COMPLICATIONS OF TONSILLECTOMY AND MANAGEMENT

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ABSTRACT

OBJECTIVE:
The objective of the study was to determine the complications of tonsillectomy and management of these the complications.

MATERIAL AND METHODS:
The study was Randomized controlled trial conducted from 1st January 2008 to 31 December 2009 (of two year duration) at ENT Department Khyber Teaching Hospital, Peshawar. Total 2156indoorpatientsof all age ad both sex, underwent tonsillectomy were included in the study.

RESULTS:
In my study all of the 2156 patients underwent tonsillectomy were having pain in which 1176 patients (56%) with mild to moderate pain and 980 patients (44%) with severe pain, 1274 patients (59%) nausea and vomiting, 129 patients (7%) bleeding, 19 patients (<1%) airway obstruction, 273 patients fever and infection, 17 patients (<1%) pneumonia, 126 patients (6%) dehydration, and injury to surrounding structure like teeth injury in 105 patients (5%), temporary uvular or tongue edema in 367 patients (17%), and other rare complications (<1%) like temporomandibularjoint dislocation in 7 patients, Grisel's syndrome in 5 patients, atlanto-axial joint subluxation in 1 patient and glossopharyngeal nerve damage in 3 patients.

CONCLUSION:
Though tonsillectomy is a routine and safe surgery can result in morbid complications and can cause death. By adopting pre and per-op basic steps can minimize the complications of tonsillectomy.

***KEY WORDS**:*
Tonsillectomy, Complications of tonsillectomy, pre and post-op steps in tonsillectomy

INTRODUCTION

Tonsillectomy is one of the most common surgical procedures performed worldwide.[1] Mortality rates for the operation range from 1 in 10,000 to 1 in 35,000, with morbidity rates ranging from 1.5% to 14%.[2]The most common complications include pain, bleeding, nausea and vomiting. Less common complications include airway obstruction, fever and infections, pneumonia, dehydration and injury to surrounding structure like teeth, uvula and tongue. The rare complications include temporomandibular joint dislocation, Grisel's syndrome, atlanto-axial joint subluxation, glossopharyngeal nerve damage, subcutaneous emphysema, velopharyngeal incompetence or nasopharyngeal stenosis and otalgia.[3].The indications for tonsillectomy are tonsillar infections (attacks of acute tonsillitis, peritonsillar abscess unresponsive to medical management and drainage documented by surgeon and chronic or recurrent tonsillitis associated with the streptococcal carrier state), tonsillar hypertrophy (causing airway obstruction, severe dysphagia, sleep disorders, or cardiopulmonary complications

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and dental malocclusion or adversely affecting orofacial) and neoplasms (unilateral tonsil hypertrophy or ulceration).[4]

Different techniques of tonsillectomy include, cold steel method (Scalpel, dissector, guillotine),hot diathermy (BiClamp forceps),powered intracapsular. Microdebrider,Harmonic scalpel, Coblation Bipolar and CO2/KTP lasers.[5] Preoperatively important steps are taken like, overnight observation for high-risk patients with sleep apnea, coagulation disorders, or other underlying diseases, younger than 4 years of age or living a long distance from the hospital. Informed consent bleeding, post-op pain, referred notalgia and dehydration. Inquiry about previous surgeries of any upper airway obstruction, difficulty cervical extension spine, or enzymatic (pseudocholinesterase) deficiencies should be done. Anesthesia fitness like any comorbid disease and Mallampati score (1 of 4 classes derived by visualizing the base of the uvula, the tonsillar pillars, and the soft palate) to predict the ease of intubation) Stop page of certain medications like aspirin and other anti-platelet aggregation drugs 7 days before surgery and naproxen and other non-steroidal anti-inflammatory drugs 4 days before surgery.[9]Order lab tests like complete blood count, bleeding and clotting times and viral profile (HBsAg, anti-HCV and HIV).[10]Neck radiographs should be taken prior to surgery to assess the atlanto-axial joint stability in patients with Down syndrome.[6, 7, 8, 9, 10]. Per-operatively the use of dexamethasone significantly decrease post-op pain, nausea and vomiting while the grade of surgeon and meticulous surgical technique result in low pain as well as other post-op complications. Other than cold steel method different techniques are used to minimize certain complications of tonsillectomy.[11, 12]

