THE TONSILS AND ADENOIDS CAUSING RESPIRATORY OBSTRUCTION

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ENLARGEMENT of the tonsils and adenoids is not usually considered to be a cause of respiratory obstruction. The case presented is one in which obstruction was almost total, and which necessitated tracheostomy.

A search of the literature has revealed that only two similar cases have been reported in the last 10 years, both in the United States. These were two negro children aged $1\frac{1}{2}$ and $2\frac{1}{2}$ years, each due to acute infection, one by *β-hæmolytic streptococcus*. Another rare cause of obstruction by the tonsils, occurring in the neonate, was found to be due to a teratoma of the tonsil. In this instance the mass was enucleated, the child dying from acute broncho-pneumonia 36 hours later. In our case, and the two American cases due to infection, tracheostomy was performed, these patients recovered.

Case History

S.H., a female child aged $2\frac{3}{4}$ years, was admitted to Charing Cross Hospital on the morning of June 23rd, 1959, with a history of very noisy breathing for 3 days, and a swelling on the left side of the neck for 2 days.

She had been a noisy breather since birth; this had become very marked in the last 3 days. She was an habitual mouth-breather, and used to snore. Her appetite had been poor for 3 weeks, becoming worse in the last 3 days. There had been no cough, vomiting nor hoarseness. A painless swelling of the left side of the neck had become obvious in the last 2 days. She had been feverish since the preceding night.

On admission she was flushed and distressed, with a pyrexia of 101·2°F and pulse rate of 110 per minute. There was marked enlargement of the cervical glands, especially of the left tonsillar node. The tonsils were grossly enlarged, meeting in the midline except for a small area inferiorly; they were reddened and covered by whitish plaques. The respiratory rate was 28 per minute, with rib recession. There was a marked inspiratory stridor localized to the pharynx. The liver and spleen were not palpable, nor any other lymph nodes.

Throat swabs were taken and intramuscular penicillin started. By 10.30 p.m. the respiratory distress had become so marked that, unless she

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was held upright with the head tilted forward, there was complete respiratory obstruction. Ether anæsthesia was induced and a bronchoscope passed giving instant respiratory relief. Apart from the gross enlargement of the tonsils no abnormality was seen. A tracheostomy was performed by Mr. Lionel Taylor. She became apyrexial 2 days later. The tonsils regressed in size during the next few days, and the tube was removed on June 30th without causing any distress. Tonsillectomy and adenoidectomy were performed on the same day by Mr. Taylor. The post-operative condition was good. She made an uneventful recovery, and was discharged 8 days later.

Investigations

A differential white cell count on June 23rd showed:

W.B.C.s	24,000/cu. mm.
Myelocytes ..	1·0 per cent. (240/cu. mm.)
Lymphocytes ..	52·0 per cent. (12,480/cu. mm.)
Neutrophils ..	28·0 per cent. (6,720/cu. mm.)
Basophils ..	1·0 per cent. (240/cu. mm.)
Monocytes ..	17·0 per cent. (4,080/cu. mm.)
Turk cells ..	1·0 per cent. (240/cu. mm.)

The neutrophils showed a marked shift to the left, and there were many atypical lymphocytes suggestive of glandular fever.

23.6.59. Paul Bunnell negative 1:8.

25.6.69. W.B.C.s 23,300/cu. mm. with similar differential.

2.7.59. Paul Bunnell negative 1:4.

3.7.59. W.B.C.s 16,100/cu. mm., with a rise of neutrophils to 41·5 per cent. (6,680/cu. mm.).

A tonsillar swab on June 23rd, before treatment, grew coagulase-negative staphylococci and non-pathogenic yeasts only. Diphtheroids were obtained from the nasal swab. Several subsequent nasal and tonsillar swabs failed to produce any recognized pathogens, as did a tracheal swab on June 25th. The tonsils and adenoids were swabbed post-operatively, only *Streptococcus viridans* was grown. Yeasts were grown from tonsillar and rectal swabs following the commencement of treatment. The patient's condition responded to 1 per cent. nystatin applied to the tonsils.

Histology of the tonsils and adenoids showed reactive hyperplasia of the lymphoid tissue. There was no evidence of acute inflammation. The hyperplasia tended to be diffuse rather than follicular. At the base of the tonsillar lymphoid tissue there were several tubules lined by cubical epithelium, probably developmental in origin.

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Conclusions

Respiratory obstruction in infancy is most commonly due to laryngeal œdema resulting from inflammation or allergy; other causes include foreign bodies, trauma and congenital deformities. In this case obstruction was due to enlargement of the tonsils and adenoids. It differs from the two reported in the United States in the apparent absence of bacterial infection. The blood counts were suggestive of glandular fever, but two Paul Bunnell tests were negative.

Tracheostomy was performed before tonsillectomy and adenoidectomy mainly because of the risks of general anæsthesia to an infant in a toxic and exhausted state, with the added risks of the systemic spread of possible infection, and of increased hæmorrhage due to hyperæmia. In addition, in this case, a possible diagnosis of glandular fever was extant, and therefore the probability of regression of the lymphoid tissue on recovery.

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