

THE PART PLAYED BY ADENOIDECTOMY IN THE COMBINED OPERATION OF TONSILLECTOMY WITH ADENOIDECTOMY

SECOND PART OF A CONTROLLED STUDY IN CHILDREN

BY

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Most of the literature on tonsillectomy concerns the combined operation, tonsillectomy with adenoidectomy, and one is left in doubt whether the benefits can be attributed to the tonsillectomy, to the adenoidectomy, or to both parts of the operation. It was noted by Fry (1957) that otitis media featured in more than half of the children referred for tonsillectomy from his practice. In a survey of physicians in the United States, Wolman (1956) found that tonsillectomy was recommended by 77 per cent. for the relief of otitis media. However, Brown (1954) found that adenoidectomy was not likely to benefit recurring otitis media. He concluded from his review that the main indication for adenoidectomy was occlusion of the nasopharynx which was an uncommon condition. Sataloff and Menduke (1958) considered that middle ear disease causing deafness was an indication for adenoidectomy in children, but that the adenoids might also be suspect where there were other symptoms, such as nasal obstruction, running nose, and recurrent upper respiratory infections. Recent lists of indications for tonsillectomy do not include frequent colds or coughs. Most writers agree that adenoidectomy should be performed at any age when the indications for it are seen.

An earlier paper by McKee (1963) described the effects of tonsillectomy and adenoidectomy in children referred to a surgeon. A 2-year morbidity survey demonstrated that the incidence of throat disease was reduced in the children who had immediate operation, but remained high in those for whom the operation was deferred. Other changes after operation were a reduction in the occurrence of otitis media and chronic catarrhal illness. One of the aims

of these studies was to define which of the changes following operation could be attributed to the removal of tonsils, and which to the associated removal of adenoids. The following survey compares the influence of adenoidectomy alone with that of the combined operation, tonsillectomy and adenoidectomy. At the same time it has been possible to compare the immediate morbidity of the two operations, and to clarify some of the indications suggested by the first survey.

METHODS

The methods of selection and observation were those used in the first tonsillectomy survey, and have been described in detail elsewhere, McKee (1963). Children had been referred to the surgeon for an opinion on the need for tonsillectomy. Those in need of an urgent operation by currently accepted criteria, and children with a history of only one or two probable throat infections over the last 12 months were not included in the study for ethical and statistical reasons. A few others were unsuitable for detailed follow-up, mainly because of where they lived. With these exceptions, successive cases were admitted to the survey. They had a common criterion, namely a history of three or more recent episodes of throat infection or of acute respiratory illness with cervical adenitis; these children formed the majority of cases referred to the surgeon with "tonsil trouble". They were selected from clinics held by Mr. J. F. Lipscomb, Consultant Ear, Nose and Throat Surgeon, at hospitals in Farnborough, Sidcup, and Dartford in Kent.

Two hundred children aged 2 to 15 years at the time of the first examination were allocated into two groups between November 1959 and May 1960. Randomization was achieved by using sealed

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envelopes and produced two equal groups for operation as follows:

Group I. Tonsillectomy with adenoidectomy (T+A). In this paper where "tonsillectomy" is used, it is this combined operation which is implied.

Group II. Adenoidectomy only (A).

It was considered that this was the only method of obtaining a statistically satisfactory study of the part played by adenoidectomy. It was regarded as ethically acceptable given the method of selection above, with the proviso that should a child's condition deteriorate after adenoidectomy so that tonsillectomy was urgently needed, then the child would be withdrawn from the study.

These cases were placed on a separate waiting list and admitted within a few weeks of selection. Home visits were made to each family at intervals of about 2 months. At each visit one of the two field workers completed a questionnaire giving details of the symptoms and duration of illness, accidents, or abnormal incidents, and medical attendances. These workers acted only as observers; medical care was left to the patient's general practitioner.

Records were examined shortly after each visit and any illnesses reported were classified in accordance with predefined symptom-complexes as detailed in the first survey (McKee, 1963). The same criteria for assessment of illness were again used:

1. Incidence of Episodes.
2. Total Duration of Illness, the period during which the child was kept at home and not permitted to engage in normal activities.
3. Confinement to Bed, including time spent in hospital.
4. School Loss.
5. Medical Attendance—general practitioner consultations, excluding visits for prophylactic inoculations.
6. Incidence of "Severe Episodes", of 1 or more days' duration, as defined above.

