

From the Paediatric Department, Cairo-University, Cairo, Egypt.

TONSILLECTOMY AND ALLERGIC RESPIRATORY DISEASES IN CHILDREN

By

ANISSA M. EL-HEFNY

Many physicians are confronted with children who have repeated paroxysmal attacks of coughing or attacks of bronchial asthma, mainly during the winter months. These attacks are often accompanied by enlarged tonsils and fever. A doctor seeing such a child has to decide whether tonsillectomy will help the patient. This work was carried out in the last four years on children with chronic paroxysmal cough and bronchial asthma, mainly occurring in winter. An effort was made to evaluate the role of tonsillectomy in some of these cases on the course of the disease.

MATERIAL AND METHOD

The group of children under study were 177. Their ages ranged from one to fourteen years. They were 119 males and 58 females. They were selected from an allergic clinic because of paroxysmal cough and bronchial asthma occurring mainly in winter. A detailed history was taken from each case. This included the time of onset and duration of the disease. The presence of any family as well as personal history of allergic diseases such as eczema, allergic rhinitis or asthma. The mode of onset of the attacks whether preceded by any nasal symptoms, sore throat, fever, whether the child was tonsillectomised or not. If he had had the operation, a more detailed study of the condition of the child before and after tonsillectomy was made. The severity of bronchial asthma was decided on the following criteria:

1. Patient reporting one to two attacks of asthma quickly relieved by rest or single doses of bronchodilator drugs.
2. Attacks occurring almost daily but responding well to symptomatic medication, taken regularly.

3. Continuous asthma with subjective sensation of tightness, wheezing and intermittent dyspnoea only partially or briefly relieved by medication.

4. Status asthmaticus.

According to these criteria the child was considered to have mild (1), moderate (2) or severe asthma (3 and 4).

Skin tests were done for common inhalants such as house dust, moulds, pollens, fabrics and foods. All extracts used in the study were prepared by the author (1). The tests were done by the modified prick method using extracts of a dilution of 10,000 to 50,000 P.N.U./ml. In older children intradermal testing was done with 5,000 P.N.U./ml diluted extracts. A positive test was considered by the presence of redness, itching and whealing at the site of testing compared to a control.

A further effort was made to classify the patients into allergic and non allergic. The allergic etiology was given in those children fulfilling the following:

1. The presence of a positive family history of allergic diseases.
2. The presence of a personal history of one or more of the atopic diseases.
3. The presence of a suggestive history of a known allergen causing the disease.
4. The presence of a positive skin test to this suspected allergen. The patients were followed up for a period of four years, although tonsillectomy was done in some cases up to ten years previously.

RESULTS

Of the 177 children under study twenty-six had mainly paroxysmal attacks of coughing, 98 had bronchial asthma and 53 had both, asthma and paroxysmal cough. All the cases had their symptoms mainly in winter.

From the investigations 149 cases (78.5 per cent) were diagnosed as mainly allergic. The other 28 (21.5 per cent) had an infective etiology with or without an allergic factor.

Forty-four of the children under study gave a history of tonsillectomy. Twenty-eight of these became worse after the operation (63.6 per cent of the tonsillectomised children). In 12 patients (31.8 per cent) the severity of the disease did not change after operation. Only in 4 cases (4.6 per cent) was there a marked benefit after tonsillectomy. In the 133 non tonsillectomised children, 2 became worse (1.5 per cent), the severity of the disease did not change in 77 (57.3 per cent)

and 54 cases had improvement in their symptoms (40.8 per cent).

Table 1 illustrates these findings.

TABLE 1

Diagnosis	No. of cases	Tonsill- ectomized	worse	No change	Improved	Non tonsill- ectomized	worse	No change	Improved
Paroxysmal cough	26	5	3 (60%)	1 (20%)	1 (20%)	21	— (0%)	5 (23.8%)	16 (76.2%)
Bronchial asthma	98	25	16 (64%)	8 (32%)	1 (4%)	73	1 (1.3%)	48 (65.7%)	24 (32.8%)
Paroxysmal cough and Bronchial asthma	53	14	9 (64.2%)	3 (21.4%)	2 (14.4%)	39	1 (2.6%)	24 (61.5%)	14 (25.9%)
Total	177	44	28 (63.6%)	12 (27.2%)	4 (9.2%)	133	2 (1.5%)	77 (57.8%)	54 (40.8%)

If the results were analysed as regards the presence of a predominant allergic factor the tonsillectomised children with paroxysmal cough became worse after the operation. They often started to have bronchial asthma for the first time in their lives. Those with bronchial asthma had more severe attacks after tonsillectomy in 72.7 per cent of the cases. On the other hand in the non tonsillectomised group with an allergic predominant factor the prognosis of children with paroxysmal cough and bronchial asthma was far better. Table 2 illustrates the details of these findings.

