

Textbook of

**ADULT**

**EMERGENCY**

**MEDICINE**

# Textbook of **ADULT EMERGENCY MEDICINE**

Sixth Edition

EDITED BY

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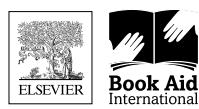
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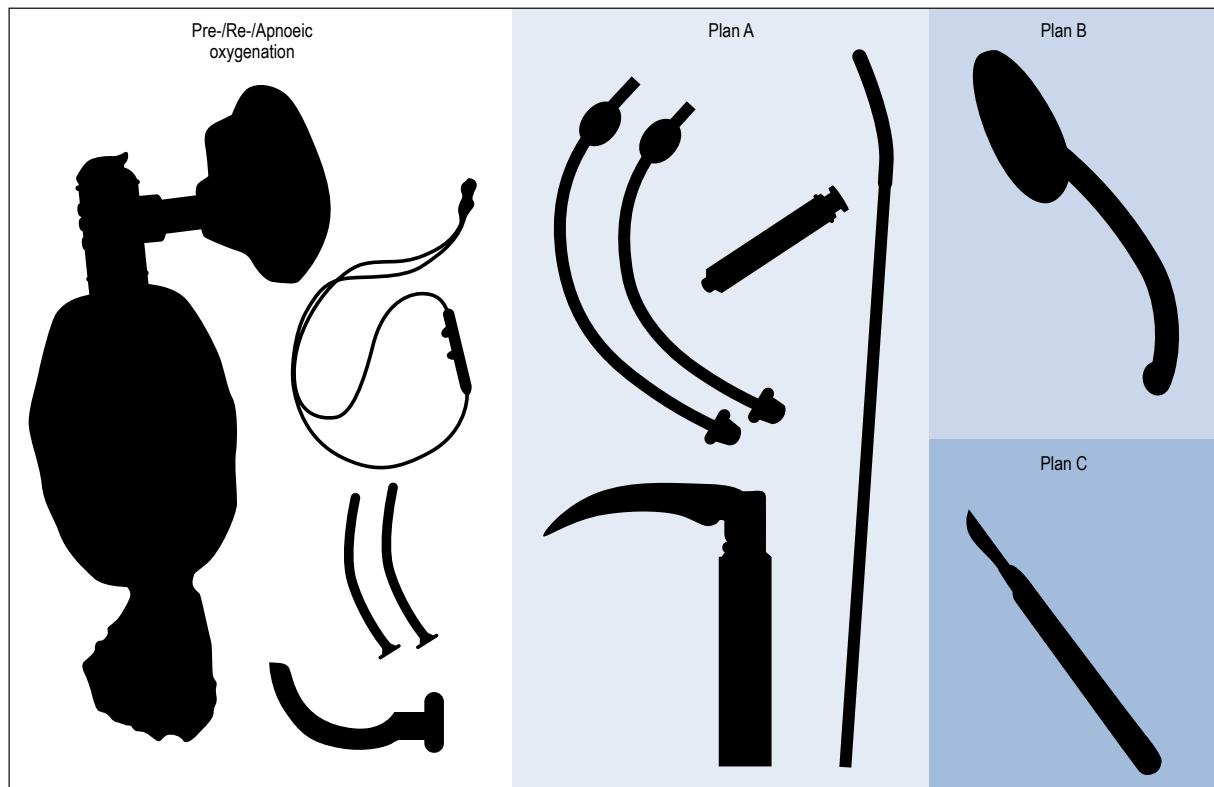
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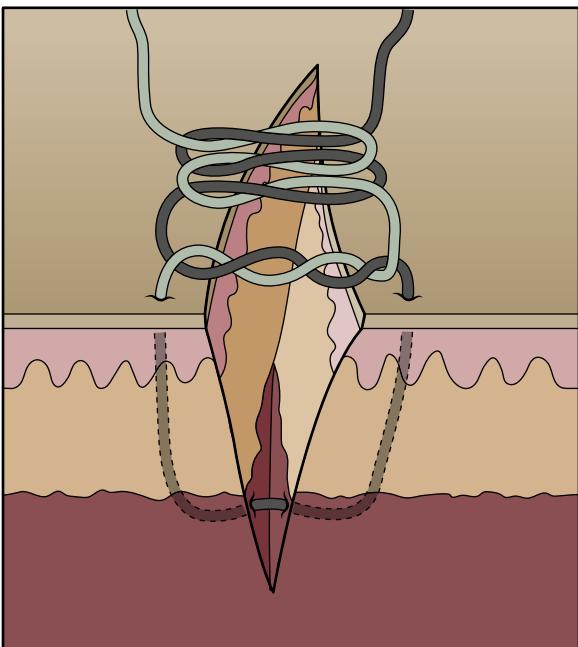
## 2.1 AIRWAY AND VENTILATION MANAGEMENT

