

Impact of Clinical Practice Guidelines on Clinicians' Behavior in Children and Adults Tonsillectomy

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Received: April 05, 2020; Accepted: April 15, 2020; Published: April 23, 2020

ABSTRACT

OBJECTIVE

This study was conducted to assess the extent to which the otolaryngologist implemented the clinical practice AAO-HNS Guidelines (American Academy of Otolaryngology –Head and Neck Surgery guidelines criteria as delineated by Paradise) for tonsillectomy.

SETTING

Outpatient cohort study of largest HMO in Israel encompassing 5 of the major teaching hospitals.

SUBJECTS AND METHODS

The HMO registry from 1.1.2011 until 31.12.2014 were examined, all of the medical criteria for Tonsillectomy (tonsillectomy, tonsillotomy, adenoidectomy, and adenotonsillectomy), were extracted from each patient record, and the appropriateness criteria's were noted.

RESULTS

Total Tonsillectomy in the pediatrics age group declined from 47 in the year 2011, to 36 per 1,000 per person-years in 2014, statistically significant between 2011 and 2012 $p < 0.05$, 2011 and 2013 $p < 0.001$, and 2011 and 2014 $p < 0.001$ mostly due to decline in the 0-11 years, while the number of adult Tonsillectomy did not varied through the study years. Also the justified Tonsillectomy as per AAO-HNS Guidelines had risen through the years, from 111 (20.5%) and 97 (20.1%) in the years 2011 and 2012 to 149 (31.6%) and 132 (28.5%) in the years 2013 and 2014, statistically significant between 2011, 2012 and 2013, 2014 ($p < 0.004$ and < 0.007 respectively).

But despite the improvement in implementation of the Guidelines the majority of Tonsillectomy in each year were unwarranted and did not comply with the Guidelines, even though we noticed decline in the unwarranted tonsillectomies from 428 (79.4%) in the year 2011, to 332 (68.7%) and 332 (71.5%) in the years 2013 and 2014, $p < 0.007$ and $p < 0.001$ respectively. Most of the decline in the unwarranted Tonsillectomy was in the number for recurrent sore throat criteria of Guidelines, those patient's that had too few episodes too few episodes of sore throat to warrant surgery, while the majority of the unwarranted Tonsillectomy were done for the

Citation: E. Michael Sarell, Impact of Clinical Practice Guidelines on Clinicians' Behavior in Children and Adults Tonsillectomy. Clin Surg J 4(2): 41-49.

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diagnosis of hyperplasia or hypertrophy of the tonsils, without any special concomitant medical condition as required by the Guidelines.

CONCLUSION

Although there was an overall a mild increase in population adjusted performance rates of justifiable Tonsillectomy procedures specifically for infectious indications from 2011 to 2014, there were still over 70% unjustifiable Tonsillectomy according to AAO-HNS Guidelines.

ABBREVIATION

AAO-HNS - American Academy of Otolaryngology- Head and Neck Surgery; ENT - Ear Nose and Throat; PFAPA - Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Adenitis; SDB - Sleep Disorder Breathing; OSA - Obstructive Sleep Apnea. Guidelines - American Academy of Otolaryngology - Head and Neck Surgery guidelines criteria as delineated by Paradise. Tonsillectomy - tonsillectomy, tonsillotomy, adenoidectomy, and adenotonsillectomy.

1. INTRODUCTION

Tonsillectomy (tonsillectomy, tonsillotomy, adenoidectomy, and adenotonsillectomy) are the most common elective surgical procedures in the western world, in United States, the procedure is performed annually in children younger than 15 years, at rate 15.3 per 10,000 children [1] in Canada 19 per 10,000 children, in Northern Ireland 18-19 per 10,000, in Finland the rate is to 76 per 10,000 [2] and in Germany every year 48 of 10,000 children and adolescents undergo Tonsillectomy [3].

Tonsillectomy is a surgical procedure with an associated surgical morbidity that includes hospitalization, risks of anesthesia, prolonged throat pain, and financial costs. The secondary drawback of the procedure is reduced immune function in the early stages after the operation [11].

