A CASE OF SEVERELY CUT THROAT

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SUMMARY
A 42-year-old man was admitted to hospital with serious neck injuries and partial exposure of the oropharynx. He was sedated and the larynx and trachea were anaesthetized with lignocaine to allow endotracheal intubation. In the course of these procedures, previously unsuspected injuries of the tongue and soft palate were discovered. The contraindications to endotracheal intubation under general anaesthesia in cases of this type are discussed.

A coal miner aged 42 yr received multiple injuries when lashed by an exploding high-pressure air hose. About 90 min after the incident he was admitted to hospital. There was a deep laceration 8-10 in. long in his neck displaying the right oropharynx and extending 3 in. beyond the midline to the left. Bleeding was not profuse and the patient entered the anaesthetic room conscious and sitting upright. Although unable to speak, he was composed and quickly communicated that this position was the only one in which he could breathe easily. In fact, he was breathing through the hole in his oropharynx.

The laceration of the neck extended from the tip of the right ear lobe, across the angle of the mandible, over the hyoid bone and across the thyroid cartilage to the lateral tip of the hyoid on the left. The laceration was of uneven depth and the great vessels had been spared, but it opened into the oropharynx with a triangular hole approximately 2" x 2" x 2". Various damaged tissues, including the submandibular gland and duct, extruded from the wound. The thyroid cartilage was spared entirely as the depth of the wound decreased sharply at the greater cornu on the right side, tailing off as a subcutaneous wound on the left. The entire angle of the mandible was absent on the right, about 1 in. of ramus and 2 in. of mandible being lost. Additional injuries included a fractured nose, a fractured skull involving the external wall of the left orbit, a displaced fracture of the left clavicle, and fractures of the ninth and tenth ribs on the left side.

ASSESSMENT
The accident happened at midday and it was probable that the patient had eaten recently. It seemed reasonable to assume there had been moderate to severe blood loss at the time of injury, although haemorrhage was small when the patient was admitted to theatre. His general state indicated mild to moderate shock, so an intravenous infusion with Hartmann's solution was commenced.

The patient was able to breathe spontaneously, but the patency of his airway was tenuous. The absence of the angle of the mandible allowed the tongue to fall back and obstruct respiration unless the patient remained upright. He was quiet but distressed and had evidently inhaled blood, although his chest x-ray on admission indicated that it was not a large amount.

The patient clearly required immediate endotracheal intubation or tracheostomy. The following ways of dealing with the situation were considered:

(1) "Crash induction" and intubation of the trachea. This was rejected because of anatomical distortion and displacements making intubation difficult, the danger of hypotension produced by intravenous induction agents in the presence of shock and the erect position, and the danger of vomiting and inhalation.

(2) An inhalation induction, as described, for example, by Bourne (1962), would have been hazardous because of the difficulty in administering gases while the patient was breathing through the laceration in the neck, hypotension in the erect position, hypoxia from the uncertain control of the airway when the patient became unconscious, and the difficulty of dealing with vomiting.

(3) Nasotracheal intubation was contraindicated because of the fractured nose and the anatomical distortions.

Endotracheal intubation under local anaesthesia with the patient awake seemed to be the most reasonable course of action.

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Phenoperidine 2 mg and droperidol 2 mg were administered i.v. This did not affect ventilation, the level of consciousness, or the systolic arterial pressure which remained about 90 mm Hg. Anaesthesia of the trachea and underside of the vocal cords was effected by the percutaneous injection through the cricothyroid membrane of 4% lignocaine 1 ml. Anaesthesia of the oropharynx and tongue was achieved using pledgets of cotton-wool soaked in plain 4% lignocaine. The anaesthetist positioned himself behind the patient’s left shoulder while his assistant stood facing the patient ready to pass instruments or suction tubes. A large, soaked pledget was held on the patient’s tongue with Magill forceps for 30 sec. The blade of a Macintosh laryngoscope could then be used to depress the anterior half of the tongue to facilitate “painting” the posterior half and the valleculae. At this point it was discovered that a laceration, 2 in. deep, divided the posterior third of the tongue from the anterior two-thirds and revealed a gaping wound full of mucus and blood clot. Thereafter, wide-bore suction was constantly in use to clear the oropharynx of blood and mucus oozing downwards from the nose and tongue. Having bridged the laceration in the tongue with the blade of the laryngoscope, it was possible to advance, anaesthetizing the pillars of the fauces, valleculae and epiglottis.