ED intubation checklist			
Team	Patient	Equipment	Plan
<ul style="list-style-type: none"> <li><input type="checkbox"/> Is this a potentially <b>difficult airway</b>?</li> <li><input type="checkbox"/> Do <b>anaesthetics</b> or <b>ENT</b> need to be contacted?</li> <li><input type="checkbox"/> Senior ED doctor and resource nurse <b>notified</b>?</li> <li><input type="checkbox"/> <b>Roles allocated?</b> <ul style="list-style-type: none"> <li>▪ Team leader</li> <li>▪ Airway doctor</li> <li>▪ Airway nurse</li> <li>▪ Drug administrator</li> <li>▪ Scribe</li> <li>▪ CICO rescuer</li> <li>▪ +/- Cricoid pressure</li> <li>▪ +/- Manual in-line stabilisation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Position</b> optimised?           <ul style="list-style-type: none"> <li>▪ Manual in-line stabilisation with collar open</li> <li>▪ Reverse trendelenburg</li> <li>▪ Occipital raise</li> <li>▪ Ramp (unless trauma)</li> </ul> </li> <li><input type="checkbox"/> <b>Physiology</b> optimised?           <ul style="list-style-type: none"> <li>▪ Fluid bolus</li> <li>▪ IV access x2</li> <li>▪ Ino- / vasopressor considered (unless trauma)</li> </ul> </li> <li><input type="checkbox"/> <b>Preoxygenation</b> optimised?           <ul style="list-style-type: none"> <li>▪ 3 minute timer</li> <li>▪ Rigorous mask seal</li> <li>▪ BVM</li> <li>▪ Nasal cannula</li> <li>▪ Consider NIV / PEEP valve</li> <li>▪ Consider gentle ventilation during apnoea</li> </ul> </li> <li><input type="checkbox"/> <b>Monitoring</b> applied?           <ul style="list-style-type: none"> <li>▪ EtCO<sub>2</sub> waveform seen</li> <li>▪ BP (cycled q3min NIBP)</li> <li>▪ SpO<sub>2</sub></li> <li>▪ ECG</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Is equipment checked and <b>ready</b> (template)?           <ul style="list-style-type: none"> <li>▪ BVM with O<sub>2</sub> flowing</li> <li>▪ Nasal cannula O<sub>2</sub></li> <li>▪ Airway adjuncts</li> <li>▪ Supraglottic airway device</li> <li>▪ ETT x 2 (+ 1 size down)</li> <li>▪ Laryngoscopes x 2 (direct/video)</li> <li>▪ Bougie</li> <li>▪ CICO rescue equipment</li> <li>▪ Suction</li> </ul> </li> <li><input type="checkbox"/> Are <b>drugs and lines</b> ready?           <ul style="list-style-type: none"> <li>▪ IV checked and flushed</li> <li>▪ Fluids on pumpset</li> <li>▪ Post-intubation sedation and analgesia chosen</li> <li>▪ Ino- / vasopressors discussed</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Plan verbalised?</b> <ul style="list-style-type: none"> <li>▪ A:</li> <li>▪ B:</li> <li>▪ C:</li> <li>▪ D:</li> </ul> </li> <li><input type="checkbox"/> What is the <b>reoxygenation desaturation stop-point</b>?</li> <li><input type="checkbox"/> What <b>drugs / doses</b> are to be given?           <ul style="list-style-type: none"> <li>▪ Induction</li> <li>▪ Muscle relaxant</li> </ul> </li> <li><input type="checkbox"/> Does anyone have <b>questions or concerns</b>?</li> <li><input type="checkbox"/> Do we need additional <b>help</b> or equipment?</li> </ul>

**FIG. 2.1.3** Example of an emergency department (ED) intubation checklist. *Bp*, Blood pressure; *BVM*, Bag-valve-mask; *CICO*, can't intubate can't oxygenate; *ENT*, ear, nose and throat; *EtCO<sub>2</sub>*, end-tidal carbon dioxide; *ETT*, endotracheal tube; *NIBP*, noninvasive blood pressure; *NIV*, noninvasive ventilation; *O<sub>2</sub>*, oxygen; *PEEP*, positive end-expiratory pressure; *SpO<sub>2</sub>*, peripheral capillary oxygen saturation.