Other complications less common also had been well described as operative complications that include trauma to the teeth, larynx, pharyngeal wall, or soft palate; difficult intubation; laryngospasm; laryngeal edema; aspiration; respiratory compromise; endotracheal tube ignition; and cardiac arrest were described in the literature [6], injury to nearby structures including lip burn, eye injury, and fracture of the mandibular condyle. We also are concern about postoperative complications include nausea, vomiting, pain, dehydration, referred otalgia, post-obstructive pulmonary, edema, velo-pharyngeal insufficiency, and nasopharyngeal

stenosis [7]. In addition, many unusual and rare complications of tonsillectomy have also been described. Among these are reports of vascular injury, subcutaneous emphysema, jugular vein thrombosis, atlantoaxial subluxation (Grisel syndrome), taste disorders (hypogeusia, ageusia, dysgeusia, and phantogeusia), and persistent neck pain (Eagle syndrome) [9].

After tonsillectomy, about 1.3% of patients experience delayed discharge during the initial hospital stay, and up to 3.9% have secondary complications requiring readmission [8]. The primary reasons for readmission or prolonged initial stay included pain, vomiting, fever, and tonsillar hemorrhage [5]. Post tonsillectomy bleeding during or after the surgery is common, the rate of primary hemorrhage (within 24 hrs of surgery) has ranged from 0.2% to 2.2% and the rate of secondary hemorrhage (more than 24 hours after surgery) from 0.1% to 3% may result in readmission for observation, or in further surgery to control bleeding [4].

Mortality the most fearful complication of Tonsillectomy although rare has been estimated between 1 in 16,000 to 1 in 35,000, based on data from the 1970s [10]. There are no current estimates of Tonsillectomy mortality, but in malpractice claims after Tonsillectomy, airway compromise is the major cause of death, while about one-third of deaths are attributable to bleeding, and the remainders are related to

cardiopulmonary failure, electrolyte imbalance, anesthetic complications [12].

Specifically due to the elective nature of this procedure and the multitude of complication, indications for surgery were adopted in United State and Canada [13] and European countries as Austria, Italy and France, Croatia, Germany, Spain, England and the Netherlands [14-19] have issued similar recommendations for tonsillectomy as the AAO-HNS Guidelines- (American Academy of Otolaryngology - Head and Neck Surgery guidelines criteria as delineated by Paradise).

This study was conducted to assess the extent to which developing and implementing the clinical practice Guidelines for Tonsillectomy influenced the behavior of participating ENT (Ear Nose and Throat) surgeons.

2. SUBJECTS AND METHODS

Data Source and Ethics: The study received institutional review board approval. We conducted a retrospective review computerized medical records for all patients that had Tonsillectomy, over a 4 years period from 1.1.2011 until 31.12.2014 of Dan Petach-Tiqua Region a part of Central-Health Maintenance Organization (HMO) in Israel, not for profit government-controlled, mandatory-enrollment, payer system with a current coverage rate of 52% of Israeli population. Dan Petach-Tiqua is combines' urban and rural environment, approximately 436,357 members and surrounded by 5 tertiary hospitals and 4 private hospitals.

3. STUDY DESIGN

The design of the study was aimed to provide evidence to the effect of the Guidelines on the decision made by ENT surgeons in selecting patients for Tonsillectomy. All the medical records were retrospectively reviewed for the 3 years prior to the day of the surgical Tonsillectomy. Each subject was assigned to the group in accordance to the criteria found in his medical history and or described by his ENT - surgeon as the main justification to the Central - HMO controller or to the Mushlam - additional privately supplemental insurance controller for the pre- approval permission for approving payment for the surgery (the out-

of -pocket paid supplemental Mushlam to the main HMO health insurance covers 73-79% of our region members, and allows surgeries on immediate availability and in private hospital setting). If more than one criteria was appropriate we acknowledge all of them.

4. INCLUSION

All patients that had any surgical procedure to the oral-pharynx region were included. In Israel until age of 16 years old pediatric ENT surgeon attends patient's needs, and from the 16 years old birthday and forward an adult otolaryngologist follow's them. So in this study we used the same age delineation in separating the two groups pediatrics and adults.

