HAEMORRHAGE INTO THE TRACHEA AND BRONCHI FOLLOWING INDUCTION OF ANAESTHESIA

A Case Report

BY

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SUMMARY
A case is described of haemorrhage into the trachea and bronchi, following induction of anaesthesia, of sufficient severity to cause complete airway blockage. Removal of blood and blood clots by a suction catheter immediately cleared the airway and allowed the lungs to be re-inflated with oxygen. The patient gave a long history of bronchiectasis. It is suggested that the haemorrhage may either have been the result of a spontaneous haemoptysis or have resulted from trauma to a hyperaemic tracheal mucosa.

A rare complication of anaesthesia is described in which moderately severe haemorrhage into the trachea and bronchi occurred following induction in a woman with a long history of bronchiectasis.

CASE REPORT
A woman of 55 years was admitted for dental clearance to be carried out under general anaesthesia. The patient had a severe degree of bronchiectasis and had had frequent admissions to hospital for exacerbations of the bronchiectatic infection, each exacerbation usually being associated with haemoptysis. She had been seen at anaesthetic out-patients and admission to hospital was delayed until the summer months because of the condition of her chest.

The general condition of the patient before operation was reasonably good considering the medical history. She had a chronic cough with sputum. Examination of the chest revealed numerous scattered rales, especially at the bases; there was only slight evidence of bronchospasm. Her blood pressure was 120/75 mm/Hg.

The patient was premedicated with promethazine 50 mg and atropine 0.4 mg. Anaesthesia was induced using thiopentone 300 mg, and suxamethonium 80 mg was then injected. The patient's lungs were inflated easily with oxygen; there was no evidence of any bronchospasm. A nasotracheal tube (Magill size 7) was passed without difficulty through the nose and through the glottis. Just below the cords the tube was arrested by its tip catching on the anterior wall of the larynx. To dislodge the tip of the tube, the tube was given a twist and a push, but this manoeuvre had to be carried out twice before dislodgement was effected. The tube was passed down into the trachea. The pharynx was then packed with gauze. The endotracheal tube was connected to the anaesthetic apparatus but it was found impossible to inflate the lungs with oxygen. The pharyngeal pack was removed and reflux of gas up the sides of the tube demonstrated that the tube was patent. The nasotracheal tube was removed. Examination with the laryngoscope showed no evidence of nasal or pharyngeal bleeding but it was noticed that there was a little blood-stained frothy fluid in the region of the glottis.

At this stage the patient was severely cyanosed and her general condition gave cause for concern. A cuffed orotracheal tube was passed into the trachea and the cuff inflated. Again it was found absolutely impossible to inflate the lungs with oxygen. Aminophylline (0.25 g) was injected intravenously but no change in the situation was effected. A suction catheter was then passed down the endotracheal tube and a large quantity of blood and blood clots was removed from the trachea and main bronchi. Inflation of the lungs with oxygen could then be carried out easily with improvement in the patient's general condition.

Dental clearance was carried out uneventfully with the orotracheal tube in place. At the end of the operation little further blood could be sucked out of the air passages.

The postoperative course was uneventful. The patient's chest condition appeared to be no worse; she did not suffer from any postoperative haemoptysis.

DISCUSSION
The haemorrhage came from a site below the glottis; there was no bleeding from the nose or the pharynx. The exact location of the site of this bleeding, and its cause is, however, uncertain. The haemorrhage may have been the result of a spontaneous haemoptysis. This is a not uncommon complication of bronchiectasis and it is possible that inflation of the lungs could predispose to its occurrence.
Another explanation is that haemorrhage could have resulted from laceration of the mucosa of the larynx or trachea produced by the tip of the naso-tracheal tube when this was twisted and pushed to effect its dislodgement. A mucosal tear in the trachea will not normally cause a serious haemorrhage, but the situation may be different in the case of a patient suffering from bronchiectasis; where infected sputum is constantly in contact with the tracheal mucosa, the mucosa can become very hyperaemic and it is not unlikely that trauma to such mucosa could cause a considerable amount of bleeding.

The obstruction of the airway appeared to have been complete and was probably due to a combination of mechanical blockage and reflex bronchospasm induced by the presence of the blood and clots in the trachea and bronchi. The fact that inflation of the lungs was so easily effected after the passage of the suction catheter suggests that reflex bronchospasm may indeed have played a part, as such suction that was carried out could only have cleared the trachea and main bronchi and not the smaller bronchi.

The ready availability of a working suction catheter was, in this case, life-saving. The case illustrates, once again, the necessity of having suction apparatus, which can be brought into immediate use, always available in the anaesthetic room.

The complication would appear to be a rare one. The author has not been able to find any previous report of such in the literature.

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HEMORRAGIE TRACHEALE ET BRONCHIQUE APRES INDUCTION DE L'ANES'THESIE

SOMMAIRE

Description d'un cas d'hémorragie dans la trachée et dans les bronches après induction de l'anesthésie, la quantité de sang était assez importante pour provoquer une obstruction complète des voies respiratoires. L'aspiration des caillots sanguins par une sonde d'aspiration dégagea immédiatement les voies respiratoires et permit de regonfler le poumon avec de l'oxygène. Le malade présentait une longue histoire de bronchiectasies. On pense que l'hémorragie peut avoir été due ou bien à une hémoptysie spontanée ou bien à un traumatisme d'une muqueuse trachéale hyperémisée.

BLUTUNG IN DIE TRACHEA UND DIE BRONCHIEN NACH EINLEITUNG DER NARKOSE

ZUSAMMENFASSUNG

Es wird ein Fall beschrieben, bei dem es nach Einleitung der Narkose zu einer Blutung in die Trachea und die Bronchien kam, die schwer genug war, um eine vollständige Verlegung des Luftweges zu verursachen. Die sofortige Entfernung der Blutgerinnsel mittels eines Saugkatheters machte den Luftweg frei und ließ die Lungen sich wieder mit Sauerstoff füllen. In der Anamnese gab der Patient das langzeitige Bestehen von Bronchiectasien an. Es ist daran zu denken, daß die Blutung einmal das Ergebnis einer spontanen Hämoptoe gewesen sein kann oder auch von einem Trauma an der hyperämischen Mucosa der Trachea herurührt haben kann.

SOUTH EAST METROPOLITAN REGIONAL SOCIETY OF ANAESTHETISTS

are holding a JUNIOR STAFF STUDY DAY
at the Sussex Postgraduate Medical Centre, Brighton
on SATURDAY, MAY 20, 1967

The main subject for discussion will be "Pre-operative Assessment".

This meeting is open to junior anaesthetic staff of all grades and while it is intended primarily for those in the S.E. Metropolitan Region applicants from other Regions will be welcome.

Registration fee 5s. to include lunch, tea and refreshments, payable to the Secretary, Sussex Postgraduate Medical Centre, Brighton 7.