It had been found in the first survey that the major benefits from tonsillectomy were apparent in the first year after operation. It was thus anticipated that any major difference between the results of adeno-tonsillectomy and of adenoidectomy would be apparent from a 12-month follow-up.

The rates of admission to the two groups and the frequencies of follow-up were closely similar, hence

no seasonal adjustments were necessary for comparison of the health records.

DESCRIPTION OF POPULATION

The age and sex distributions of the 200 children studied are given in Table I. In both groups there was a preponderance of females, as had been found in the population of the first tonsillectomy survey. There were relatively more young schoolchildren, aged 5-7 years, in the tonsillectomized group, but a similar number of cases under and over 8 years in the two groups. Social classification of the parents of selected children, as used by the General Register Office (1951) also showed a similar distribution in the two groups (Table II), which should thus be strictly comparable.

TABLE I
AGE AND SEX DISTRIBUTION OF POPULATION STUDIED

Operation ..		Adenoidectomy Only			Tonsillectomy and Adenoidectomy		
Sex		Male	Female	Total	Male	Female	Total
Age (yrs)	2-4	10	12	22	6	8	14
	5-7	17	31	48	28	31	59
	8-15	9	21	30	8	19	27
Total		36	64	100	42	58	100

TABLE II
SOCIAL CLASSIFICATION OF 200 CHILDREN STUDIED

Operation		Adenoidectomy Only	Tonsillectomy with Adenoidectomy
Social Class	I	10	12
	II	21	17
	III	50	53
	IV	15	9
	V	4	9
Total		100	100

There was a small loss of cases during the 12-month follow-up. One child who had undergone adenoidectomy was withdrawn for an urgent tonsillectomy; two families moved away from the area, and two other families, one from each group, proved unco-operative over the follow-up. This left 97 and 98 children respectively in the groups having adenoidectomy alone or tonsillectomy; these children were the subject of the following comparison.

RESULTS

(A) COMPARISON OF MORBIDITY IN GROUPS OF CHILDREN HAVING ADENOIDECTOMY ALONE AND TONSILLECTOMY WITH ADENOIDECTOMY.

The total incidence of illness was 23 per cent. less in tonsillectomized children than in those having

adenoidectomy alone (Table III). This was largely the result of a reduction in throat disease. Sore throats were more than four times as frequent in the adenoidectomized group of children; they accounted for an average of 7.9 days illness per year, which was more than half the total for all respiratory disease, and seven times the average duration in tonsillectomized children (1.1 days). The previous survey showed that tonsillectomy with adenoidectomy reduced the amount of throat disease, but the present result shows that adenoidectomy alone does not give this benefit.

The frequency and duration of coughs, colds, and influenzal illness were similar in both groups, but there was an improvement in the tonsillectomized children in respect of the miscellaneous group of "other respiratory illnesses", which was due to a lower morbidity from chronic catarrhal conditions and acute cervical adenitis. Acute adenitis without an associated respiratory illness was recorded on ten occasions in adenoidectomized children, and only once after the combined operation ($t=2.7$; $P=.01-.001$). Chronic catarrhal disease was twice as frequent in children having adenoidectomy alone. This result will be examined later in relation to the illness records of an earlier group of unoperated controls.

Differences between the two groups in the occurrence of non-respiratory illness were small, of variable sign, and not statistically significant (Table III). Otitis media was infrequent after adenoidectomy or adeno-tonsillectomy. It does not appear that the combined operation offers any particular advantages in the relief of this disease.

