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Original Research Article

Diagnostic Tonsillectomy Versus Follow Up in Asymptomatic Unilateral Tonsillar Enlargement in Children/ A study in Kurdistan Region of Iraq

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Abstract

Children with only tonsil asymmetry are unlikely to have lymphoma, although traditionally a vast majority of these patients end up with tonsillectomy. The debate is whether asymmetry on its own just ifies the need for tonsillectomy. Objective to investigate whether we are appropriately diagnosing asymmetrical tonsils and whether the diagnosis of asymptomatic asymmetrical tonsil should be an indication for tonsillectomy.

A prospective study was carried out in Sulaimani City/Kurdistan region of Iraq. A total of 75 children were included. Brodsky measurement was initially recorded for all cases. Children were divided into 3 equal groups, 25 cases each, group having tonsillarasymmetry and subjected for tonsillectomy, group having tonsillar asymmetry and subjected for follow and control group having symmetrically enlarged tonsils and subjected for tonsillectomy. Tonsil size was measured by fluid displacement in a 20-mL syringe.

During two years of follow up the increase in size was recorded in five patients only which was due to the patients had fracture nasal bone, septal deviation, and unilateral sinusitis. A strong correlation between clinical tonsil grading and objective tonsil volume was observed.

For mild and moderate tonsillar asymmetry in children, if not associated with signs and symptoms follow up is sufficient.

Key words: tonsillectomy, tonsillar asymmetry, follow up.

الخلاصة

الاطفال ذوي التضخم غير المتناظر للوزتين وبدون اي اعراض مرافقه اخرى ،من غير المحتمل اصابتهم بالسرطان المفاوي وبالرغم من ذلك ان اغلبهم يخضع لعمليات استئصال اللوزتين. ان استئصال اللوزتين بسبب عدم التناظر مازال سببا للجدال.

الهدف من الدراسة هو تحديد فيما اذا كان حساب عدم تناظر اللوزتين يتم بصوره صحيحه ،وكونه سببا مقنعا لاستئصال اللوزتين.

اجري البحث في مدينة السليمانيه اقليم كردستان العراق وفيها خضع 75 طفل للدراسة.سجل مقياس برودسكي في بداية الدراسه لكل الاطفال،ثم تم تقسيمهم الى ثلاث مجموعات متساويه، كل مجموعه تتكون من 25 طفل.المجموعه الاولى ذوي اللوزتين غير المتناظره وتم خضوعهم للتداخل الجراحي، المجموعه الثانيه ذوي اللوزتين غير المتناظره وتم خضوعهم للمتابعة، المجموعة الثالثة ذوي اللوزتين المتناظرة وتم خضوعهم للتداخل الجراحي.قيس حجم اللوزه بطريقه ازاحة السائل واستعملت فيها محقنه قياس20 مللتر

بعد المتابعة السريرية لمدة عامين لوحظ ازدياد حجم اللوزتين لخمسة اطفال فقط وذلك بسب وجود كسر في عظام الانف ،انحراف الحاجز الانفي او التهاب احدى الجيوب الانفيه. وتبين وجود علاقه وثيقه بين القراءه السريريه والقياس الفعلي للوزه .

في تظخم اللوزتين الغير متناظر البسيط والمتوسط الغير مصحوب باعراض مرضيه تكون المتابعة السريرية كافيه.

الكلمات المفتاحية :استئصال اللوزتين، تضخم الوزتين غير المتناظر.

Introduction

The incidence of clinically asymmetrical tonsillar enlargement is quite high; Cinar [1] reported a rate of 6.7% among children undergoing tonsillectomy, while Harley [2] reported 18.2%.Asymmetrically enlarged tonsils are one of the features of serious pathology, but the presence of tonsil asymmetry without factors such as suspicious appearance, significant systemic signs and symptoms, progressive enlargement of the tonsil, concomitant neck adenopathies, and history of malignancy or immunocompromise, may not indicate malignancy, as a sole clinical feature[1-4.]Significant asymmetry of the tonsils, especially if there is rapid enlargement, may portend a serious underlying disorder such as lymphoma, lipid storage disease, or Langerhan cell histiocytosis[4-7].

