

# [History amont(1).remington-hobbs described the use of monopolar](https://assignbuster.com/history-amont1remington-hobbs-described-the-use-of-monopolar/)

Historythe tonsils are organsof lymphoid tissues located at the entrance of the respiratory & digestivesystem(1). The first tonsillectomy known was operated by Cornellus Celsus, 2000years ago(2).

Recent tonsillectomy started at the beginning of this century bythe apearance of tonsillectomy dissection in Balitmore by  Worthington(1907) & in London byWaugh(1909) & Guillotine tonsillectomy in New Castle by whillis andPybus (1910). Vessls ligation in the tonsillar fossa was extremely difficult& first done by Cohen in 1909(3)In1960, the laser of CO2 introduced in medicine & the first use of it intonsillectomy was in 1973. Otolaryngology was the first surgical branch in whichthe laser used succissfully in great amont(1).

Remington-Hobbs described the useof monopolar diathermyin tonsillectomy in 1968(5) , Andrea defined the firstmicrosurgical bipolar cautery technique in 1993 (6) universally, tonsillectomy is the most frequinly performed otorhinolaryngological    procedures(4). At the bigining tonsillectomywas performed by ageneral sureons, but later became the operation ofotolaryngologist . The progress of tonsillectomy occured by the apearance ofmouth-gag & tongue depressor in addition to thepositioning of patient with leaning and suspended head . this position wasdescribed first by Killian in 1920(1). In the USA, it is estimated that 1, 400, 000tonsillectomy operation done  in1959, around 500, 000 in 1979 & 250, 000 onse/ year in the last decade, so atthe initial period tonsillectomy was done frequinly because many diseasesfaulty attributed to to tonsils as a focus of infection. but later due toabscence of convincing results, this procedure lost its influince & No. ofoprations decreased gradually. Also advancement in the use of antibioticcontributed on this reduction of tonsil removal(1) Anatomyplatine tonsilsare one of the component of Waldeyer’s ring which form acircular band oflymphoid tissues in the pharynx in addition to the adenoids & lingualtonsils.

the palatine tonsils have germinal center & distinct capsule incontrast to to adenoid & lingual tonsil which separat it from thepharyngial wall. the tonsilar fossa consist of three muscles , the anteriorpillar is the palatoglossus muscle and the posterior pillar is thepalatopharyngeus muscle & the bed of the fossa formed by the superiorconstrictor muscle . in the tonsils there is  crypts exposed to the oropharynx , covered by  stratified squamous epithelium(7). . Bloodsupply of the tonsils: the palatine tonsils blood supply is variable, they aresupplied by several branches of the external carotidartery: ·       ascendingpharyngeal, ·       ascending palatine,·       and branches of thelingual and facial arteries. The blood supply enters from the lower pole of the palatine tonsil. The internal carotidartery (ICA) lies approximately 2 to 2. 5 cm deep and posterolateral to the palatine tonsil; howevr case reports  exist ofaberrant ICA courses which come within 1 cm ofthe inferior pole.

The ICA may have a tortuous and convoluted course of which the surgeon must be cognizant. Venous drainage is by way of a peritonsillar venous plexus, which surrounds the capsule and drains into thelingual and pharyngeal veins (8)thenerve supply of the tonsil arise from the glossopharyngial nerve & branchesfrom the lessr palatine nerves. the tympanic branch of the glossopharyngialnerve cause the rffered ear pain found in tonsilitisinthe tonsil there is no afferent lymphatic vesselesbut the efferent vesselesdrain  to the upper cirvical lymphnodesthrough the jugulodigastric group. Tonsils & adenoid are immunologicalyactive between the age of 4-10 years & involute after puberty(9)indication:    Absolute1. Obstructive sleep apnea2. Suspected malignancy3. Hemorrhagic tonsillitis4.