Other criteria for the assessment of illness (Table IV, overleaf) confirmed the finding that the results of tonsillectomy with adenoidectomy were better than those of adenoidectomy alone, in respect of sore throats and the miscellaneous group of "other respiratory illness". The morbidity from colds, coughs, and otitis media in terms of loss of schooling and the need for medical attention was in general similar in both groups of children. The net benefit from the combined operation over adenoidectomy alone was thus a saving of 4.1 days in school attendance over the first postoperative year, representing a 26 per cent. improvement in the loss from all causes, and a 51 per cent. improvement in that due to respiratory illness. The number of medical calls for respiratory illness was 253 for adenoidectomized children, and 136 for those in whom tonsillectomy had also been performed. Similar figures for the incidence of "severe episodes" of respiratory illness were 247 and 146 respectively, which illustrates the marked improvement which followed tonsillectomy in these children.

(B) THE PART PLAYED BY ADENOIDECTOMY IN THE COMBINED OPERATION.

To put these results in perspective they are compared with those obtained for tonsillectomized and unoperated (control) children in the previous survey (McKee, 1963). Children for both studies were selected by the same criteria and from the same clinics. The methods of follow-up and classification were identical, but, owing to the different starting dates, there were some seasonal differences in the incidence of illness.

TABLE III
INCIDENCE AND DURATION OF ILLNESS IN CHILDREN AGED 2 TO 15 YEARS HAVING TONSILLECTOMY WITH ADENOIDECTOMY OR ADENOIDECTOMY ONLY

Illness	No. of Episodes (per Year)			Mean Duration (Days per Year)			
	Adenoidectomy only	Tonsillectomy with Adenoidectomy	<i>t</i>	Adenoidectomy only	Tonsillectomy with Adenoidectomy	<i>t</i>	
Operation							
No. of Children	97	98		97	98		
Total Illness	7.72	5.95	3.35*	26.05	20.64	1.69	
Respiratory	Cold	2.18	2.09	.37	3.37	3.20	.25
	Cough . . . . .	.59	.57	.15	1.79	2.47	.60
	Sore Throat	1.46	.32	6.12*	7.93	1.14	5.79*
	Influenzal Illness . . . . .	.04	.08	1.07	.36	.77	1.16
	Other Respiratory . . . . .	.35	.16	2.52†	.56	.08	1.74
Total	4.63	3.22	3.78*	14.01	7.66	3.24*	
Non-Respiratory	Otitis Media . . . . .	.16	.22	.84	.55	.74	.61
	Infectious Disease . . . . .	.50	.53	.28	8.34	8.03	.16
	Gastro-intestinal Upset . . . . .	.85	.66	1.44	1.73	1.24	1.20
	Other	1.57	1.31	1.25	1.42	2.96	1.52
Total	3.09	2.72	1.22	12.04	12.98	.39	

Significant changes * $P < .002$ † $P = .01$,

TABLE IV
MEAN ILLNESS IN FIRST YEAR IN CHILDREN AGED 2-15 YEARS HAVING TONSILLECTOMY WITH
ADENOIDECTOMY (T+A) OR ADENOIDECTOMY ONLY (A)

Criteria of Illness in First Year		School Loss (days)			No. of Medical Attendances			Confinement to Bed from Illness (days)			No. of "Severe" Episodes		
		A	T+A	t	A	T+A	t	A	T+A	t	A	T+A	t
Operation		82	89		97	98		97	98		97	98	
No. of Children		82	89		97	98		97	98		97	98	
Total Illness		15.68	11.56	1.98†	4.61	3.61	1.63	6.66	5.02	1.18	4.03	2.98	2.75*
Respiratory	Colds	2.06	2.40	.69	.49	.35	1.11	.45	.55	.52	.89	.87	.13
	Coughs	1.18	.94	.50	.52	.63	.40	.53	1.03	.82	.30	.31	.10
	Sore Throats	4.40	.68	5.54*	1.41	.24	5.21*	2.42	.31	5.05*	1.25	.21	6.21*
	Influenzal Illness .. .. .	.27	.46	.69	.06	.13	1.04	.15	.22	.51	.04	.08	1.06
	Other .. .. .	.51	.06	1.86	.12	.03	1.61	.09	.20	1.86	.07	.02	1.67
Total		8.43	4.16	3.64*	2.61	1.39	3.02*	3.65	2.11	1.77	2.55	1.49	3.70*
Non-Respiratory	Otitis Media .. .. .	.28	.46	.74	.18	.37	1.55	.09	.23	1.13	.13	.15	.32
	Infectious Fever	4.56	4.32	.19	1.03	.87	.66	1.59	1.09	1.30	.50	.51	.09
	Gastro-intestinal Upset	1.18	.88	.89	.33	.26	.69	.49	.36	.83	.54	.41	1.40
	Other	1.23	1.74	.65	.46	.73	1.98†	.83	1.22	.47	.31	.42	1.19
	Total		7.26	7.40	.09	2.00	2.22	.62	3.01	2.91	.10	1.48	1.49	.05

Significant changes * P < .01 † P < .05.