Several studies with large registers and exams show the regular anatomo-pathological exam of the tonsillectomies has a negative cost-benefit ratio and their request is not justified when there are no other clinical evidences suggesting neoplasm [8,9].Yalon Dolev and Sam Daniel, in their study worked on the incidence of lymphoma in palatine tonsils in children and they concluded that even though the majority of patients who have unilateral tonsillar enlargement will not have tonsilar lymphoma, most patients with tonsillar lymphoma will have unilateral tonsillar enlargement as one of their presenting signs. Therefore, despite the low incidence of this malignancy in children, careful close follow-up of these patients is warranted until the diagnosis has been ruled out [10].Many literaturesfavor a period of observation in patients with asymmetrical tonsillar enlargement, unless other suspicious features of malignancy are present [1,3,4**].**

Objective This study seeks to investigate whether we are appropriately diagnosing asymmetrical tonsils and whether the diagnosis of asymptomatic asymmetrical tonsil should be an indication for tonsillectomy.

Materials and Methods

A prospective case-control study was carried out in otorhinolaryngology and head and neck center in Sulaimani Teaching Hospital and outpatient clinic in Kurdistan region of Iraq over a period of 4 years; from February 2010 to February 2014.Cases with suspicious appearance, night sweats, fever,dysphagea, progressive enlargement of the tonsil, concomitant neck adenopathies, and history of malignancy or immuno-compromise were excluded from this study. A total of 75 selected children aged 2-18 years were included in this study. Clinicopathological parameters were recorded including right or left palatine tonsil enlargement, sudden or gradual increment in size, and the presence of cervical lymphadenopathy and hepatospleenomegaly. Brodsky measurement was initially recorded for all cases. Children were divided into 3 equal groups, 25 cases each:

- Group having tonsil asymmetry and subjected for tonsillectomy
- Group having tonsil asymmetry and subjected for follow.
- Control group having symmetrically enlarged tonsils and subjected for tonsillectomy.

In total 50 cases had asymmetrical tonsil enlargement. From them 25 cases underwent tonsillectomy because of recurrent attacks of acute tonsillitis or an obstructive cause. While the other 25 cases underwent a 2 years follow updуring which the palatine tonsils were periodically ranked every 6 months according to the scheme proposed by Brodsky:[2,5] 4+ if the tonsils occupied

greater than 75% of the airway, 3+ if they occupied greater than 50% to 75% of the airway, 2+ if they occupied 25% to 50% of the airway, and 1+ if they occupied less than 25% of the airway.

For all tonsillectomy cases the tonsil size was measured by fluid displacement in a 20-mL syringe [11] and histopathological findings were reported. Control cases were matched for age, gender and race.

Statistical Method

The data were analyzed using SPSS version 21. Mean and standard deviation calculated for the normally distributed data. Student t-test was used to compare the mean difference between volumes of tests. P-value of less than 0.05 was considered statistically significant for the difference. Pearson coefficient correlation was used to test the relation between the size of the tonsil and Brodsky score.

Results

In the group of asymmetry with tonsillectomy the mean age is 110.88 months with standard deviation=50.85 (minimum=38, maximum=213), in the group of asymmetry with follow up the mean age is 123.48 months, with standard deviation=50.859 (minimum= 51, maximum=203) with 10 males and 15 females in each groups. While in control group the mean age is 97.28 months with standard deviation =55.67 (minimum=23, maximum=211) with 13 males and 12 females. A highly significant difference between the size of asymmetry group and control group, Table 1 with P value=0.0004.

Table 1: Relation between volume of asymmetry and control groups.

	Largest volume of tonsil of Asymmetry	**Volume of tonsil of Control Group**	**p- value**
Mean	37.60	30.20	0.0004
Minimum	30.00	15	
Maximum	50.00	50	
Standard deviation	5.79	9.18	

Brodsky score was recorded for 50 cases of asymmetry, and then tonsillectomy was done for 25 cases, while the other 25 cases were subjected for follow up. Four cases only show 4+ i.e. >75% of airway obstruction, Table 2.

Table 2: Brodsky score in group of asymmetry with tonsillectomy and asymmetry with follow up.

Brodsky score	**Asymmetry with tonsillectomy (n=25)**	**Asymmetry with follow up (n=25)**
Right tonsil		
0	1	3
1+	4	7
2+	11	11
3+	8	4
4+	1	
Left tonsil		
0+	1	2
1+	6	11
2+	6	8
3+	9	4
4+	3	

Tonsillectomy and biopsy examination of both of the asymmetry group and control group shows no significant histopathologicalfindings, table 3.

