Tonsillectomy By Dissection Under Local Anesthesia(Indication-Operative- Procedure –Complication -15 Years Practice)

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ABSTRACT:

BACGROUND:

Although tonsillectomy is one of the most frequent surgical procedure practiced its indication and operative procedure remains controversial. There is an increased economic pressure to be done as an outpatient procedure . Hemorrhage is main complication other rare complication is asthmatic attacks precipitation in allergic patients.

OBJECTIVE:

To determine the indication. Operative procedure.Complication namely hemorrhage and allergic aggravation

METHODS:

Aretrospective review of T'S under L.A done for 962 patients from june1993-august2008 in Baquba and Sulaiymani teaching hospital partially because of G.Adrug shortage during sanction or because of G.A contra-indication absolutely or relatively .precise block anesthesia of lesser palatine and glossopharyngeal sensory nerve supply to tonsil is practiced with removal of tonsil by dissection

RESULTS:

Most patients operated on because of recurrent acute tonsillitis (926) of these 20 patients with nasal allergy 4patients of them with bronchial asthma, [12]patients with associated cardiac or renal problem, [16]patients with UAO or sleep apnea,[4]patients with enlarged suspected malignancy, [4]patients with peritonsillar abscess, (50)patients developed exaggerated gage reflex but not hindering the operation , [12]patients developed primary bleeding, [2]patients secondary bleeding. None of allergic patients developed asthma during the practice period.

CONCLUSION:

T'S by L.A have a place in surgical practice especially in allergic patients.Allergic aggravation and asthmatic precipitation may be due to G.A and not T'S per se.The operation is of shorter duration and hospitalization than under G.A. Peroperative and secondary bleeding are less than G.A and of less pain severity post-operatively than under G.A.Exaggerated gage reflex not hindering the operation .

KEYWORDS: local anesthesia .hemorrhage .allergic patients .indication .post operative complication

INTRODUCTION:

The first known removal of tonsil dates back to the first century AD when Cornelius celsius in Roma used his finger to do it [1] Dissection *T'S first described by Edwin pynchon1890[2].T'S is not an easy operation and must be viewed with respect due to its potentially fatal outcome which related in away or other to hemorrhage and possible need for *G.A to control it.[3]The sensory supply is by glossopharyngeal nerveand maxillary division of *V nerve [4].Current absolute indications for T'S are adenotonsillar hypertrophy with sleep apnea, failure to thrive. abnormal dental and facial growth, suspicion of malignancy, and hemorrhagic tonsillitis. .Relative indication includes tonsillar hyperplasia with UAO.dysphagia ,Speech impairment, Halitosis, Peritonsillar abscess, Recurrent or chronic pharyngotonsillitis and streptococcal carriers[5]SurgicaL teckniques for T'S are by Guillotine, Tonsillotome, Dissection snare, Electrodissection, Laser dissection, Coblation, Harmonic scalpel dissection, Radiofrequency dissection.Power tool dissection[4]The L.A used commonly is xylocaine (Lignocaine)1-2% Lignocaine It is mild vasodilatorand is often given with vasopressin e.g. adrenaline1:100.000-1:200.000.Maxium dose is 3mg/kg without adrenaline or7mg/kg with adrenaline. duration of

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action is 90 minutes without adrenaline. Vasopressors combined with L.A agent reduces systemic toxicity risk. Intraoperative bleedingand prolong the duration of action[4]Agent toxicity depends on total dose andblood flow to the area and commonly results from direct intravascular injection or rapid absorption via mucous membrane. Systemic effects includes:

CNS;Lightheaddness,perioral anesthesia, slurred speech, tinnitus, facial twitching, convulsion and coma.

CVS; bradycardia, hypotension, cardiac arrest

RS; tachypnoea followed by respiratory depression, hypoxia and cardiac arrest If toxicity is suspected stop injection and 100%o O2 given[7]

METHODS:

Over 15years period from June 1993- to August2008, 962 Patients were managed by the author at Baquba and Sulaimanyia teaching hospital, underwent T'S by dissection under L.A for different causes mainly recurrent tonsillitis. Indications were discussed with patients and prior consent had been taken from those with nasal allergy and in whom T'S is absolutely indicated that there is possibility of asthmatic attack precipitation and they need to be followed up for that possibility for 1year or to inform any time after that if developed asthma

T'S: Tonsillectomy, *L.A: Local anesthesia, *G.A: General anesthesia,* V: Trigeminal Nerve , UAO:Upper Airway Obstruction , CNS; Central nervous system CVS; Cardiovascular System RS; Respiratory System , *C.N: Cranial Nerve

They had the necessary hematological investigation. cardio-pulmonary and renal evaluation were carried out

accordingly in addition to full E.N.T examination.All patients were assessed for gag reflex.