The data from both surveys on incidence and duration of illness are combined in Table V.

The total amount of illness was similar in adenoidectomized and unoperated children, but those who had the combined operation experienced 23 per cent. less in both studies. The distribution and duration of respiratory disease was also similar in adenoidectomized and unoperated children. It is difficult to escape the conclusion that adenoidectomy alone has no influence on the occurrence of respiratory disease. It is no substitute for tonsillectomy in the relief of throat disease, and offers no relief from common colds or coughs.

The distribution of "other respiratory illness" is shown in Table VI (opposite). Chronic catarrhal conditions were twice as frequent when the tonsils were intact. In the previous survey, the rate in unoperated children was also double that seen in comparable tonsillectomized children. There is no evidence, therefore, that chronic catarrhal disease was relieved by adenoidectomy alone, but it should be recalled that the children were not selected because of large adenoids, but because of a history of respiratory disease. A group chosen primarily because they had large obstructing adenoids might have shown a different picture.

TABLE V
INCIDENCE AND DURATION OF ILLNESS IN THE FIRST YEAR OF FOLLOW-UP OF CHILDREN HAVING
NO OPERATION (O); TONSILLECTOMY AND ADENOIDECTOMY (T+A) OR ADENOIDECTOMY ONLY (A);
BOTH SURVEYS

Illness in First Year		No. of Episodes				Duration (days)			
		First		Present		First		Present	
Survey		O	T+A	T+A	A	O	T+A	T+A	A
Operation									
No. of Children		154	222	98	97	154	222	98	97
Total Illness		7.13	5.50	5.95	7.72	29.32	19.29	20.64	26.05
Respiratory	Cold	1.94	1.91	2.09	2.18	4.56	3.84	3.20	3.37
	Cough	0.54	0.56	0.57	0.59	2.97	2.86	2.47	1.79
	Sore Throat	1.96	0.39	0.32	1.46	11.43	1.68	1.14	7.93
	Influenzal Illness	0.20	0.14	0.08	0.04	2.28	1.49	0.77	0.36
	Other Respiratory	0.38	0.25	0.16	0.35	0.24	0.27	0.08	0.56
Total		5.01	3.25	3.22	4.63	21.49	10.13	7.66	14.01
Non-Respiratory	Otitis Media	0.33	0.17	0.22	0.16	1.53	0.52	0.74	0.55
	Infectious Disease	0.25	0.36	0.53	0.50	4.45	5.31	8.03	8.34
	Gastro-intestinal Upset	0.54	0.66	0.66	0.85	0.92	1.56	1.24	1.73
	Other	1.00	1.06	1.31	1.57	0.93	1.76	2.96	1.42
	Total		2.12	2.25	2.72	3.09	7.83	9.16	12.98	12.04

TABLE VI

OTHER (NON-CLASSIFIED) RESPIRATORY DISEASE IN PRESENT SURVEY

Operation	Adenoidectomy Only (A)		Tonsillectomy (T+A)	
	Total Episodes	Number of Children Affected	Total Episodes	Number of Children Affected
No. of Children ..	97		98	
Chronic Nasal Catarrh or Obstruction ..	21	18	10	9
Chronic Cough ..	3	3	4	4
Acute Adenitis ..	10	9	1	1
Other Illness ..	—	—	1	1
Total	34	27	16	15

In the first survey, otitis media occurred twice as frequently in unoperated controls than in tonsillectomized children (Table V). This high rate of otitis media was not seen in adenoidectomized children, in whom it was similar to tonsillectomized children of both studies. This study did not select children with a history of high morbidity from otitis media, but it is reasonable to infer that adenoidectomy and not tonsillectomy would be indicated for the relief of this disease.