Table 3: Histopathological findings of asymmetry group and control group

Pathology	Asymmetrical tonsil group	Control group
• **Nonspecific hyperplasia**	23	25
• **cyst**	2	0

During two years of follow up, we observed increased in size in two right tonsils and 3 of the left tonsils.So the increase in size was recorded in five patients. There was a slight decrease in size in three patients only,Table 4.

Table 4: Comparison of Brodsky score at the beginning and end of 2 years follow up

Brodsky score	at start	After 24 months
Right tonsil		
0	3	2
1+	7	7
2+	11	10
3+	4	6
4+		
Left tonsil		
0	2	2
1+	11	8
2+	8	11
3+	4	4
4+		

The tonsil volume of the asymmetry group was measured in ml and the difference between left and right tonsils was assessed as follow:
If the difference ≤ 1 ml it's mild
If the difference > 1 ≤ 2 ml it's moderate
If the difference > 2 ml it's severe

Table 5: Difference between left and right tonsil volume in Asymmetry group

Difference between left and right tonsils	Count	%
mild	7	28 %
moderate	17	68 %
severe	1	4 %

Strong correlation is found between the subjective size of the tonsils measured by Brodsky score and the tonsil volume (measured by volumetric displacement) of both right and left sides in twenty five cases of tonsillar asymmetry($r = 0.912$ $p= 0.00003$, $r = 0.729$ $p=0.0003$) respectively, Figure 1 and 2.

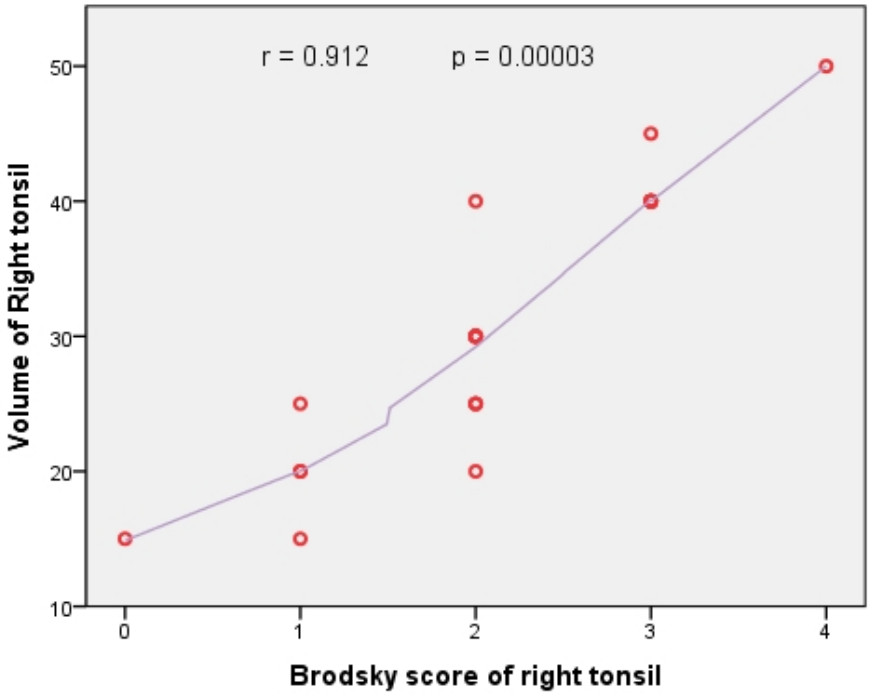

Figure 1 : Scatterplot showing relation between volume and Brodsky score in right tonsil