Study Outcomes measures

The primary outcome for this study was the prevalence of Tonsillectomy once Guidelines was put into practice. The secondary outcome measurement was the relations between justifiable and unwarranted tonsillectomy throw the years in regards to implementation the Guidelines (AAO-HNS Guidelines was used as the representing guidelines because it is used in multiple countries including Israel, and accepted by most of the HNS-surgeons in the world, furthermore, because it is the most comprehensive and the variation with other countries was small and had no bearing on this study).

The Guidelines criteria's are set in 4 main groups:

1- "Recurrent sore throat with documentation" patients having throat infection in a frequency of at least 7 episode in the past year, or 5 episodes at least per year for last 2 year, or 3 episodes at least per year for past 3 years, all episodes needed documentation in the medical record, and in addition one or more of the followings: temperature $>38.3^{\circ}\text{C}$, cervical adenopathy larger than 2 cm, tonsillar exudate, or positive test for group A b-hemolytic streptococcus (GABHS). If not fully documented, subsequent observance by the clinician of 2 episodes of throat infection with patterns of frequency and clinical features consistent with the initial history.

2- "Recurrent sore throat infection with modifying factors" patient who suffered from multiple throat infection for at least 2 years prior to Tonsillectomy but did not meet the full 1st criteria of recurrent sore throat, but despite that had modifying factors that may lead to significant morbidity and afflicted with a pattern of illness influencing the recommendation for Tonsillectomy. Two subgroups of modifying factors are included in the persistent sore throat: (a) an exceptions to recognized criteria based on individual features of illness such as multiple antibiotic allergies making treatment difficult or unavailable, or severe sore throat mandating frequent and prolog school / work absentees (b) specific clinical syndromes such as PFAPA (Periodic Fever, Aphthous stomatitis, Pharyngitis, and Adenitis), PANDAS (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections, recurrent tonsillitis associated with peritonsillar abscess or retropharyngeal abscess.

3- "Special medical conditions requiring Tonsillectomy" patient that had some degree of sore throat not but not with necessary documented proving the diagnosis of recurrent sore throat as the Guidelines delineate, but despite lack of documentation the refereeing physician and or the ENT-surgeon felt that certain complex medical condition mandated Tonsillectomy. This condition included such medical entities as obesity, Down's syndrome, craniofacial abnormalities, neuromuscular disorder, sickle cell disease, mucopolysacchariodes or that the pattern of illness may influence a more severe comorbidity, as are patients with disruption of normal ventilation patterns, dental malocclusion, severe dysphagia, illness adversely affecting orofacial growth, chronic nasal respiration obstruction, or nasopharynx infection not responding to maximal medical therapy as peritonsillar infection with persistent foul taste, or breath , or chronic persistent- tonsillitis, or recurrent suppurative ear infection, or chronic otitis media with effusion, or chronic sinusitis or sore throat with fever leading to febrile seizures, and tonsillar neoplasia.

4- "Sleep-disordered breathing (SDB)" referred to patients with snoring representing partial upper airway obstruction

representing enlarged adenoids with narrowing of posterior nasal airway associated with oxygen desaturation on overnight pulse oximetry, or a positive video and audio recording of children while sleeping or the abnormal apnea-hypopnea index (AHI) on polysomnography of Obstructive Sleep Apnea (OSA) to patients who also have tonsillar hypertrophy, or noisy breathing at sleep-associated disorder with disturbance in the quality of life as growth retardation, or poor school performance, enuresis, associated with behavioral problems at daytime, such as excessive sleepiness, inattention, poor concentration, and hyperactivity.

5. STUDY PROTOCOL

One problem with comparison between diverse medical professionals as pediatrician, family physician, ENT-surgeons, general physicians, medical department in house physicians , Emergency Department (ED) and outpatients clinics attending physicians, is the different and imprecise terminology; We assessed the symptom-specific attributes and the following definitions correspond to the majority opinion and they were used consistently within this paper as such.

Sore throat - Synonym with acute sore throat, throat infection; acute tonsillitis; acute tonsillitis with or without adenitis; acute pharyngitis, tonsillopharyngitis; all referred to a single attack of viral or bacterial throat or tonsillitis infection with combined odynophagia, swelling and redness of the tonsils, possibly with tonsillar exudate, cervical lymphadenopathy and fever $>38.3^{\circ}\text{C}$, that end up within short period. Streptococcal laryngitis or pharyngitis or tonsillitis refers to the sore throat that in addition to the clinical signs and symptoms described above had also a positive throat swab or rapid antigen test for streptococcal group A beta hemolytic.