(C) IMMEDIATE MORBIDITY OF ADENOIDECTOMY

In this study, 195 children had an adenoidectomy or tonsillectomy with adenoidectomy; of these cases, 19 per cent. had some complication which was related to the performance of the operation. The distribution of complications is given in Table VII.

The number of patients was too small to allow any firm conclusions to be drawn with regard to the relative rates of different complications following adenoidectomy or the combined operation, but the total incidence of upsets was more than twice as high when the larger operation was performed. This greater morbidity suggests that the combined operation should not be offered as a routine where, as for

TABLE VII

INCIDENCE OF POST-OPERATIVE COMPLICATIONS IN PRESENT SURVEY

Operation	Adenoidectomy Only (A)	Tonsillectomy with Adenoidectomy (T+A)	
			Number of Children
Number of Children		97	98
Complications	Primary and Secondary Haemorrhage ..	3	7
	Enuresis or Behaviour Upset	2	7
	Otitis Media	2	5
	General Post-operative Debility	1	2
	Chest Infection ..	—	1
	Other Illness ..	5	4
	Total Children having One or More Post-operative Complication ..	12*	25*

* Difference in proportion 0.131
Standard error of difference 0.056

the relief of recurring otitis media, adenoidectomy alone would suffice.

(D) INFLUENCE OF ADENOIDECTOMY AND TONSILLECTOMY ON THE ENLARGEMENT OF CERVICAL GLANDS

In both the first tonsillectomy survey (McKee, 1963) and in the present study, visible enlargement of neck glands was recorded. No attempt was made to define their position as between anterior or posterior triangle, but glands at the back of the neck were not included in this comparison. Glandular swelling with mumps was also omitted as it was considered unlikely that the observers, the child's parents, would distinguish between cervical glands and parotid glands.

A variety of illnesses was found to be associated with glandular enlargement, but the majority were respiratory upsets (Table VIII). Out of 246 upsets with associated glandular enlargement seen in the first year of the first study, only sixteen were cases of acute adenitis with fever but no localizing signs, and only five were associated with non-respiratory illness.

TABLE VIII

INCIDENCE OF CERVICAL ADENITIS IN TWO SURVEYS OF TONSILLECTOMY AND ADENOIDECTOMY IN CHILDREN AGED 2 TO 15 YEARS DURING FIRST YEAR OF FOLLOW UP

Survey	First				Present			
	No Operation		Tonsillectomy (T+A)		Adenoidectomy only (A)		Tonsillectomy (T+A)	
	Total Episodes	Mean Incidence	Total Episodes	Mean Incidence	Total Episodes	Mean Incidence	Total Episodes	Mean Incidence
No. of Children	154		222		97		98	
Simple Acute Adenitis	8	.05	8	.04	10	.10	1	.01
With Sore Throat	138	.90	16	.07	41	.42	4	.04
With Another Respiratory Illness	48	.31	23	.10	13	.13	5	.05
With Non-Respiratory Illness	4	.03	1	.00	2	.02	3	.03
Total	198	1.29	48	.21	66	.68	13	.13

The decrease in cervical adenitis which followed tonsillectomy was statistically significant. It was related to the reduction in respiratory illness, and in particular in throat infections. In unoperated children 46 per cent. of 301 throat infections were associated with glandular enlargement; after adeno-tonsillectomy the proportion was 19 per cent. of 86 throat infections (Table IX). A similar reduction was seen in the incidence of respiratory illness other than sore throat. In unoperated children, glandular enlargement accompanied 10 per cent. of these upsets; after tonsillectomy with adenoidectomy it was seen in only 3.5 per cent. Glandular enlargement was thus more than four times as common with throat infections than with other forms of respiratory illness; the recurrent association of large cervical glands with upper respiratory infections would thus be presumptive evidence that the throat was involved when otherwise in doubt. After the removal of tonsils and adenoids, there was an absolute reduction in the incidence of glandular enlargement and a reduction in the frequency with which it presented in continuing respiratory infections.