Cardiopulmonary complications secondary to airway obstruction (e. g., corpulmonale, 5. Tonsillitis causing febrile seizures    Relative1. Recurrent acute tonsillitis according to  the following criteria:? Seven episodes in 1 year? Five episodes/year for 2 consecutiveyears? Three episodes/year for 3 consecutiveyears? Two weeks of missed school or work in 1year2.

Chronic tonsillitis refractory to antimicrobial therapy? Peritonsillar abscess3. Tonsillolithiasis with associated halitosis and pain, unresponsive toconservative measures? Dysphagia due to tonsillar hypertrophy(10) Contraindications•leukemia, hemophilia, agranulocytosis, uncontrolled systemic disease(diabetes, TB)•Relative Contraindications: cleft palate, acute infection(11)Types of Tonsillectomy Procedures: Thetechniques of Tonsillectomy can be divided into 2 categories: extracapsular(total tonsillectomy, subcapsular) and intracapsular (subtotal, partialtonsillectomy), or called tonsillotomy is some litritures  Extracapsular tonsillectomy involvesdissecting the tonsil in the plane between the tonsillar capsule and thepharyngeal musculature, and the tonsil is removed as a single unit. Partial tonsillectomy, involvesremoving  of most of the tonsil, but preservinga rim of lymphoid tissue and tonsillar capsulePreservationof this rim of lymphoid tissue, as a “ biologic dressing,” may promote recovery, with lower hemorrhage rates and better recovery of diet and activity comparedwith traditional monopolar tonsillectomy techniques. The commonest  extracapsular techniques are  “ cold” knife, monopolar electrocautery, bipolar cautery & harmonic scalpel, while the commonest intracapsulartechnique are bipolar radiofrequency ablation (also can remove the entiretonsil), microdebrider & carbon dioxide laser(12)Accordingto the latest survey of members of the American Academy of Otolaryngology andthe American Society of Pediatric Otolaryngology, electrocautery is thepreferred method for tonsillectomy by roughly 55% of Otolaryngologists.

Coblation tonsillectomy is estimated to be the preferred method by 20%–25%, coldsteel techniques by 10% and other techniques including microdebrider partialtonsillectomy by the remaining 10%. Although popular, the electrocauterytechnique has its drawbacks as it has been shown to be a more painful surgerythan cold techniques, due to the additional thermal injury inflicted upon the exposedmusculature. Recently, there has been increasing interest in performing apartial tonsillectomy, or tonsillotomy, to maintain the tonsillar capsule andreduce postoperative pain and bleeding. As with every surgical technique, intracapsular tonsillectomy also has its drawbacks. Large case series haveshown that tonsillar regrowth occurs in about 0.

5%–6% of patients with asmaller percentage requiring completion tonsillectomy. The operation takesseveral minutes longer than electrocautery tonsillectomy, which adds to thesurgical costs. Intraoperative blood loss is greater but appears to not beclinically significant. The role of intracapsular techniques for managingchildren with recurrent tonsillitis is still unproven though initial studies areencouraging for this indication.(13)  The conventionaltechniques are commonly used in most hospitals worldwide because they do notrequire any expensive machines(25)Coldsteel  tonsillectomyThemost common method of ‘ cold steel’ tonsillectomy is the dissection technique (Figure96.

2). In this, the tonsil is retracted medially, the mucosa overlying thetonsil capsule incised and the plane of loose areolar tissue between the tonsiland the pharyngeal musculature dissected with steel dissectors, gauze or cottonwool until the tonsil is fully mobilized (Figure 96. 3).

Blood vessels traversingthe plane of dissection are dealt with either by ligature or diathermy asrequired. (14)Afterremoval of tonsils  tonsil, the  bleeding  from the from the lower pole is controledeither by mechanical methods (sanare or ligation) (15)Analternative method of ‘ cold steel’ tonsillectomyis the guillotine technique, whereby the tonsilis amputated using a specially designed guillotinedevice and haemostasis, secured as necessary by oneof the above methods. Of these two techniques, traditionaldissection remains the most frequently used.

