ED CHALLENGES WITH THE MORBIDLY OBESE PATIENT

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CONFLICT OF INTEREST

• None!
CASE

• Triage: 48yoM, EMS report pt fell, woke up on the floor and unable to recall incident, febrile 40.2, tachycardic 115, rapid breathing.
• GCS 15, BP 115/76, HR 115, RR 28, 96% on 4L, T40.2, AC 22
• Weight: approx. 650lb (294 kg), height 5’6 (167cm)

OBJECTIVES

• By the end of this talk, you will be able to:
  • Discuss the challenges of managing morbidly obese patients in the ER
  • List possible difficulties in airway management of the morbidly obese patient
  • Understand the limits of different imaging modalities for obese patients
  • Be aware of drug dosing differences in obese vs non-obese patients
BACK TO THE CASE

• 12:40: via EMS x 3 to acute bed
• Tachypneic – 2-3 word sentences
• 12:50: bariatric bed arrives
• RNs + EMS can’t transfer patient – fire dept notified
• 13:15 – transferred by 4 firemen + 2 EMS + 4 RNs + 1 MD
HPI

• Down x ?2-10h
• +: SOB, cough, fever x ?hours, abdo pain, nausea, bilat leg pain

PHYSICAL EXAM – (+)

• Resp: bibas crackles
• Abdo: tender everywhere
• Ext: deep ulcers to both feet, erythematous, warm, weepy BILAT legs to scrotum
• Scrotal exam – mildly tender on palp, erythema, no gangrene
INVESTIGATIONS

• WBC 28, NEUT 25
• CR 132 (baseline 80s)
• TROP 208
• CK 9010 → 25000
• LACTATE 8.4

RESUSCITATION

• Presumed source?
  • Skin, Resp, GU, Abdo
• Broad spec Abx and IVF started
  • Ceftriaxone 2g
  • Vanco 2g → 4g
• RT and ICU called
  • In preparation for difficult airway
RESUSCITATION – FOLEY TROUBLES

• MD unable to locate penile-urethral meatus… urology called…

• Urology team (jr, sr, staff) + 3 RNs + 45 min + flex cystoscopy = 1 successful foley

• “The foley should not be attempted by anyone but the Urology service… we should be informed prior to the removal of the catheter”

IMAGING
OUTCOME

• Admitted to ICU
• Dx: sepsis secondary to scrotal cellulitis, MRSA bacteremia
• Admitted x 3 months, and transferred to rehab
• Re-admitted x 2 for sepsis 2o cellulitis

ANALYSIS

• 3% Canadians considered morbidly obese, BMI>40
• High risk for DM, HTN, CAD, PVD, OSA, PE, depression
• Higher morbidity and mortality vs non-obese
PEARL 1: HAVE THE RIGHT BED AND PEOPLE FOR PATIENT TRANSFER

• Offload delay (35min from EMS to our bariatric bed)
  • Bariatric bed = 750lb
  • Call for help – firefighters

PEARL 2: QUESTION THE VITALS

• BP inaccurate
  • ?falsely reassured. Cuff tends to OVERestimate BP
  • Use largest cuff available
  • Consider early art line
PEARL 3: DON’T TAKE VASCULAR ACCESS FOR GRANTED

• Increased depth needed for IV
• BP cuff recommended over venous tourniquet
• Consider US guided P-IVs
• If no P-IV, go IO
• Central lines not recommended

PEARL 4: DRUG DOSING IS CONFUSING

• Lipophilic drugs = total body weight
• Hydrophilic drugs = ideal body weight
• BUT – there are exceptions
  • Ex. Propofol (IBW), opioids (IBW-TBW), succinylcholine (TBW)
• Antibiotics = it depends (vanco – TBW, beta-lactam – IBW)
• IM does not mean intra-adipose → use longer needles
PEARL 5: KNOW THE LIMITS OF IMAGING

- **XR** – max wt 480lbs
  - Max plate weight = 450lb prone
- **CT** - Limits:
  - Toshiba 64 Slice CT - 450lbs, 72cm gantry size
  - Toshiba Prime/Vision CT’s - 650lbs, 78cm gantry size
- **US** – no wt limit
  - Limited by achieving adequate depth and extremity edema
- **MRI** – max wt 440lbs

PEARL 6: OBESE PATIENTS HAVE DIFFICULT AIRWAYS

- Difficult BMV
- ↓↑TLC and FRC → ↓ reserve
- ↑↑ airway resistance/pressures → ↑ WOB, shorter time to desat
- ↑↑ incidence of hypoxemia and hypercapnia
- ↑↑ risk of aspiration
- Consider: 4-handed BMV, 100% FiO2, NIPPV, reverse trendelenberg
PEARL 7: CONSIDER AWAKE INTUBATION

- Difficult airway and BMV
  - Avoid can’t oxygenate/can’t ventilate
- Video laryngoscopy
- Get help: ICU, ENT, Anesthesia
- Supraglottic airway as rescue
PEARL 8: THE PATIENT IS A PERSON

• The patient has eyes and ears
  • Verbal and non-verbal communication with and around the patient
• Think of patient confidentiality and comfort
  • Very difficult transfer requiring many people – curtain not closed
  • Gown size – provide 2-4 gowns to cover patient during transfer

CONCLUSION

• Care for morbidly obese challenging
• Remember pearls
• Get help early!
REFERENCES

• Emergency Medicine Cases: Obesity Emergency Management
• Miller, J. Imaging Obese Patients. Massachusetts General Hospital Radiology Rounds. 2011; 9(8).
• UpToDate

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