Chronic sore throat - Synonyms with recurrent sore throat, recurrent throat infections, recurrent pharyngitis or tonsillitis, recurrent tonsillopharyngitis, repeating tonsillitis or pharyngitis, frequent tonsillitis or pharyngitis, frequent tonsillopharyngitis, chronic tonsillitis, chronic tonsillitis

with acute exacerbation; refers to a multiple attack of acute attack of viral or bacterial of tonsillitis, usually caused by many different pathogens or the same that flare up again and again few weeks or months after cessation of an acute sore throat, it could have been treated with antibiotics or not. In recurrent streptococcal pharyngitis, recurrent streptococcal tonsillitis or pharyngitis, recurrent streptococcal tonsillopharyngitis in addition to the reoccurring sore throat there is the persistent of a positive culture on throat swab or antigen test for streptococcal group A beta hemolytic without being a chronic carrier of the bacteria.

Peritonsillar abscess - Synonyms with; peritonsillar abscess; peritonsillitis; retropharyngeal abscess intratonsillar, para-peritonsillar or retrotonsillar refer to a collection of pus beside the tonsil in what is referred to as peritonsillar space.

Tonsil hyperplasia - Synonyms with tonsillar hyperplasia, tonsillar hypertrophy or hyperplastic tonsils; referred to the abnormal enlargement of the palatal tonsils and one of the cardinal symptoms occurs, namely rhonchopathy (with or without OSA), dysphagia or dysphonia.

Tonsillectomy - Synonyms with extracapsular tonsillectomy; tonsillotomy, intracapsular tonsillectomy, subtotal tonsillectomy, adenotonsillectomy, cryptolysis; means that the entire or partial removal of the tonsil from the tonsillar fossa either surgical with a scalpel, thermal, cryotherapy, laser coagulation, ultrasound therapy, radiofrequency, or photodynamic therapy.

Discrepancies between the medical records and the surgeon documents explanation for Tonsillectomies: We recognized the possibility of a mismatch between the medical records and the history presented to the ENT-surgeon, and therefore we allowed patient who met all other criteria for tonsillectomy except documentation to nonetheless qualify as justified if the otolaryngologist reported it in his request for approval to the surgery, and in so they were assigned to the group according to criteria's.

6. STATISTICAL ANALYSIS

Demographics and other clinical information were summarized using descriptive statistics. In cases of repeat visits, only the demographic values from the final diagnostic visit were used to calculate population summary statistics. Repeat visits were excluded from the model. Fixed effects independent variables included patient characteristics as opposed to clinic diagnosis, scan form and site, while age was treated as a continuous random variable. The outcome variable was the relevance of the result to clinical practice. We compared the association between each independent variable and the clinical outcome, using test for fixed variables and logistic regression for random variables and combinations. A threshold of $p < 0.05$ was taken as significant.

7. RESULTS

The cohort included approximately 425,250 persons in our region, of them 73% Adults and 27% Pediatrics with minor variation in their number threw the study years (Table 1).

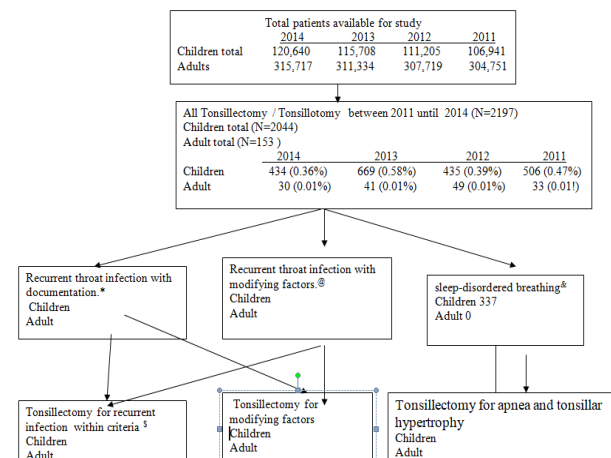


Figure 1: *Recurrent throat infection with documentation patients with at least 7 episodes in the past year or at least 5 episodes per year for 2 years or at least 3 episodes per year for 3 years: each with documentation one or more of the following: temperature, cervical adenopathy, tonsillar exudate, or positive test for GABHS

@Recurrent throat infection with modifying factors- multiple antibiotic allergy/intolerance, PFAPA, or history of peritonsillar abscess.

