BLUNT TRAUMA TO THE CERVICAL PORTION OF THE TRACHEA
A case report

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SUMMARY
A case of closed injury to the cervical portion of the trachea, caused by a wheat-threshing machine, is reported. The patient presented with extensive subcutaneous emphysema, but without any respiratory distress. The unique problem faced during the management of an anterolateral tear of the trachea is highlighted.

Case reports of rupture of the cervical portion of the trachea are rare and most have been associated with high-speed accidents. This report describes a case of closed injury to the cervical portion of the trachea which was caused by a wheat-threshing machine. Despite adherence to the anaesthetic technique suggested for such patients (Seed, 1971) the problem encountered during intubation of the trachea was unique and, we believe, worthy of discussion.

CASE REPORT
The clothing of a 40-year-old farmer was trapped inside the thresher and, as a result, he was dragged towards the machine and struck the front of his neck against the top of the machine. Haemoptysis and swelling over the neck were evident soon after the incident. There was neither respiratory distress nor loss of consciousness at any time. However, he did have difficulty in speaking and noticed an increase in swelling over the neck and upper portion of his chest. He was admitted to hospital and managed conservatively for upper airway injury. Four days after admission he was prepared for emergency exploration of the neck since the subcutaneous emphysema was spreading gradually over the whole body.

Examination revealed a swollen patient and crepitus could be felt which extended from the lower eye lids down to his wrists and ankles. Respiratory and cardiovascular systems appeared normal. An x-ray of his chest confirmed the presence of subcutaneous air. No premedication was given.

Atropine 0.3 mg was administered i.v., the patient preoxygenated and anaesthesia was induced with 50% nitrous oxide in oxygen plus increasing concentrations of halothane (Fluotec MK3) via a Magill system. Once surgical anaesthesia was established intubation of the trachea was attempted using an 8.5-mm Magill oral cuffed endotracheal tube. Resistance was felt approximately 2 cm below the vocal cords. Manipulation in an attempt to overcome the resistance resulted in laryngospasm. Ventilation with a mask was impossible and suxamethonium 75 mg was administered to relieve the laryngospasm and to facilitate intubation. An 8-mm Magill oral cuffed endotracheal tube was passed, but the cuff of the tube could be inserted no further than the laryngeal inlet as a result of total resistance, more proximally, to further insertion. However, the airway was patent and the tube was left in situ. Largngopharyngeal packing was carried out to prevent any leak of air. Spontaneous respiration returned immediately and there was no need to assist respiration. Anaesthesia was maintained with 1–2% halothane in oxygen using a Magill system. Pentazocine 30 mg was administered i.v. to provide analgesia.

Exploration of the neck revealed an anterolateral tear involving the second and third rings of the trachea. The tip of the endotracheal tube was hinged at the site of the tear. Tracheotomy was performed and primary repair of the tracheal tear undertaken. The subsequent periods during and after operation were uneventful.

DISCUSSION
Frequently, concealed injury of the cervical portion of the trachea is life-threatening. However, in this instance extensive subcutaneous emphysema was the clinical presentation. Irrespective of the nature, site and severity of the injury, maintenance of the

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The airway is of paramount importance. Seed (1971) reported a case and reviewed the literature on laryngo-tracheal injury and recommended induction of anaesthesia and intubation of the trachea under spontaneous respiration using halothane. Donchin and Vered (1976) stressed the importance of evaluating the extent of the injury before intubation of the trachea and suggested that any such evaluation or exploration, or both, be carried out with the patient breathing spontaneously via a facemask. However, exploration of the neck in an adult patient with a swollen neck (without tracheal intubation) would be difficult and we feel that the establishment of an adequate airway is imperative. The induction of anaesthesia by mask was uneventful and intubation of the trachea would have been uneventful had we refrained from manipulating the endotracheal tube to overcome the resistance. Sirker and Clarke (1973), without being aware of the nature of injury, attempted intubation under suxamethonium and felt resistance just below the larynx. In this case suxamethonium was used not to facilitate intubation but, rather, to relieve laryngospasm. Despite adequate muscle relaxation, the resistance was felt while passing a smaller sized endotracheal tube.

This case emphasizes that, irrespective of anaesthetic techniques, resistance to intubation is not an uncommon problem in patients with damage to the cervical portion of the trachea.

In retrospect, we conclude that manipulation to overcome resistance during intubation is to be avoided in tracheal injury for two reasons. First, complications, like laryngospasm and bucking on the tube, are prevented and, second, overenthusiastic manipulation may create a false passage in the neck. In addition, we feel that the use of neuromuscular blocking drugs is unwise since the institution of IPPV during apnoea may cause additional problems (pneumothorax, pneumomediastinum or pneumopericardium) (Thomas, 1972; McCaughey and King, 1975).

REFERENCES