ANAESTHESIA IN RECURRING POST-TONSILLECTOMY
HAEMORRHAGE DUE TO MACROGLOSSIA
A Case Report

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The management of anaesthesia for control of haemorrhage following tonsillectomy constitutes a problem fraught with well known hazards, in a patient often shocked and usually with an airway partially obstructed by blood and clot in the pharynx. The danger of blood entering the trachea during induction has resulted in the widely held view that the anaesthetic agents of choice should be gaseous or volatile, with spontaneous respiration and an initially active cough reflex.

The case here described is of unusual interest on several counts. The patient was a mentally retarded child with macroGLOSSia and other congenital abnormalities, which resulted in a postoperative cycle of respiratory obstruction associated with struggling and venous congestion causing repeated exacerbations of haemorrhage. This failed to respond to the usual local haemostatic measures, and, ultimately, tracheostomy proved the only means of breaking this circle of events. In addition it was found necessary to employ the intravenous route for the four further anaesthetics administered to the child in the twenty-four hours following tonsillectomy.

CASE REPORT

A male child aged five years was admitted to the Louise Margaret Hospital, Aldershot, for routine tonsillectomy. It had been noted at previous outpatient attendance that the child was slow and awkward of speech and appeared mentally retarded, and the mother had mentioned its "difficulty in breathing" since birth.

When seen pre-operatively by the anaesthetist, the child was of normal build for its age, but was very restless and obviously mentally subnormal. There was a marked funnel-shaped deformity of the sternum and a receding lower jaw, while inspection of the oropharynx revealed macroGLOSSia, a high arched palate and large fleshy tonsils. Even at rest mouth breathing was stertorous, but the child was a good colour and otherwise well.

Premedication was with 135 mg (2 grains) of pentobarbitone sodium and 0.65 mg of atropine given two and one hours before operation, with satisfactory effect. Anaesthesia was induced under an open mask with ethyl chloride, and slight difficulty was experienced owing to obstruction by the tongue, until an oral airway could be introduced and was tolerated. After deepening anaesthesia with open drop ether, maintenance was effected with nitrous oxide-oxygen (51:31) and ether delivered via a Boyle-Davis gag, and was smooth and uneventful. After dissection tonsillectomy and adenoidectomy had been performed the child was returned to the ward with an oral airway in situ and breathing freely.

Four hours later the child was reported to be bleeding from the mouth and nose, and when seen was pale and obviously shocked and had a blood pressure of 70/40 mm Hg. There was a steady trickle of blood from the mouth and a lot of clot in the pharynx. Although "round" from the anaesthetic he was breathing with some difficulty and swallowing blood. After taking blood for cross-matching, an intravenous infusion of dextran was started and the child taken to the theatre, having had 0.3 mg of atropine intravenously.

Induction of anaesthesia was attempted in the Trendelenburg position after sucking as much blood as possible from the posterior pharynx; but the use of gas and ether for induction proved well nigh impossible since the large tongue and blood clot constituted an almost total obstruction as soon as consciousness was lost, while the jaw was too tightly clenched to allow introduction of a gag or airway. As a result a gaseous induction was abandoned and thiopentone 150 mg given into the drip tubing, followed by 40 mg of suxamethonium. As soon as the jaw relaxed, and, without inflating the lungs, laryngoscopy was performed and a great deal of blood and clot sucked from the pharynx. The child was then intubated with a plain oral Magill tube and the larynx packed off—anaesthesia being maintained with gas, oxygen and ether given through an Ayres T-piece. Small bleeding points in both tonsillar fossae were ligated, and the residual ooze responded to packing. During operation the child received 500 ml of dextran and 250 ml of blood, and after extubation he vomited about 750 ml of altered blood. He returned to the ward however, in fairly good condition and with the blood drip still running.

After about two and a half hours it was reported...
that the child was bleeding again. When seen his airway was obviously obstructed and he was struggling for breath, with active accessory muscles, cyanosis and gross venous congestion of the neck and face. The abnormally large tongue coupled with faucial oedema from previous manipulations proved resistant to attempts at maintaining an airway by jaw traction, and the bleeding continued despite relief of the obstruction by use of tongue forceps. Three hours after the previous anaesthetic, and after further intravenous premedication with 0.65 mg of atropine the child was taken to the theatre once more. In view of the previous experience, anaesthesia was induced by thiopentone 100 mg followed by 40 mg of suxamethonium given with the patient in the Trendelenburg position, and followed by oral intubation under direct vision after clearing the pharynx of blood. Maintenance was again smooth with gas, oxygen and ether given via a T-piece. Haemorrhage was still profuse, being mainly from the postnasal space, and was controlled only by a pack tied into position.

After the second attempt at haemostasis, the child was once more returned to the ward with the airway in situ and a slow blood drip running; his general state being fairly good.

Less than six hours later, however, he was gagging on the tape retaining the postnasal pack in place, and was again semi-obstructed with grossly congested face and neck; and, as a result of these conditions, haemorrhage recommenced.

It was by now apparent that each time the child recovered consciousness enough to be unable to tolerate an airway, its overlarge tongue (now rendered even larger at its base by oedema) caused severe respiratory obstruction with consequent venous congestion and hypercarbia, which led inevitably to renewed haemorrhage from all raw areas in the pharynx. By this time 1 litre of blood and 500 ml of dextran had been given. It was therefore decided to perform temporary tracheostomy and this was done about fourteen hours after the original tonsillectomy. The method of anaesthesia used was identical with that employed on the previous two occasions, and again haemostasis in the pharynx was effected by packing.

The provision of a clear airway proved finally successful in preventing further episodes of haemorrhage, and on the following day the postnasal pack was removed under nitrous oxide anaesthesia administered through the tracheostomy tube via a T-piece.

Somewhat remarkably, in view of the five anaesthetics in under thirty hours, the child did not produce severe hypotension, and was perfectly satisfactory while the employment of an Ayres T-tube and a fairly high gas flow reduced expiratory resistance to a minimum and prevented carbon dioxide accumulation.

In view of the experience in this case the desirability of avoiding surgery of the nose or pharynx in similar subjects, unless absolutely essential, seems clearly indicated.

SUMMARY
A case is recorded of macroglossia in a mentally retarded child, leading to repeated episodes of haemorrhage following tonsillectomy. The anaesthetic management of this problem is discussed, and the advantages experienced from the use of an intravenous induction plus a short-acting relaxant and intubation are mentioned.

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