TABLE IX
RELATIONSHIP BETWEEN GLANDULAR ENLARGEMENT AND SORE THROAT IN TWO SURVEYS OF CHILDREN AGED 2 TO 15 YEARS

Survey	First		Present	
	No Operation	Tonsillectomy (T + A)	Adenoidectomy Only (A)	Tonsillectomy (T + A)
Operation				
Number of Children . .	154	222	97	98
Total Sore Throats in 1 year	301	86	142	31
Per cent. Sore Throats with Reported Glandular Enlargement . .	45.8	18.6	28.9	12.9
Difference in Proportions	0.27*		0.16	
Standard Error of Difference	0.06		0.09	

* Statistically significant.

The relative influences of tonsillectomy and adenoidectomy on the occurrence of cervical adenitis are also shown in Table IX. The proportion of sore throat with associated glandular enlargement was similar in both groups of children who had tonsils and adenoids removed (Difference in proportions = 0.057, standard error of difference = 0.079). The proportion in children who had adenoidectomy alone was intermediate between the tonsillectomized and the unoperated groups. Adenoidectomy did not influence the frequency of throat infections, but it reduced the rate of glandular involvement with these infections.

In relation to respiratory illness other than throat disease, glandular enlargement was reported with 4 per cent. of upsets after adenoidectomy, and 2 per cent. after tonsillectomy with adenoidectomy in the second survey. These figures are comparable to the rate of 3.5 per cent. after the combined operation in the first survey. It is suggested that this reduction from 10 per cent. in children having no operation is largely the result of the associated adenoidectomy. Cervical glandular enlargement was thus related to both the tonsils and adenoids. Glandular involvement with respiratory illness other than throat disease was primarily reduced by adenoidectomy; this operation also gave some reduction in the rate of involvement with throat disease, but tonsillectomy reduced this further. Since tonsillectomy gave a large degree of relief from throat disease, cervical adenitis was much less frequent after the combined operation than after adenoidectomy alone.

DISCUSSION

A wide variety of illness has been attributed to hypertrophy of adenoid tissue, e.g. by Roberts (1952), but there has been less disagreement over the indications for removing the adenoids than for tonsillectomy. Most workers accept that obstruction of the Eustachian tube causing deafness, and gross nasal obstruction by the adenoids are indications for their removal at any age. Studies in the United States (Wolman, 1956) and England (Fry, 1957) illustrate the frequency with which otitis media features in the illness records of children undergoing tonsillectomy, but the literature leaves us in doubt whether it is the removal of the tonsils or the associated removal of adenoids which is responsible for the relief of otitis media. Illingworth (1950) has mentioned the disturbing fact that tonsillectomy may be followed by an increased frequency of the disease which it is intended to cure. In the later years of his 10-year study, Kaiser (1940) noted a higher incidence of otitis media in tonsillectomized children than in an unoperated group of children.

In the present study, the children selected were those referred to a surgeon for an opinion on the need for tonsillectomy as in the first survey (McKee, 1963). They had a common criterion, a history of three or more episodes of probable throat infection, or upper respiratory infection with enlarged cervical glands over the past 12 months. It has not been possible to study the value of adenoidectomy for deafness or gross nasal obstruction. The incidence of these upsets in the selected group of children was too low for a statistically satisfactory study, but it has been possible to relate some of the benefits from the combined operation to the removal of adenoids.

In the first tonsillectomy study, random allocation was achieved by a system employing the hospital record number. There resulted a small disproportion in the numbers allocated to the groups for operation and for control study. In the present study randomization was by sealed envelopes. These presented no difficulty in the busy hospital clinics, and provided two equal groups of children.

There was a 2.5 per cent. loss of cases during the 12-month follow-up, compared with a 9 per cent. loss in the previous tonsillectomy survey. The difference can be attributed to parental reluctance to permit a second operation within 12 months of adenoidectomy despite the continuation of frequent throat infections. In the first survey the control group had no operation and anticipated a 2-year follow-up; urgent operation could not reasonably be deferred for this period in several cases, which were then withdrawn from the study.

