

**STATE TRAUMA ADVISORY BOARD
MANAGEMENT RECOMMENDATIONS**

**SUBJECT: MORBIDLY OBESE TRAUMA PATIENT
RESUSCITATION**

These recommendations represent a suggested treatment method based on a review of the literature and expert opinion reflecting the clinical experience of members of the STAB. The literature review was not performed according to a formal evidence-based medicine process and would therefore be classified as Class III evidence. These recommendations represent a treatment approach without proven superiority over other treatment methods. Their employment is at the discretion of the managing physician.



PURPOSE: Resuscitation of the morbidly obese trauma patient can pose major difficulties in airway, breathing, and circulatory management as part of the primary survey, and then further difficulties with secondary survey. These guidelines attempt to share knowledge and experience gained through the resuscitation of the seriously injured morbidly obese patient.

I. PRIMARY SURVEY

A. Airway Management:

1. O₂ by Mask
2. O₂ by BPAP *
3. Endotracheal Intubation
4. Surgical Airway (Attachment)

* Some extremely obese patients have undiagnosed sleep apnea and obstruct their airway when lying flat.

B. Breathing: Assessment of breath sounds can be difficult

O₂ saturation monitor:

Expect 88 - 92% on 6L/O₂ by mask

Some CO₂ retention is also probable (46-52)

1. Do initial ABG, and insert radial arterial catheter for monitoring

2. If ventilated, the patient should have ventilator

settings:

V_F 16-20; V_T 10cc/kg; no PEEP

Flail Chest - Can be a difficult diagnosis clinically. Palpation of chest wall may provide the only clue. Intubate for any signs of respiratory failure.

Pneumo/Hemothorax - Needle thoracentesis may need to be done with 16 gauge spinal needles if tension pneumo thorax is suspected.

Chest tube insertion should not be done in the axilla or under the pectoral fold. The skin is too loose and the holes in the chest tube will piston in and out of the pleural cavity.

Location for Chest Tube Insertion:

Pneumothorax - 24F tube in 2nd ICS, MCL. Cut off end of chest tube until last side hole remains.

Hemothorax - 32F tube in inframammary crease mid axillary line. Insert tube to at least 8 cm beyond last side hole. Angle tube posteriorly. Secure with 2 vertical mattress sutures.

C. Circulation:

IV Access - Standard large bore IV approaches recommended by ATLS may be impossible or difficult because of thickness of subcutaneous fat and relatively short catheters.

Example: Subclavian veins
Antecubital veins

Skin folds and hygiene may preclude large bore catheter insertion percutaneously or by cutdown.

Example: Saphenous vein @ groin
Femoral vein @ groin

Recommended Large Bore Access Route

1. Internal jugular vein (percutaneous)
2. Saphenous vein @ ankle (cut down)

Last Resort: IV Access

1. Interosseous Infusion device (tibia)
2. Right atrium via median sternotomy

Two Lumen French catheters are better than introducer sheaths for Swan Ganz catheters.

Arterial Blood Pressure Monitoring

1. Radial artery - percutaneous or cutdown
2. Common femoral artery

II. SECONDARY SURVEY - Special problems with the morbidly obese.

A. Chest X-ray - Portable:

1. May be easier if film taken with HOB @ 10 - 15°
2. Cat scan of chest may be the only good way to assess mediastinum, lungs and chest wall.

B. Cardiac Assessment:

1. Rhythm and blood pressure instability raise possibility of cardiac injury or abnormality.
2. Transthoracic echocardiogram (TTE) helps to assess cardiac performance (ejection fraction), possibility of cardiac injury, and cardiac filling (CVP).
3. Transesophageal echocardiogram (TEE) offers better information when TTE is poor quality.

C. Abdominal Assessment:

1. Clinical exam \leq 25% accurate
2. DIAGNOSTIC PERITONEAL LAVAGE - technically difficult
3. Abdominal CAT scan - preferred method of assessment
4. NASOGASTRIC/OG decompression of stomach - essential
5. Foley catheterization with urinalysis - essential

D. Recommendations for Multi-System or Moderately Severe Single System Injury (AIS > 4):

1. Monitoring and observation in INTENSIVE CARE UNIT for at least 24 hours.
2. Careful attention to pulmonary mechanics of breathing.

3. Over-monitor rather than under-monitor.
4. Sterile technique to avoid noscomical infection.
5. Plan for early mobilization to chair.



EMERGENCY TRACHEOSTOMY IN THE MORBIDLY OBESE



SHORT FAT NECK

1. Vertical Incision, Midline
2. Divide Thyrod Isthmus
3. Do Tracheostomy

HEAVY JOWLS

1. Make Collar Incision Low in Neck
2. Sweep Skin and Fat Cephalad

Insert 7, 8 or 9 mm
Armored Mallinckrodt
Endotracheal Tube

Suture Tube to Anterior Tracheal Wall
With 2-0 Silk Sutures

Transfer to Level I or Level II
Trauma Center

Call OMFS or Plastic Surgeon

In 4 or 5 Days, Change to Ruscal Extra
Long Tube or
Portex Extra Long Trach Tube

Change Over Guide Wire!!!