

Station 3

Candidate instructions:

You are a consultant in a tertiary ED.

One of your registrars, Alex, would like to discuss a case they recently saw with you.

A patient with a tracheostomy presented acutely short of breath and hypoxic.

They would like to discuss your approach to the hypoxic tracheostomy patient

Your tasks:

- Outline an approach of assessing a dyspnoeic tracheostomy patient
- Outline your management of a hypoxic tracheostomy patient
- Answer any questions the registrar might have

Domains assessed:

Medical expertise (80%)

- Initial assessment (30%)

- Management (50%)

Scholarship and teaching (20%)

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	Medical Expertise: Initial Assessment (30%)	Initial Assessment: Severity/ treatment/response + degree of compromise • Respiratory distress/ effort/ resp rate/ Saturations/ O2 requirement . HR/BP • Adequacy ventilation/ air entry via trache: Equal AE/ added sounds/ reduced sounds • Treatment so far + response : Oxygen/ Suctioning etc • Trache position: normal vs malpositioned Differential Diagnosis • Tracheostomy causes ✓ ◦ Obstruction: Partial/ complete – Secretions (infection)/ bleeding (clot) ✓ ◦ Displacement/ malposition ✓ ◦ Equipment malfunction • Non-tracheostomy causes ✓ ◦ bronchospasm (asthma/COPD/anaphylaxis), pneumonia, pulmonary oedema, pulmonary embolism, pneumothorax, pleural effusion, acute coronary syndrome Focused History = features relevant to identifying underlying cause/ guiding management • Indication for tracheostomy = implications for management ◦ Upper airway obstruction – trauma, cancer, infection: Is problem ongoing? = is airway (ETT) likely to be difficult? ▪ Laryngectomy? = A key detail = ventilation/ intubation via upper airway impossible and all therapies must be via stoma ◦ Secretion Mx/ airway protection with high risk of aspiration – neuromuscular disorders, head injuries, stroke OR Long term or weaning mechanical ventilation = Airway management (standard ETT) or ventilation may NOT be difficult • Time since tracheostomy ✓ ◦ < 7 days - Tract not mature ✓ ◦ > 7 days - Tract mature -> therefore safe for exchange of tubing ✓ • Type of tracheostomy tube: ◦ inner cannula? May be blocked by secretions/ may be removed to unblock ✓ ◦ cuffed tube? May let down cuff to allow air passage ✓ • Tracheostomy displacement/malfunction risk - recent tracheostomy changes ✓ • Bleeding risk – anticoagulation, haemoptysis ✓ • Infection risk – recent infections, fever, cough, increased sputum production ✓ • Non-tracheostomy causes – bronchospasm (asthma/COPD/anaphylaxis), pneumonia, pulmonary oedema, pulmonary embolism, pneumothorax, pleural effusion, acute coronary syndrome	Differential Diagnosis The minimum requirement for candidates is: Must mention: • Tracheostomy obstruction (1 cause) ✓ • Tracheostomy displacement ✓ Must mention non-tracheostomy causes (at least 2) ✓ Focused History The minimum requirement for candidates is: Must mention/explain both of: • Indication for tracheostomy (+ 1 reason why relevant) ✓ • Time since tracheostomy (+ why relevant) ✓ And 2 of the following: • Tracheotomy vs laryngectomy ✓ • Type of tracheotomy tube ✓ • Tracheostomy displacement/malfunction/ recent change • Bleeding/ infection (sputum production) • Non-tracheostomy causes ✓	
		Candidate Feedback Statements • Describe differential diagnosis for presentation ✓ • Describe important details of history ✗ • Describe relevance of details of history to management ✓		

