

RLH TRAUMA T.A.C.T.I.C. NOTE

ISSUED
Mar 2020
For
REVIEW
Oct 2020

Resuscitative Thoracotomy in ED (COVID-19)

What?

- This T.A.C.T.I.C. concerns the practice of Resuscitative Thoracotomy in the ED Resus Bay of the Emergency Department for patients with known or suspected COVID-19
- Aerosolisation and secondary release of air from underlying lung injury is a procedure that carries risk of transmission

Which patient?

- Any in-extremis patient for the relief of cardiac tamponade (confirmed on FAST USS imaging or clinically suspected)
- Any patient for the treatment of significant haemothorax (>1.5L immediately after ICD placement) secondary to blunt or penetrating trauma and associated cardiovascular instability
- Any patient who has recently suffered cardiac arrest secondary to penetrating or blunt trauma
- Any patient with a positive diagnosis of COVID-19 or high index of suspicion

Which provider?

- Most senior ED, HEMS, or Trauma Surgery Consultant, General Surgical Registrar who has undergone defined training (minimise the number of staff exposed)
- Assistant and scrub nurses, anaesthetists need to be similarly clothed with optimal PPE
- All other staff should be >2m away (aim to keep number of team members to a minimum)

When?

- A FAST positive patient who still has a cardiac output should ideally undergo surgery in the operating theatre
- A patient who is peri arrest or in cardiac arrest should undergo immediate RT in the Resus room

When Not?

- A patient who has had no signs of life for a prolonged period that is not consistent with survival (Cardiac arrest for over 10 minutes with no cardiorespiratory support, particularly blunt trauma)

Where?

Resus bay 8 has the equipment required for RT, this equipment should follow the patient on their journey to the operating theatre.

With what?

PPE (FFP3 mask or equivalent, hat, gown, sterile gloves, (2x), eye protection) https://www.youtube.com/watch?v=kKz_vNGsNhc
chlorhexidine, theatre light positioned, anaesthesia may occur concurrently with the procedure and in the event of cardiac arrest RT should proceed immediately
Scalpel, spencer wells, tough cut or Mayo scissors, Rib spreader, skin stapler, 3/0 prolene, 2/0 vicryl or silk stitch (theatre scrub staff will assist)

How?

PREP	Thoracotomy	Cardiac repair	Aortic control/Lung twist
<ul style="list-style-type: none"> -Patient should be positioned on theatre trolley with light over the left side of the patient -Betadine prep of the chest wall -Thoracotomy set opened -3/0 prolene, 2/0 vicryl or large silk suture available -Suction attached and working -Large swab packs opened and counted -WHO Surgical safety check list if time permits (communication between TTL, operating surgeon and lead anaesthetist). Brief should highlight suspected/known COVID 	<ul style="list-style-type: none"> -Bilateral thoracostomy immediately -Left anterolateral thoracotomy and relief of tamponade ASAP -extension to 'clamshell' to permit greater access (place rib spreaders with ratchet towards the right to permit access to aorta to gain aortic control) -Open the pericardium in inverted 'T' shape (always) -find injury and control it -Communicate findings with TTL 	<ul style="list-style-type: none"> -Attain digital control first -If wound is large and bleeding consider early use of staples -Horizontal mattress sutures to avoid coronary artery occlusion -Once wound controlled and if required, proceed to internal cardiac massage and consider proximal aortic control by pressure or clamp -If good cardiac output, proceed to theatre for definitive management, washout, haemostasis, drain placement and closure 	<ul style="list-style-type: none"> -The distal thoracic aorta should be recognised running along the left side of the chest -Dissect a small window anteriorly and posteriorly (but not circumferentially) -Place a straight or curved aortic clamp across the aorta -(mobilisation of the left lung may be required to gain access to the aorta) -Torrential bleeding from the lung can be controlled by proximal vascular control by twisting the hilum, encircling it with a tube tie or clamping. Division of the inferior pulmonary ligament is required first to permit these manoeuvres -Wall suction should be used and not LSU

What happens after?

- If patient fails to regain ROSC despite maximal resuscitative efforts then futility discussions should be had
- Remove PPE safely to prevent further contamination. This will require an assistant <https://www.youtube.com/watch?v=oUo5O1JmLH0>
- If ROSC achieved then proceed to the operating theatre for definitive management
- The chest should be covered with swabs and drape to reduce aerosolization and transmission to team members during transfer
- Minimal staff should be involved in the transfer, while other doff appropriately and move to theatre
- Operating theatre team should be notified of 'COVID thoracotomy on route to emergency theatre' to allow time for OR to be cleared appropriately

Where do I learn more?

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LOCAL BARTS HEALTH RESOURCE: https://www.youtube.com/watch?v=kKz_vNGsNhc
<https://www.youtube.com/watch?v=1CWXWtsZpgo&feature=youtu.be> <https://www.youtube.com/watch?v=oUo5O1JmLH0>
TRAUMA SERVICE DESIGNATED E-Resource: <http://www.trauma.org/index>.