§ Sleep-disordered breathing- tonsil hypertrophy who also have abnormal polysomnography (PSG) APNEA- pulse oximetry levels less than 92% or an AHI >1 (greater than 1 apneic or hypopneic event in 2 or more consecutive breaths per hour.

Total Tonsillectomy mildly declined through the four year periods of the study from 539 in the year 2011 representing 1.3 per 1,000 person-years to 464 in the year 2014 representing 1.1 per 1,000 per person-years, statistically significant between the year 2011 and the year 2012 ($p<0.05$), between the year 2011 and the year 2013 ($p<0.001$), and between the year 2011 and the year 2014 ($p<0.001$) (Table 1, Figure 1).

	Year 2011	Year 2012	Year 2013	Year 2014	p	CI
Total patients in region	411,692	418,924	427,042	436,357	NS	
Pediatrics patients in region (%)	106,941 (26)	111,205 (26.5)	115,708 (27)	120,640 (27.6)	NS	
Adult (older than 16) patients in the region (%)	304,751 (74)	307,719 (73.5)	311,334 (73)	315,717 (72.4)	NS	
Tonsillectomy Pediatrics (%)	506 (0.47)	435 (0.39)	430 (0.37)	434 (0.36)	NS	
Tonsillectomy Adult (older than 16) (%)	33 (0.01)	49 (0.02)	41 (0.01)	30 (0.01)	NS	
Total Tonsillectomy adult and pediatric combined (%)	539 (0.13)	484 (0.12)	471 (0.11)	464 (0.11)	* <0.05 ** <0.001 *** <0.001	*0.010-0.001 **0.027-0.002 ***0.034-0.004
Recurrent sore throat of total (%)	41 (7.6)	19 (3.9)	34 (4.8)	35 (7.6)	* <0.05 ** <0.001	*0.065-0.009 **0.057-0.001
Repeating Tonsilopharyngitis (%)	5 (0.9)	6 (1.2)	7 (1)	9 (1.9)	NS	
Frequent Tonsilopharyngitis (%)	33 (6.1)	37 (7.7)	56 (7.9)	40 (8.6)	NS	
Sleep Breathing Disorder (%)	32 (5.9)	35 (7.3)	52 (7.3)	48 (10.4)	NS	
Justified Tonsillectomy with criteria (%)	111 (20.5)	97 (20.1)	149 (31.6)	132 (28.5)	** <0.004 *** <0.007	0.018-0.001 0.063-0.003

Table 1: Tonsillectomy comparison between the year of study in relation to patient age, and in reference to the criteria used to justify the need of surgery. From January.01, 2011 throw December.31, 2014.

Repeating Tonsilopharyngitis - Patient that who suffered from multiple throat infection with chronic complication as modifying factor. & Frequent Tonsilopharyngitis - Patient with had multiple sore throat infections and obstructive airways as modifying factor.

*Statistical Differences between 2011 and 2012

** Statistical Differences between 2011 and 2013

***Statistical Differences between 2011 and 2014.

	Year 2011	Year 2012	Year 2013	Year 2014	p	CI
Total Tonsillectomy combined pediatrics and adults	539	484	471	464	* <0.05 ** <0.001 *** <0.001	*0.010-0.001 **0.027-0.002 ***0.034-0.004
Justified Tonsillectomy within the guidelines (% of total tonsillectomies)	111 (20.5)	97 (20.1)	149 (31.6)	132 (28.5)	** <0.004 *** <0.007	0.018-0.001 0.063-0.003
Recurrent Throat infection* (%)	41 (7.6)	19 (3.9)	34 (4.8)	35 (7.6)	* <0.05 ** <0.001	*0.065-0.009 **0.057-0.001
Recurrent infection with modifying factor* (%)	5 (0.9)	6 (1.2)	7 (1)	9 (1.9)	NS	
Special medical condition (%)	33 (6.1)	37 (7.7)	56 (7.9)	40 (8.6)	NS	
Sleep Breathing Disorder (%)	32 (5.9)	35 (7.3)	52 (7.3)	48 (10.4)	NS	
Unwarned Tonsillectomy (% of total tonsillectomies)	428 (79.4)	387 (80)	322 (68.7)	332 (71.5)	** <0.004 *** <0.007 *** <0.001	*0.018-0.001 **0.063-0.003 ***0.034-0.004
Sore throat not frequent enough (% of unwarned)	342 (79.9)	298 (77)	244 (75.8)	253 (76.2)	* <0.05 ** <0.003 *** <0.003	*0.065-0.009 **0.057-0.001 ***0.0041-0.005
Recurrent infection without modifying factors* (%)	7 (1.6)	7 (1.8)	7 (2.1)	9 (2.7)	NS	
Hyperplasia with no associated comorbidity* (%)	47 (11)	54 (14)	41 (12.7)	40 (12)	NS	
Noisy sleep no prove of sleep disorder breathing (%)	32 (7.5)	28 (7.7)	30 (9.4)	30 (9.1)	NS	