The immediate morbidity of adenoidectomy in this small series was less than half as great as that resulting from tonsillectomy. The dissection of tonsils is a more time-consuming procedure than curettage of the adenoids. In addition to the greater loss of blood, there is a larger area to heal and a greater interference with feeding. There is clearly a need to define the benefits of the larger operation and to avoid tonsillectomy wherever adenoidectomy alone will relieve the symptoms.

The present studies, however, have revealed few significant differences between adenoidectomized children and unoperated cases. Otitis media was less frequent after adenoidectomy, and tonsillectomy did not reduce this further. Otitis media should not therefore be regarded as an indication for tonsillectomy. It was found that tonsillectomy as part of the combined operation relieved throat disease which was a major source of illness in the selected population we have studied; adenoidectomy did not give this benefit. Neither operation had a significant influence on the incidence or duration of other forms of common respiratory infection. Frequent common colds and coughs should not be regarded as an indication for tonsillectomy or adenoidectomy. The history of illness is thus of importance in selecting cases for tonsillectomy. It was shown in the first survey (McKee, 1963) that tonsillectomy with adenoidectomy has a limited place in children with a history of throat disease; and with increasing age there is a reduced expectation of benefit. In those selected children in whom a good result was shown, the combined operation is the one of choice; adenoidectomy alone is no substitute.

Persistently enlarged cervical glands feature prominently in lists of indications for tonsillectomy,

but some workers consider the adenoids to be primarily responsible for this finding. Large cervical glands seen at a pre-operative assessment may be associated with a recent respiratory infection, and subside shortly afterwards. In the present study enlargement of glands was generally of short duration. The effect of operation was therefore examined in relation to the number of recordings of visible adenitis. The results suggest that adenoidectomy reduces the frequency of glandular enlargement with respiratory infections, but that tonsillectomy reduces this much further. Visible adenitis was more than four times as common with sore throat than with all other forms of respiratory disease. In very young children the symptom of sore throat may be missing during an acute follicular tonsillitis. In these cases a history of repeated glandular enlargement with respiratory infection would suggest that the throat was involved; hence it would be a useful aid in an assessment of the need for tonsillectomy.

SUMMARY

Two hundred children who had been referred to a surgeon for an opinion on the need for tonsillectomy were randomly allocated into two groups, to have tonsillectomy with adenoidectomy, or adenoidectomy alone. They were subsequently followed up by 2-monthly visits to the home, and complete illness records were obtained for the first post-operative year. By comparison with an earlier tonsillectomy survey employing the same methods, it has been possible to relate the benefits of the combined operation, tonsillectomy with adenoidectomy, to one or other part of that operation done alone.

Throat disease was infrequent after the combined operation but the incidence and severity of this disease in adenoidectomized children was similar to that in the previous series of unoperated controls. It would appear that adenoidectomy alone has no influence on the occurrence of throat disease.

Chronic catarrhal conditions occurred less frequently after tonsillectomy with adenoidectomy, but there was no evidence that this group of complaints was relieved by adenoidectomy alone in the group of children selected for this study.

Other groups of respiratory disease occurred with similar frequency and severity in children having one operation or no operation. It is difficult to escape the conclusion that neither tonsillectomy nor adenoidectomy can be expected to benefit children who suffer from frequent colds or coughs.

Otitis media occurred less frequently after either adenoidectomy or the combined operation. The evidence suggests that the reduction in otitis media

after tonsillectomy with adenoidectomy is attributable to the adenoidectomy in particular; tonsillectomy is not indicated for the relief of recurrent otitis media.

In all other respects which were studied, adenoidectomized children behaved like unoperated controls.

The incidence of complications following operation was twice as high in tonsillectomized children as in those having adenoidectomy alone. Tonsillectomy should not therefore be undertaken routinely in children requiring adenoidectomy alone; an associated high attack rate from common respiratory illness other than throat disease, should in no way influence the surgeon to perform the combined operation in these children.

Enlargement of cervical glands was more than four times as frequent with throat disease than with other forms of respiratory disease, hence was much more common when the tonsils were intact. The recurrent association of large cervical glands with respiratory

infections would thus be presumptive evidence that the throat was involved, when otherwise in doubt.

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