983 at least 11192 cases have been reviewed and the results published in multiple articles supporting outpatient adenotonsillectomy as a safe and effective procedure. There is, however, no consistent recommendation for the duration of the postoperative recovery room stay. Most authors[2,3,4] recommended a period of 6 to 12 hours of observation before discharge. These studies based their recommendations for time of discharge and the occurrence and time of postoperative complications including bleeding, nausea and vomiting, dehydration and fever.

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We performed a 4 years retrospective review of all pediatric patients, who underwent tonsillectomy, with or without adenoidectomy. There medical records were reviewed, to assess and compare our complication rate, with those previously published in the literature, and to emphasize that patients are not placed at an unacceptable risk of complications, if they were done as a day case procedure.

Patients and Methods

A retrospective review of all patients who have undergone tonsillectomy or adenotonsillectomy, from July 1996 through August 2000, was undertaken. A total number of 250 medical files were reviewed, patients who were 15 years of age or older, or who had significant medical illness such as asthma, bleeding tendency or other medical illnesses which have required preoperative admission, were excluded from the study.

Our policy was to admit all patients who have been scheduled for adenotonsillectomy one day prior to surgery, to assess the general condition of the patient and to do the routine laboratory investigations. All were discharged at least 24 hours after surgery to be able to follow them up and manage expected complications.

The chart review included the following data: age, sex, indications for surgery, procedure and complications. All cases of adenoidectomy were done using curette, but tonsillectomy was done using either mechanical or bipolar electro-cautary dissection. Hemostasis was obtained using packs for adenoidectomy and using either bipolar electrocautary or ligation of the bleeding vessels in tonsillectomy.

The complications recorded were bleeding and vomiting. Bleeding cases were categorized as primary if they happened during the first 24 hours postoperatively, and secondary if they happened within 14 days after surgery. The severity of bleeding was graded according to Guida and Mattucci [2], grade 1 was used for mild bleeding that stopped spontaneously, grade 2 was used for moderate bleeding requiring conservative management and grade 3 was used if bleeding was so sever to require return to the operative room. Vomiting was considered as a complication, if 3 or more episodes have occurred during the immediate postoperative period.

Results

The records of 250 patients who underwent tonsillectomy with or without adenoidectomy were reviewed. 17 patients were excluded from the study because they found to have medical illnesses, which could have indicated preoperative admission, leaving the study with 233 patients. The average age was 7 years ranged from 3 to 14 years. There were 130 males (56%) and 103 females (44%). Recurrent tonsillitis and airway obstruction were the indications for surgery. 75 patients (32%) underwent tonsillectomy and 158patients (68%) underwent adenotonsillectomy. The surgical procedure was mechanical dissection in 150 patients (64%) and bipolar dissection in 83 patients (36%), Table I.

Table II shows the total complications after adenotonsillectomy, primary hemorrhage happened in 5 patients (2.1%), secondary hemorrhage in 7 patients (3%) and vomiting happened in 10 patients (4.3%) with a total complication rate of 9.4%. Regarding the primary hemorrhage, the procedure was adenotonsillectomy in 4 cases and tonsillectomy alone in one case, 3 of them needed to return to the operating room, to secure hemostasis. All cases of primary hemorrhage, has been diagnosed during the first 3 hours from the end of surgery. There were no cases of postadenoidectomy hemorrhage in this study.

	No. of patients	%
Sex:		
Male	130	56%
Female	103	44%
Indication for surgery:		
Recurrent tonsillitis	150	64%
Obstructed airway	83	35%
Surgery performed:		
Tonsillectomy alone	75	32%
Adenotonsillectomy	158	68%
Age:	Ranged from 3 to 14 years	

Table I. Patients characteristics

Complication	No. of patients	%
Primary hemorrhage	5	2.1%
Secondary hemorrhage	7	3.1%
Vomiting	10	4.3%
Total	22	9.4%

Table II. Total complications

	Procedure	Grade of hemorrhage
1	Adenotonsillectomy	3
2	Adenotonsillectomy	3
3	Adenotonsillectomy	1
4	Adenotonsillectomy	2
5	Tonsillectomy alone	1

Table III. Primary hemorrhage

Secondary hemorrhage occurred in 7 patients 3% (table IV); these patients bleed 3 to 11 days after surgery. 5 of these cases has been admitted to the hospital for observation and intravenous fluids and antibiotics, but only one patient needed to be taken to the operative room to control his bleeding. There was no post-adenoidectomy secondary bleeding.

Vomiting happened in 10 cases (4.3%), and this happened during the first 2 hours after the end of surgery.

Days post op.	Age/y	Sex	Procedure	Grade of hemorrhage	admission
3	5	male	Adenotonsillectomy	2	Yes
4	5	female	Adenotonsillectomy	1	Yes
4	12	female	Tonsillectomy	1	No
5	14	male	Tonsillectomy	2	Yes
6	13	female	Tonsillectomy	1	Yes
9	10	male	Tonsillectomy	1	No
11	9	female	Tonsillectomy	2	Yes

Table IV. Secondary haemorrhage

Discussion

Tonsillectomy with or without adenoidectomy, is one of the most common surgical procedures in childhood. It is an operation with high postoperative morbidity [5].

There is a continued encouragement to increase the use of day surgery. Recent publications have suggested that day case tonsillectomy is a safe procedure due to low primary hemorrhage rates (0.14-3.5%)[6]. One of the suggested benefits of day case surgery is that patients themselves want it, they prefer to recover at home after the operation. Lalakea ML et al [7], reviewed a total of 143 patients scheduled for ambulatory tonsillectomy and they concluded that a short postoperative observation period is safe with low rate of complications in appropriately selected patients.

The complications identified in our study compare favorably and consistently with those reported by other authors. Carither et al [3] considered 10% rate of total complications as an acceptable rate, occurring after discharge from the day case unit, they estimated that patients could be discharged after 8-10 hours of observation.

We found a total complication rate of 9.4%, using the definition of complications by Carithers and co-workers. Crysdale and Russel [4], used primary bleeding as the only criterion for time of discharge, they found that only 0.6% of primary hemorrhage occurred more than 12 hours postoperatively. In our study, no primary hemorrhage happened after 3 hours.

Rakover et al [8], reviewed 363 children who underwent tonsillectomy as an outpatient procedure, they found that tonsillectomy can be performed as an outpatient procedure regardless of age, indication for surgery or type of procedure as long as good recovery room exists for 4-6 hours.

Gabalski et al [9], made a study on 534 patients who underwent tonsillectomy with or without adenoidectomy, the patients were observed for 5 hours postoperatively. They found that, if patients remain under postoperative recovery room observation for 6 hours, appeared to be excessive, thus, observation period may be safely reduced to 4 hours.

Other studies did not recommend discharge times, but described much shorter observation periods. Colclasure and Graham [10], did not recommend a specific discharge time, but recorded an average of 2.25 hours of the observation on their review of 3340 patients.

Hellier et al [11], reviewed 928 day case tonsillectomies, their results suggested that, day case tonsillectomy can be safely and successfully performed with a dedicated pediatric day case unit.

In our study episodes of primary bleeding were noted within the first 3 hours of the postoperative period. Depending on our results and the results published in the literature, we suggest that, children may be safely discharged, after short observation periods (4-6hours) when they meet specific discharge criteria. These criteria that we suggest are: no active bleeding by visual inspection, no repeated vomiting and careful explanation of the postoperative instructions and precautions to the parents.

Conclusion

We concluded that, short period of observation are safe for outpatient pediatric patients undergoing adenotonsillectomy if discharge criteria are met.

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