Table 2: Tonsillectomy comparison according to guidelines between justified and unwarned surgeries throw years of study.

Note: Recurrent Throat infection - at least 7 episodes in the past year, or at least 5 episodes per year for 2 years or at least 3 episodes per year for 3 years with documentation.

#Modifying Factor- multiple throat infection leading to multiple antibiotic associated with PFAPA or PANDAS

& Special Medical Condition- tonsil hyperplasia causing malocclusion or dysphagia, or Peritonsillar abscess, or chronic otitis media, or Peritonsillar abscess, or Tonsillar neoplasia.

*Statistical differences between 2011 and 2012

** Statistical differences between 2011 and 2013

*** Statistical differences between 2011 and 2014

**** Statistical differences between 2012 and 2013

***** Statistical differences between 2012 and 2014.

Pediatrics Tonsillectomy lead this mild change, were we have noticed a decline from 47 in the year 2011, to 36 per 1,000 per person-years in 2014, statistically significant between 2011 and 2012 ($p<0.05$), 2011 and 2013 ($p<0.001$), and 2011 and 2014 ($p<0.001$) (Table 1).

The number of adult Tonsillectomy did not varied throw the study years and remained study at approximately 1 per 1,000 patient person-years (Table 1).

We had noticed a mild increase in the justified Tonsillectomy in accordance with the Guidelines throw the years, from 111 (20.5%) and 97 (20.1%) in the years 2011 and 2012 respectively, to 149 (31.6%) and 132 (28.5%) in the years 2013 and 2014 respectively, statistically significant between the year 2011 compared to the years 2013 and 2014, ($p<0.004$ and <0.007 respectively) (Table 1).

This very small increase in justified Tonsillectomy was mostly due to the a slight decline in the 5-11 years old in unwarned Tonsillectomy, were we noticed a declined from 148 (27.4%) in the year 2011, to 116 (24%) in the year 2012, to 119 (25.3) in the year 2013, and to 118 (25.4%) in the year 2014, statistically significant between all the years. ($p<0.001$) (Table 1) Overall, the majorities of the Tonsillectomy in each year were unwarned, and did not comply with Guidelines criteria. In the year 2011 at the introduction of Guidelines, 428(79.4%) patients had unwarned Tonsillectomy, it increase to 387 (80%) in the year 2012, than it declined to 332(68.7%) and 332 (71.5%) in the years 2013 and 2014 respectively, statistically significant between the year 2011 and the years 2013 and 2014 ($p<0.007$) and ($p<0.001$) respectively (Figure 1).

Most of the unwarned Tonsillectomy declined was in the criteria of sore throat but not recurrent enough to qualify per the Guidelines, in the year 2011 the introduction of the Guidelines 342(79.9%) had unwarned Tonsillectomy, it mildly decline to 298(77%), to 244(75.8) and to 253 (76.2%) in the years 2012, 2013 and 2014, statistically

significant ($p < 0.02$ and < 0.05) year 2011 to 2012 and 2013, also $p < 0.003$ between the year 2012 and 2014 (Table 2).