Operations were done by dissection under L.A in a well-sedated state by i.v. 10 mg valium 1 hour pre-operatively or fentanyl (50-100mg) given I.V on operating table and metoclopramide (5- 10 mg) in those with anticipated strong gag-reflex.The patients is positioned in a sitting or semisitting position.2-3 ml of 1or2% xylocaine is infilerated in upper pole near the anterior and posterior pillar junction submucosally and.along anterior pillars ballooning the infiltrated region another 2ml is infiltrated in the lower pole.1-2ml injected beneath the tonsillar capsule using the dental syringe by holding and reflecting the anterior pillar with long(Hughes) pens intending to block the sensory supply of Lesser palatine nerve and *9thCN. The operation started by doing incision with no 15 blade over along holder near the mucosal reflection from anterior pillar on tonsil starting dissection in the loose areolar tissue beneath tonsillar capsule using dissector with sharp end toward tonsil rather than tonsillar bed. the tonsi is pulled medially and downward by tonsil holding forcipes meanwhile the blade of holding forcipes is pressing the tongue over the mouth floor to facilitate the appearance of lower tonsil the dissection is aided by necessary suctioning with yankauor suction tube carried out by an assistant the dissection is continued downward until the tonsil is freed completely from its bed and pediculized on the tongue then removed by snare and homeostasis is secured by application of moistened gauze pack in the tonsillar bed for3-5minutes. Other tonsil is dealt with similarly. Nearly 98%of patients homeostasis is secured by this way other2% by ligation. Galvanocautery, diathermy or by gauze pack soacked with 2:1 H2O2:N.S or1:1000 adrenaline applied firmly over its bed for few minutes. No patient necessitated G.A The overall time lasting was 15-30 minutes including the anesthesia time the estimated blood loss was 15-60ml. Patient is discharged from operating theater to recovery room waiting for half hour until the effect of L.A wear off meanwhile dealing with another patient.And discharged after 2-3hour when the start of pain controlled by paracetamol or diclofenac injection or orally.

RESULTS:

Of 962 patients female were501 (52.1) male were461 (47.9) The female: male ratiowas1.1:1 the mean age was33 years (8-58) for females and 30.5 (9-52) years for male The surgical indication as shown in table 1 were; recurrent acute attacks (919) patients of these 20 patients of nasal allergy in whom T'S is absolutely indicated 4 patients of them with bronchial asthma. [12] Patients of chronic tonsillitis associated with renal or cardiac problem. [16] Patients with UAO or sleep apnea. [4] Patients unilateral enlarged suspected malignancy. [4] Patients peritonsillar abscess. [2] Patient infertility. Systemic diseases associated with chronic tonsillitis as shown in table 2 were; renal problem [9] patients cardiac problem including valvularand congestive.heart disease[3] patients. Thalassemia[1]patient. Sickle cell anaemia[1] patient. Infertility [2] patients

Table 1 : Indication for Tonsillectomy

	Male	Female	Total
Recurrant attack of Tonsillitis	437	482	919
UAO with sleep apnoea	11	5	16
Chronic Tonsillitis with renal problem	6	3	9
Chronic Tonsillitis with cardiac problem	2	1	3
Peritonsillar abscess	3	1	4
Unilateral enlargement with suspected malignancy	2	2	4
Chronic Tonsillitis with infertility	0	2	2
	461	496	957

Table 2:Associated systemic diseases with chronic tonsillitis

Renal problem	9 patients
Valvular heart disease	2 patients
Cor- pulmonale	1 patients
Thyrotoxicosis	3 patients
Thalasemia	1 patients
Sickle cell –anemia	1 patients

H2O2: Hydrogen Peroxide ,N.S: Normal Saline , C.N: Cranial Nerve , ENT : Ear Nose Throat
Recorded operative and post- operative complications were as listed in table 3 below.

Table 3: Operativeand post- operative complication

complication of Tonsillectomy	No. of patients	Treatment
Exaggerated gage reflex	50	Metclopromide 10 mg. inj.
Primary hemorrhage	7	H2O2 packing or ligature
Reactionary hemorrhage	5	H2O2 packing or ligature
Clot in tonsillar fossa	5	Removal and H2O2 packing
Secondary hemorrhage	2	Conservatively
Swelling and submucosal ecchymosis of uvula and soft palate	13	Conservatively
Facial palsy (temporary)	2	Recovered spontaneously
Parasthesia of side of tongue and numbness of lip	8	Recovered spontaneously
Cardio pulmonary insufficiency	2	Oxygenation +resuscitation
Asthmatic attack precipitation	??1	
Tonsillar remnant (lower pole)	2	

Data related to amount of blood loss .operative time .doses of drug used is shown in table (4)

Table 4:Data related to Tonsillectomy

Estimated Blood loss	20- 60 ml
Operative time	15- 30 minutes
Local anesthesia (1- 2% xylocaine + adrenaline)	8 – 12 cc
Sedation(valium or fantanyl)	10 mg for valium-50-100mg for fantanyl

All the patients with exception of those with primary hemorrhage were discharged within 2-3 hours after operation