(14)Advantagesand disadvantages of the techniquesthere is argument regarding the benifit of different tonsillectomeis technique. somestudeis assume that the intracapsular technique result in less post operativepain in addition low risk of tonsil regrowth. for the extra capsulartechnique, cold knife technique associated with less posoperative pain comparedwith an electrocautery which is faster & has less  loss of intraoperative blood. it is unkownwhich technique has the lowest post operative bleeding rate the available datasuggest that  there is no variation inthe bleeding rates between different techniques(12)Post-tonsillectomy bleeding : tonsillectomyis one of the most common surgical procedure performed in the world, varioustechniques have evoled over the years but the percentage of PTB is still almostthe same & concedered as the most significant complication(16) The risk of bleeding is present even when the operationis done by the best surgeons in spite of using the most meticulous haemostasistechniques(17) Haemorrhage’was defined as a bleed that prolonged the patient’s hospital stay, requiredblood transfusion, a return to the operating theatre, or in the case of ‘ secondary’ haemorrhage readmission to hospital(18) Post-tonsillectomy bleeding  is divided into two types: primary bleeding  occurring within 24 hr  and secondary bleeding  occurring at any point more than 24? h aftertonsillectomy .

The overall bleeding  rate is around 4. 5% , with reported ratesof 0. 2–2. 2% for primary and  0. 1–3. 5% forsecondary bleeding. (19) .

The mortality has been reported to be between 1 per 1100 and 1per 16000 (20)primary bleeding ismore serious than the secondary one because  it usually occur when the pateintresponsiveness & protective air way reflexes are attenuated  by post anesthetic or narcotic effect, furthermore , the 1ry bleeding  is uasually morebrisk & profuse than secondary one(21) primarybleeding is usually related to operative technique,(22) inadequate hemostasisduring the surgery(19)early loss of spasm of the blood vessels in the tonsillarfossa, & insuficient blood clotting(22) Secondary bleeding  is associated with detachment of the crustfrom the site of the removed tonsils.(19) advice on postonsillectomy deit (22) risk factors generally associated with PTBinclude  age sex, previous hx ofpreitonsillar abscess, smooking, HT, use of NSAID ,& season when the op isperformed(22)Risk factors for postoperative bleedingAgeThe age of patients  is usually consedered a major risk factor forthe occurrence of bleeding, the older patients being at higher risk   (19)SexThere is a discrepancy concerning sex as a riskfactor for postoperative bleeding. Some authors found a positive correlationfor male patients being at higher risk  and others did not   (19)Operationtechniquesoperative techniques have been investigated in more detail, finding a statistically significantly higher or lower postoperative bleedingrates for different operative techniques ? for example, bipolar diathermytechnique shows higher bleeding rates in comparison with cold steel dissection technique(19) Preoperative hemoglobin level and anemia There were no significant statistical difference regarding thepreoperative hemoglobin level in the occurrence of post-tonsillectomy bleeding. Postoperative infection of tonsillar fossaA study from 2007 showed that postoperative infection of thetonsillar fossa is not a risk factor for secondary bleeding , but  another study foud a positive relationshipbetween preoperative bacterial colonization of the tonsillar fossa andpostoperative bleeding, recommending use ofantibiotics .

However, prescribed antibiotics did not reduce the risk forpost-tonsillectomy bleeding in general(19) Mechanism of hemostasisThere are two main components of hemostasis. Primaryhemostasis refers to platelet aggregation and platelet plug formation. Platelets are activated when they  are exposed to subendothelial matrix, and as a result they adhere to the site of injury and toeach other, plugging the injury. Secondary hemostasis refers to the depositionof insoluble fibrin, which is generated by the proteolytic coagulation cascade. This insoluble fibrin forms a mesh that is incorporated into and around theplatelet plug. This mesh serves to strengthen and stabilize the blood clot. These two processes happen simultaneously (23). hemostasis  by suture ligation isthought  to  be initiated after tonsillectomy by 1ryhemostasis, on the other hand  hemostasisby snare technique is thought to be initiated after tonsillectomy by crushing(2ndry hemostasis) (24)