Subsequently, we have noticed statistically significant increase in the number of Tonsillectomy that were done for the diagnosis of tonsils hyperplasia but without any special concomitant medical condition required by the Guidelines, the increase in this as the one and only reason was from 47(11%) in the year 2011 to 54(14%) in the year 2012, and tapering to 41(12.7%) in the year 2013, and 40 (12%) the year 2014, statistically significant between 2011 and 2012 ($p < 0.04$), and 2012 and 2013, 2014 ($p < 0.03$ both years) (Table 2).

8. DISCUSSION

The aim of this study was to evaluate the impact of the new guidelines on the commonest pediatrics surgical procedure in the Western world.

The implication of the decline in tonsillectomies from 13 to 11 per 1000 persons years between 2011 and 2014 was probably attributed to attempt to comply with the Guideline and it was mostly noticed in justified tonsillectomies according the guidelines as a rise from 20.5% to 28.5% between 2011 and 2014, were the ENT surgeons most effort was placed in the pediatric group. (the over 16 years old tonsillectomies were constant through the years 1 per 1,000 persons year and were preformed mostly for SBD or noisy sleep without the prove of SBD).

The decision to list children for tonsillectomies after introduction of guidelines found that the majority (79.4%) did not conformed to the criteria, even though the unwarned tonsillectomies declined through the years (to 71.5% from 2011 to 2014).

The aspects of the guidelines that were mostly breached in the decision to carry out Tonsillectomy included mostly fewer attacks of tonsillitis than the guidelines recommended, and there were "significant" symptoms not included in the guidelines as the main reason for Tonsillectomy in 11% to 14% in children, the hyperplasia of tonsils and or adenoid

without dysphagia or associated growth, weight problems, SBD or others, furthermore, 7.5-10% were scheduled due to noisy sleep without signs or symptoms associated apnea or hypopnea in sleep .

Many ENT surgeon fill that the guidelines are not evidence base, and are not based on RCT (Randomized Control Trails) as the Cochrane group concluded (20) in stating that all adeno-tonsillectomy leads to a reduction in the number of episodes of sore throat and days with sore throat in children in the first year after surgery compared to non-surgical treatment, and they felt that propounding evidence nowadays suggest that there are many quality of life, education and family-based issues drivers for surgery and that studies shed poor agreement with pediatrician about the role of surgery [21].

We acknowledge that this study has internal weakness, including the fact it is done retrospectively, and the fact that we might not appreciate the number of symptomatic patient in the Tonsillar Hyperplasia group after they have received multiple treatment with no apparent improvement, a fact that might weaken the physician confidence in the diagnosis and increase the rate of repeat neuroimaging.

Despite that we feel that there is a need for strategies to increase the implementation of the guidelines by ENT-surgeons, and should include: Adoption of electronic health records that clearly delineate the reasons the child is recommended tonsillectomy. Prior-authorization by ENT peers that review the decision and requirements for documentation of the step therapy that has been done prior to the recommendation- as Interactive forms of continuing medical education, such as academic detailing, are effective methods of changing physician behavior [22].

We further recommend that in addition in at hock patient education, a large-scale public awareness campaigns or advertising campaigns of possible complication [23]. In addition physician education in order to reduce the high rate of unnecessary prescribing of antibiotics in upper-respiratory tract infection, and the referral to ENT-surgeons

producing in patient and parents minds that they are dealing with a life threatening illness, and when they are offered a "rescue" remedy they elect for surgery rather than other less harmful treatment. We also need physician performance measures to improve compliances with guidelines as tonsils specific assessment tools and the modality used in the surgical dissection [24].

Payer and Insurance-Based Strategies should be used as part of the strategy as stringer adherence to criteria in the prior authorization and implementing financial incentive to ENT-surgeons to enhance compliance while using financial penalties to the one that do not. Pay-for-performance programs have achieved modest improvements in the quality of care and could, in principle, Tonsillectomy should be

linked to measures associated with the use of the guidelines, although high-quality data evaluating this premise have yet to be published [25].

9. CONCLUSION

This study demonstrates that presently there is lack of adherence to AAO-HNS Guidelines and furthermore, Tonsillectomy are still perform in most cases without true medical therapeutic evidence without the relative importance of potential benefits and harms. Improving provider knowledge of Guidelines may help reduce surgical overuse. We believe successful dissemination of practice guidelines requires an understanding of the barriers to implementation and the use of multiple strategies to address these.

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