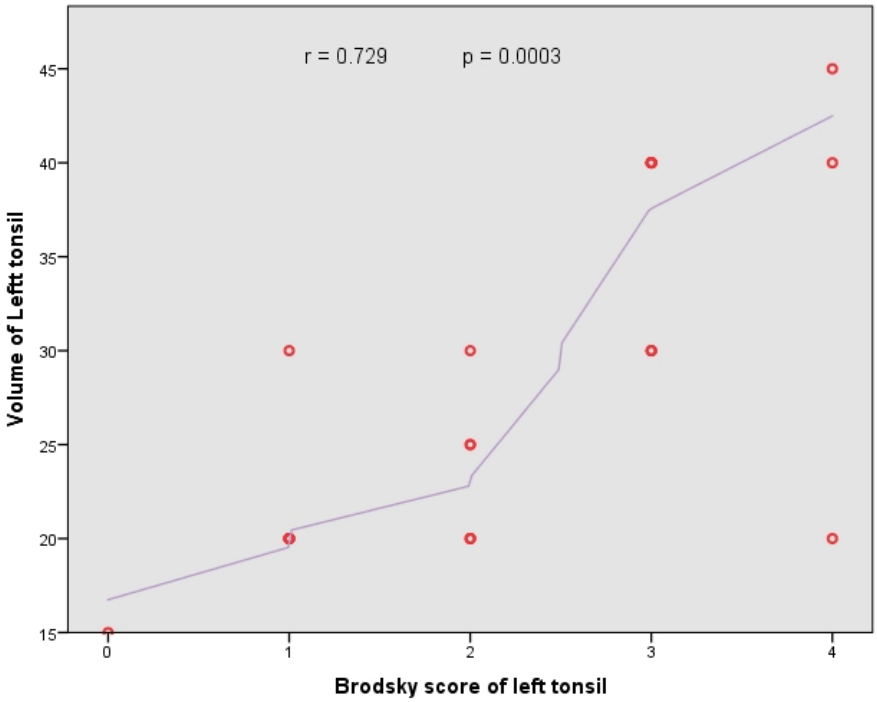

Figure 2 : Scatterplot showing relation between volume and Brodsky score in left tonsil.

Discussion

Children without any sign and symptomsas night sweats, fever, dysphagia, weightloss, hepatoseplenomegaly, cervical lymphadenopathy or rapid increase in size of tonsil who present with only tonsil asymmetry are unlikely to have lymphoma, although traditionally a vast majority of these patients end up with tonsillectomy [12].

There is however debate with regard to whether asymmetry on its own justifies the need for tonsillectomy.In the present study there was 1 case (4%) of severe unilateral tonsillarenlargement; (Brodsky score 4+ more i.e. than 75% and also by volume 4.5 ml), mild 7 cases (28%) and moderate 17 (68%)tonsillar asymmetry was demonstrated. The mean volume of the asymmetrical tonsils and the mean volume of the tonsils of the control group are highly significant (p-value 0.0004), which means clinically diagnosed tonsil asymmetry is real and apparent. This differs from Spinouet al. [3] who found the clinically enlarged tonsil to actually be the smaller tonsil in 17% of cases, and that in 40% of cases the tonsils were of equal size. Berkowitz and Mahadevan [4] found that the tonsils were the same size in 52% of clinically asymmetrical tonsils, the reason this differs from our study is due to the fact that the cases viewed by Spinou et al.[3] and Berkowitz and Mahadevan [4] were mild asymmetry, while ours were mainly moderate asymmetry.

No evidence of lymphoma or other significant disorder was noted in either group in this study and this is compatible with Berkowitz and Mahadevan [4] who failed to find any lymphoma in the absence of significant symptoms.In a study done by Sunkaraneni et al [12]the prevalence of malignancy in tonsils which exhibit asymmetry with no other clinical features was zero and they suggest a 'watch and wait' policy is initially more appropriate, and if symptoms or signs are progressive, tonsillectomy should then be advised. Alviandvartanian [13] in their study did not find any significant disease.Other studies [1-3] also reported no significant pathology in patients with asymptomatic, asymmetrically enlarged tonsils. Dohar and Bonilla [7] reviewed 2012 adeno-tonsillectomies or tonsillectomies and discovered only 1 case of lymphoma, the lymphoma case was suspected before surgery.

There is a strong correlation between clinical tonsil grading and objective tonsil volume in which most cases were grade 2 Brodsky scale 25% and by volume were moderate more than 1 ml and less than 2 ml. This is compatible with Howard &Brietzke study who found strong correlation between tonsil volume and subjective tonsil size[14].

In two years of follow up of asymmetrical tonsil we found that the patients could be classified into three groups, the first group (major group) did not experience any change in the size of their asymmetrical tonsils, the second group experienced a slight decrease in size of their asymmetrical tonsils, the third group experienced a large increase in size of their asymmetrical tonsil. A period of observation has been suggested by many other authors.[1,3,4]. The slight decrease in size was related to associated infection and edema and it was recorded in three patients only. The increase in size was due to the patients having had fracture nasal bone, septal deviation, and unilateral sinusitis; this was recorded in five patients.

Conclusion

Mild and moderate tonsillar asymmetry in children, if not associated with signs and symptoms like fever, night sweating, loss of Wight, significant cervical lymphadenopathy, hepatospleenomegaly, rapid increase in size of tonsil, history of malignancy, and organ transplant, surgical intervention is not required (tonsillectomy for biopsy), follow up is sufficient.

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