As regards children without a predominant allergic factor, tonsillectomy had a beneficial effect on those with bronchial asthma as well as with paroxysmal cough in 66.6 per cent. None of these children became worse. Table 3 illustrates these findings.

TABLE 2

Diagnosis	No. of cases allergic	Tonsill- ectomized	worse	No change	Improved	Non tonsill- ectomized	worse	No change	Improved
Paroxysmal cough	13	3	3 (100%)	- (0%)	- (0%)	10	- (0%)	3 (30%)	7 (70%)
Bronchial asthma	91	22	16 (72.7%)	6 (27.2%)	- (0%)	69	1 (1.04%)	45 (65.2%)	7 (33.3%)
Paroxysmal cough and Bronchial asthma	45	1	8 (72.7%)	3 (27.2%)	- (0%)	34	- (0%)	21 (61.7%)	13 (38%)
Total	149	36	27 (50.5%)	9 (25%)	- (0%)	113	1 (0.8%)	69 (61%)	43 (38.2%)

TABLE 3

Diagnosis	No. of cases non allergic	Tonsill- ectomized	worse	No change	Improved	Non tonsill- ectomized	worse	No change	Improved
Paroxysmal cough	13	2	- (0%)	1 (50%)	1 (50%)	11	- (0%)	2 (18.1%)	9 (81.9%)
Bronchial asthma	7	3	- (0%)	2 (66.6%)	1 (33.3%)	4	- (0%)	3 (75%)	1 (25%)
Paroxysmal cough and Bronchial asthma	8	3	1 (33.3%)	- (0%)	2 (66.6%)	5	1 (20%)	3 (60%)	1 (20%)
Total	28	8	1 (12.5%)	3 (39.5%)	4 (50%)	20	1 (5%)	8 (40%)	11 (55%)

DISCUSSION

The concept of physiological hyperplasia of all lymphoid tissue, including the tonsils and adenoids in children is not always realised (2). Large tonsils were thought to cause chronic cough, so too did a large uvula and many surgeons used to remove a bit of the uvula because it touched the base of the tongue and also caused coughing. The single question of whether the child slept with a teddy bear tucked under his arm or had any house pet was never asked. These children were tonsillectomised and in most cases they were no better.

There are no universally accepted criteria for tonsillectomy. The indications are essentially the same in children with or without asthma (3). Many times the tonsils were wrongly blamed for symptoms which were caused by the adenoids, although the onset of asthma has even been attributed to tonsillectomy done on a child not previously affected by the disease (4).

Our findings show that children with an atopic tendency, having a paroxysmal cough and bronchial asthma are very bad candidates for tonsillectomy. A high percentage of them becoming worse after the operation compared with non atopic children. It is possible that the tonsillectomised group had more severe asthma than that who did not have the operation.

Paroxysmal cough and bronchial asthma occurring mainly in winter, are often diagnosed as having an infectious element. The tonsils and adenoids are usually blamed as they become enlarged during the attacks in many patients. This is not always the case, as allergic children, if sensitive to house dust and other inhalants are known to have their symptoms exaggerated during the winter months. This is due to the fact that in winter, windows are usually closed and hence the patient is more exposed to allergens. If tonsillectomy is performed in such a child, the actual cause of the disease, allergy, is not dealt with.

In conclusion, the importance of the role of allergy in children should be stressed particularly in those showing re-

peated respiratory complaints such as asthma and/or paroxysmal cough mainly in the winter months. Proper allergic investigations may spare the child the hazards of a useless operation.

SUMMARY

A study was done on 177 children from 1-14 years of age suffering from bronchial asthma and/or paroxysmal cough mainly in winter. The effect of tonsillectomy done in 44 cases on the severity of the disease was evaluated in relation to the presence or absence of any allergic factor. The results were compared to non tonsillectomised children with the same complaint. The unsuccessful results of tonsillectomy in children with atopy is stressed.

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