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Domain	Criteria	Marking rules to be 'at a minimum level of competence'/other comment	Criteria met / not met
Scholarship & Teaching: Teaching (20%)	Teaching - Establishes rapport and makes learner feel safe and supported ✓ - Checks level of prior knowledge and defines learning goals ✓ - Demonstrates a structured approach to the topic and appropriate detail ✓ - Encourages learner participation and invites questions ✓ - Checks understanding in learner (regularly and at conclusion) ✓ - Summarises the session with appropriate emphasis of key elements ✓ - Suggests follow up activities/advises where to find resources ✓	Teaching The minimum requirement for candidates is establishing rapport and making learner feel safe and supported AND demonstrating at least 3 of the following 6: - Checks level of prior knowledge and defines learning goals - Demonstrates a structured approach to the topic & appropriate detail - Encourages learner participation and invites questions - Checks understanding in learner (regularly and at conclusion) - Summarises the session with appropriate emphasis of key elements - Suggests follow-up activities/advises where to find resources	
		Candidate Feedback Statements	
		- Establish rapport - Make learner feel safe and supported - Display effective teaching strategies	

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Medical Expertise: Demonstration of Approach (50%)	Initial Assessment and Management	The minimum requirement for candidates is: All of following are required:
	1. Ensure in resuscitation area + Call for help – ENT, ICU/Anaesthetics 2. Assess ABCs : (likely addressed above) 3. Rapid assessment of cause of respiratory distress/ hypoxia + tracheostomy assessment a. Look, listen, feel for breathing at face + tracheostomy/ listen to chest 4. Administer O2 to mouth/nose + tracheostomy a. If laryngectomy patient then oxygenation attempts via mouth/nose is not required as upper airway is no longer connected to lungs. b. If doubt then apply O2 to both face (15 l/min NRB mask) + tracheostomy (paediatric or adult mask) 5. Assess tracheostomy patency a. Remove any attached devices – caps, speaking valves, humidifiers b. Remove inner tube: may resolve blockage if blocked with secretions (<i>Higher performing candidates will identify the importance of this step</i>) c. Pass suction catheter (bougie not ideal as risk of creating false tract) If suction catheter passes then tracheostomy is at least partially patent: What to do now? • Reassess for 'non-trache causes' • Tracheal suction/ clear secretions. ✓ • Provide O2/Ventilate/ assist ventilate through tracheostomy as appropriate • ENT review: ? flex endoscopy through tracheostomy. Consider repositioning trache if obviously mal-positioned (don't remove) If suction catheter does not pass then tracheostomy is blocked or displaced d. Deflate balloon = may allow airflow from upper airways past a blocked/ partly displaced tracheostomy tube. If improves then ENT review re trache replacement/ endoscopy (<i>Higher performing candidates will identify the importance of this step</i>): • If still no improvement then remove tracheostomy (caution if tracheostomy <7 days old): ○ Re-assess both face + stoma ○ Administer O2 to both face + stoma ○ Replace tracheostomy or attempt intubation from top (unless laryngectomy) If positive pressure ventilation (PPV) needed then • Fiberoptic inspection prior to tracheostomy removal reasonable if immediately available • If PPV via mouth/nose -> occlude stoma • If PPV via stoma -> use paed's mask or LMA + occlude mouth/nose • If still no improvement/ ventilation • replacement of tracheostomy or intubation via either mouth/stoma reasonable (Consider 2 airway teams) If tracheostomy is functioning normally then to proceed to assess for non-tracheostomy causes of acute respiratory distress.	The minimum requirement for candidates is: All of following are required: • Manage hypoxia appropriately with oxygen to both face and tracheostomy ✓ • Assesses tracheostomy patency ✓ • If tracheostomy blocked, then identifies potential need to remove tube and replace trache, insert ETT, or ventilate via face or stoma ✓ • If tracheostomy patent outlines minimum 2 appropriate further actions from left (must include consideration of non-trache causes) • Have an appropriate approach to ventilating this patient, including mentioning supraglottic PPV vs Tracheostomy PPV.
	Candidate Feedback Statements • Manage hypoxia appropriately ✓ • Describe specific assessment and management of tracheostomy problems • Describe ventilation strategies in this patient	