Postoperatively pain can be minimized by use of high dose of acetaminophen, (with or without codeine) and celecoxib (selective COX inhibitor).[13]Honey has also got a valuable effect and can be used as an adjunctive regimen.[14] Antiemetic use and avoidance of post-op opioids such as codeine or tramadol minimize pos-top nausea and vomiting,[15]In less bleeding use of ice cubes, application of local adrenaline pack and I\V trans-aminic acid are affective while in case of excessive bleeding, patient will need to be rushed to an OT to control the bleeding, protecting the airway and stabilizing hemodynamic status.[16]Acute airway obstruction needs prompt removal of clots, dislodged tonsillar tissue, loose teeth, gauze piece and parts of surgical instrumentation from airway and steroid for edema of the surrounding structures.[17] Antibiotics is used to reduce the risk of infection in the traumatized region and facilitate a return to normal activity sooner.[18]Emphysema and pneumo-thorax are treated conservatively with broad-spectrum antibiotics, avoidance of coughing, vomiting, and straining, suturing the injured mucosa and rarely tracheotomy or even a thoracotomy.[19]Encourage the patients to resume oral intake of fluids and, when necessary, provide analgesia to facilitate the process or re-admit the patient to achieve better pain relief and restore hydration.[20]Spontaneous healing often occurs within several weeks if taste disorder due to glossopharyngeal nerve damaged during dissection or electrocautery,[21] Injuries due to hyperextension like mandibular condyle fracture, dislocation or stress injury of the (TMJ) are treated with analgesia, soft diet, and possible surgical reduction,[22]Atlanto-axial joint dislocation or subluxation and Grisel's syndrome disorder require rest, neck immobilization, and antibiotics.[23]

RESULTS

In my study out of total 2156 patients, 824 (38.2%) were 5-10 years, 746 (34.6%) were 11-20 years, 545 (25.3%) were 21-30years and 41 (1.9%) were above 30 years of age as shown in table #1. Both sex groups were included. Out of 2156 patients 1229 (57%) were male and 927 (43%) were female as shown in figure #1. Clinical features in total of 250 patients 2084(96.7%) were having of sore throat, obstructive symptoms in 245(11.4%), enlarged tonsils in all 2156 (100%), enlarged tonsils in ears in 2156 (100%), palpable cervical (jugulo-digastric) lymph nodes in 1996 (92.6%) and mouth breather 582 (26.9%) as shown in table #2. The complications were

divided into most common, less common and rare. The most common complications rate in my study was that out 2156 patients 1342(62%) were having post-op mild pain while 288(18) severe pain 474 patients (22%) nausea and vomiting, 323(15%) mild bleeding (controlled by local measure) while <1% severe bleeding (controlled in operation theatre) as shown in table # 3The less common complications were dehydration in 121 (5.6%), infections in 43 (1.9%), injury to teeth in 56 (2.7%) and edema of uvula in 67 (3.1%). As shown in table # 4. The rare complication were airway obstruction in 4 (0.2%), TMJ disorder in 2 (0.1%), taste disorder in 1 (0.05%), pneumo-thorax in 2 (0.1%), Griesel's syndrome in 1 (0.5%) and atlento-axial dislocation in 1 (0.5%) patients as shown in table # 5.

Table:1 Age Distribution

Age in Years	Number of patients	%
5-10 Years	824	38.2%
11-20 Years	746	34.6%
21-30 years	545	25.3%
Above 30 years	41	1.9%