On pushing forward the tongue another complication was disclosed. The soft palate had been divided transversely and was protruding into the oropharynx by its left margin, exposing the posterior nasal cavity.

The vocal cords were exposed and appeared to be uninjured. They were sprayed liberally with plain 4% lignocaine before the insertion of a lightly greased 9.5-mm cuffed endotracheal tube which the patient accepted without difficulty. After endotracheal intubation had been accomplished, the patient was placed supine and was given nitrous oxide 70% in oxygen. Phenoperidine 6 mg and droperidol 5 mg were injected i.v. and artificial ventilation of the lungs was commenced, using a Blease machine set to deliver a tidal volume of 900 ml at 19 b.p.m.

OPERATION AND SUBSEQUENT MANAGEMENT
A tracheostomy was performed and the mouth and neck injuries were repaired. The patient was transferred by ambulance to the Intensive Care Unit of Edinburgh Royal Infirmary, some 17 miles away.

On the journey he remained asleep and lightly sedated with “Entonox” which he breathed spontaneously through the “on demand” valve. He made a good recovery and later underwent bone grafting to the mandible in the Department of Oral Surgery.

DISCUSSION
In a review of 22 patients with cut throat presenting over a 10-yr period at a Manchester teaching hospital, Ellis (1966) described the effects produced by lacerations, both deliberate and accidental, at various anatomical levels. He recommended specifically the use of awake endotracheal intubation under local anaesthesia for three major reasons:

(1) A completely severed larynx or trachea may be held together by the patient’s own conscious efforts. Muscle relaxation following the induction of general anaesthesia may allow displacement and lead to difficulty in intubating the trachea below the wound.

(2) The risk of vomiting is minimized when the patient has a full stomach.

(3) Wounds at any level in the neck may sever large veins and lead to air embolism. This risk is increased in the presence of respiratory obstruction which tends to increase intrathoracic subatmospheric pressure during inspiration. Respiratory obstruction may be unavoidable, if only for a few seconds, when using an intravenous induction technique.

In 1962, Ray described endotracheal intubation in a man with a tracheal laceration who had to sit erect or lean forward in order to breathe comfortably. In this case the obstruction was attributed to a flaccid epiglottis produced by injury to the superior laryngeal nerve. The mechanical difficulties of an unstable mandible and an uncontrollable tongue probably account sufficiently for our patient’s refusal to lie supine.

Although the case report described here is that of a most unusual accident, there is no doubt that similar injuries might be produced in a traffic road accident or result from an explosion or gunshot wound (Boyd, 1975).

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REFERENCES


CAS D'UNE GORGE SERIEUSEMENT COUPEE

Un homme de 42 ans est entré à l'hôpital porteur de très graves blessures au cou avec exposition partielle de l'oropharynx. On lui a administré un sédatif, puis anesthésié le larynx et la trachée à l'aide de lignocaine de manière à permettre le tubage endotrachéal. Au cours de ces soins, on a découvert des blessures à la langue et au voile du palais que l'on n'avait pas soupçonnées auparavant. On discute dans ce document des contre-indications du tubage endotrachéal sous anesthésie générale dans des cas de ce genre.

DER FALL EINER SCHWEREN HALSVERLETZUNG

ZUSAMMENFASSUNG


UN CASO DE CORTE GRAVE DE GARGANTA

SUMARIO

Se admitió en el hospital a un hombre de 42 años con heridas graves en el cuello y exposición parcial de la orofaringe. Se le administró un sedativo y se le anestesió la laringe y la tráquea con lignocaina para permitir la entubación endotraqueal. En el curso de estas operaciones, se descubrieron heridas de la lengua y el paladar blando no descubiertas en un principio. Se discuten las contra-indicaciones a la entubación endotraqueal bajo anestesia en casos de este tipo.