DISSCUSION:

T'S is not an entirely a benign surgical procedure.The study revealed that the most frequent indication for T'S is recurrent acute attacks among whom there are certainly patients with seasonal or

perennial nasal allergy and for them T'S had been done whether optionally or inadvertently and in our study we did 20 patients and they followed for 12 months no one developed asthma except one patient who developed 3years after T'S and 2months after cholecystectomy under G.A which may be attributed to the effect of G.A drug.4 patients with bronchial asthma done on account of G.A untolarability none of them developed attack during operation or at least during early post-operative period (2-3weeks) of follow up which may be attributed to adrenaline effect on bronchial muscle peroperativelyor in door staying post-operatively although some authorities attribute development of asthma post-operatively to T'S under G.A Roger F Gray and Maurice Hawthorne[8].Those patients of chronic tonsillitis with renal or cardiac problem submitted to surgery underLAon account of G.A contra-indication or refusal by anesthesiologist and this devoid the patients G.Ahazard especially in those with poor renal function.Those with thyrotoxicosis also submitted because of G.A refusal or long duration to control the thyrotoxic state to secure the G.A fitness.Those with suspected malignancy underwent unilateral T'S for 3 lymphoma patients and wedge resection for1patient with suspected carcinoma.and this idea is supported by D.L.Cowan,John Hibbert,Scott [9]. The L.A devoid the patients the hazards of G.A and probability of implantation of malignant cell on injured pharyngolaryngeal mucosal surfaces by advanced tip of anesthetic endotracheal tube in an already compromised passages by an enlarged tonsillar mass.Those with quinsy have the same benefits of avoiding the hazards of G.A because of the possibility of rupturing the abscess during intubation and possible inhilation although T'S is not the standard treatment for quinsy as backed by D L Cowan John Hibbert.Scot- Brown of Otolaryngology[9] Regarding peroperative heamorrahage it was much less than under G.A this result is suggested but was not proved definitely by Cochrane review [10]. Primary bleeding had 1-1.2% the same of G.A[9].Secondary hemorrhage carries the percentage of 0.02% which is very low in comparism to 2-4% ofG,A byD.L Cowan[11].Aresult of 0.4% obtained by Alexander RJ,Kukreja R[12]this is attributed to relatively shorter operative time and less use of cautery or ligatures 2 patients with temporary facial nerve paralysis secondary to deep injection in tonsillar fossa peneterating superior conestractor muscle to parapharyngeal space encroaching on facial nerve on deep lobe of parotid gland apatient report by Lev Shlizerman, ,Dror Ashkenazi, [13]and backed by Ford LC,Cruz RM(14).Two patients of parathesia of sides of tongue due to encroachment on lingual nerve during lower pole infilteration by deep injection again quoted by Ford LC[14].Peroperative gag reflex was faced in nearly 50patients in avariant degree.but controlled by stopping the procedure temporarily or the usage of metclopropamide whether peroperatively or pre-operatively when anticipated during mouth examination. Post operative pain was much less in intensity and of shorter duration than G,A disappearing mostly on8-9th post-operative day while persisting mostly till the 12-14thday under G,A and more intense as revealed by interviewing and asking the patients during follow-up. This is explained by the continuing action of L.A for hours post operatively and because of rare use of cautery or ligaturs this idea is supported by HollisLJ,BurtonMJ[15] whereas contradicted by EgeliE,Harputluoglu,et al in his study on paediatric T'S[16] which may be explained by less incidence of pain or even painless T'S in pediatric age group. Two patients developed mild degree of cardio-vascular toxicity treated by temporarily stopping the operation for 10-15 minutes.i.v fluids oxygenation and i.v valium.Two patients with mild lower pole tonsillar remnant which is acceptable with this no of T'S. Regarding the hospitalization and discharge time our study supports the idea of outpatient T'S as a safety procedure an idea supported by Matthew T.Brigger and Scott E.Brietzke [17] study of evidence-base review of outpatient tonsillectomy in children; systemic review.

CONCLUSION:

T'S under L.A is advised in allergic patient when it is indicated reasonably or those with suspicious allergy and when G.A is contra-indicated absolutely or relatively for reason or other.Allergic aggravation and asthmatic attack is not due to T'S persi but general anesthesia has arole.The operation under L.A is of shorter duration and hospitalization.Bleeding peroperatively is much less than under G.A..Less incidence of secondary hemorrhage.Pain of less severity post-operatively by interviewing and comparing them with those who underwent T'S under G.A by same author.Exagarated gag reflex is amenable to reduction and not hindering the operation

RECOMMANDATION:

T'S under L.A recommended in allergic patients and those with bronchial asthma when absolutely indicated.T'S under L.A must be taught as a demonstration for E.N.T post-graduate doctors. further study supported by immunological assay is suggested in those allergic patient undergoing T'S whether under L.A or G.A optionally or inadvertently

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