Figure # 1; Sex distribution figure 1

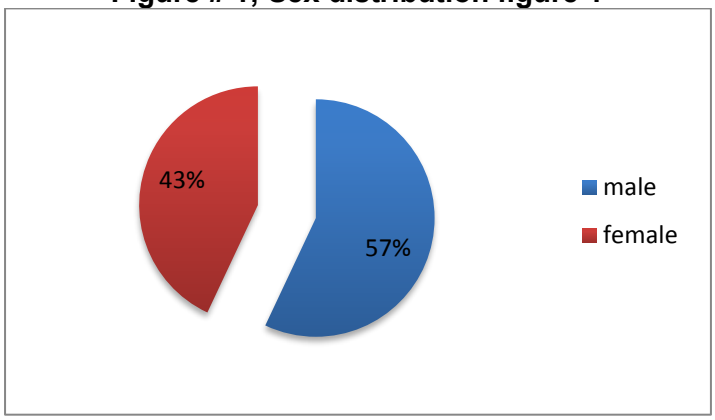

Table: 2 Clinical features

Symptoms	Number of patients	%
Sore throat	2084	**96.7%**
Obstructive symptoms	245	**11.4%**
Enlarged tonsils	2156	**100%**
Enlarge jugulodiagastric lymph nodes	1996	**92.6%**
Mouth breathers	582	**26.9%**

Table: 3 The most common complications of tonsillectomy

Complications	Number of Patients	%
Mild pain	1342	62.2%
Severe pain	288	13.3%
Nausea and vomiting	474	21.9%
Mild bleeding	323	10.8%
Severe bleeding	21	<1%

Table # 4: the less common complications of tonsillectomy

Complications	Number of Patients	%
Dehydration	121	5.6%
Infections	43	1.9%
Injury to teeth	56	2.7%
Edema of uvula	**67**	**3.1%**

Table: 5 rare complications of tonsillectomy

Complications	Number of Patients	%
Airway obstruction	4	.2%
TMJ disorders	2	.1%
Taste disorder	1	.05%
Pneumothorax	2	1%
Griesel's syndrome	1	.05%
Atlento-axial disloation	1	.05%

DISCUSION

Though tonsillectomy is a routine and safe surgery, but not without complications. Pain, nausea and vomiting, dehydration the morbid complications while bleeding and airway obstructions are the main causes of motility. According to large-scale study, almost all the patients undergone tonsillectomy have mild to moderate pain and nearly 50% experience severe pain, despite an appropriate around-the-clock dose of acetaminophen with codeine[12,13] Up to 89% of children undergoing tonsillectomy have post-op vomiting and nausea.[17] Bleeding, followed by hypo-volumic shock, is the most common cause of morbidity and mortality among patients undergoing tonsillectomy, affecting an estimated 0.5% to 10%. Approximately 1 in 200 patients returns to the operating room (OR) so that the bleeding can be controlled. Mortality from bleeding is 2 in 10,000 tonsillectomies. Most cases of fatal post-op bleeding occur within the first 24 hours after surgery[19, 20]. In USA, overall, 11.6% of patients revisit to hospital due to complications, which include bleeding (41.3%), acute pain (22.1%), and fever/dehydration (13.2%). Among all tonsillectomies, 4.8% of adult tonsillectomies presented with a bleeding and overall, 2.2% underwent a procedure to control bleeding at a first revisit.[38]

One study in India, 9.3 % were readmitted with hemorrhage with cold steel dissection method was 1.5 % compared to 6.7 % for Coblation, 6.3 % for bipolar dissection and 1.9 % for Helica thermal coagulation method. Overall consultants had a post tonsillectomy hemorrhage rate of 5.5 % and middle grades had a rate of 3.7 %. 86.5 % of the patients were already on routine prophylactic oral antibiotics at the time of presentation with hemorrhage needing surgical arrest and 13.5 % were not on antibiotics. There was statistically significant difference in secondary hemorrhage rate between Coblation and cold steel dissection methods. Coblation tonsillectomies had an increased need for operative intervention to control secondary hemorrhage. Routine use of antibiotic and expertise of operating surgeon had no bearing on secondary hemorrhage rate.[39]
In another study, use of dexamethasone showed significantly less postoperative early vomiting, significantly less pain and less painful swallowing after tonsillectomy.[40]

CONCLUSION

Though tonsillectomy is a routine and safe surgery can result in morbid complications and can cause death. By adopting important pre and per-op basic steps can minimize the complications of tonsillectomy while proper management of these complications can minimize the resulted morbidity and mortality.

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