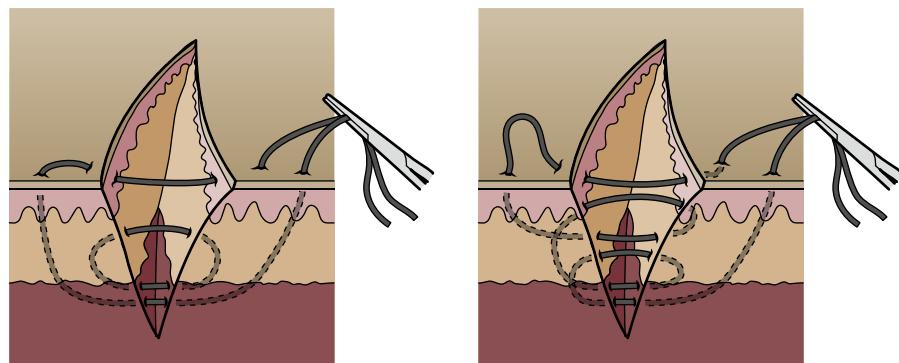
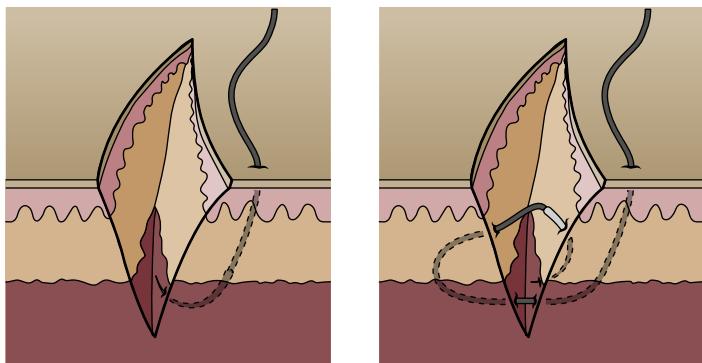
**FIG. 2.1.4** Emergency department Rapid-Sequence Intubation kit dump.



**FIG. 3.10.10** The loop suture method of avoiding excessive tension on a stitch. (From Patel PR, Miller MA. Postcare recommendations for emergency department wounds. *Emerg Med Clin North Am*. 2007;25[1]:147–58. From an original drawing by Elaine Wheildon.)

**Table 3.10.3 Complications of facial wounds**

Complications	Notes
	Potentially fatal owing to the valveless venous communication
Arteriovenous fistulae	Due to profuse vascularity—uncommon
Scarring	Producing facial asymmetry and cosmetic implications
Deformity	Due to unrecognised fractures, such as of the nose or malar bone
Facial palsy	Due to damaged facial nerves
Epiphora damage	With tissue loss or scarring everting the lower lid, or canaliculus
Salivary fistula	After disruption of the parotid duct
Drooling	With tissue loss, scar contracture or local nerve damage
Corneal exposure	With tissue loss, scar contracture or local nerve damage



**FIG. 3.10.11** A deep closure method utilising a variable number of loops, modified from a Mayo Clinic stitch. (From Drake DB, Gear AJ, Mazzarese PM, Faulkner BC, Woods JA, Edlich RF. Search for a scientific basis for continuous suture closure: a 30-yr odyssey. *J Emerg Med*. 1997;15[4]:495–504. From an original drawing by Elaine Wheildon.)

there is evidence of a poor correlation with wound appearance 6–9 months later in head and neck wounds. The degree to which different factors such as wounding mechanism, wound repair technique and patient host factors have a role remains to be determined.<sup>41</sup>

All percutaneous stitches will cause needle marks if left in situ longer than 8 days, as epithelium migrates down the needle track. Removal too early predisposes to wound dehiscence (Fig. 3.10.15); however, the wound may be supported by skin tapes. If tapes were the primary method of closure, they may be left on for at least 10 days or until they fall off, provided that the skin is not sensitive to the adhesive, as evidenced by erythema or bulla formation.

Suture removal technique is also important. To avoid tissue trauma and additional scarring, stitches should be cut at the knots with iris scissors after gentle washing with saline to remove suture scissors are too big for the task.

### Newer techniques of wound closure

Knotless barbed sutures are being used in select procedures, and studies have shown them to reduce suturing time, facilitate effective wound closure and minimised knot-related complications.<sup>42</sup> Absorbable staples are being used in some surgeries but are yet to show any clinical benefit over standard techniques.<sup>43</sup>