



METABOLIC STRESS AND TRAUMA: A GUNSHOT WOUND

Alison Rudy

Juan Perez

- Age: 29
- Male
- Convenience store clerk, 11 pm-7 am
- Hispanic
- 5'10"
- 225 lbs
- **BMI: 32.4, obese**
- Drinks "several beers" every night

Reason for Admission

- **Gunshot wound to the abdomen**
- **Vomiting blood**
- Severe back and “stomach pain”
- **Not able to answer many questions**
- No allergies
- No chronic conditions

Physical Examination

- **Ventilator**
- Temperature: **102.6°F**
- BP 115/65 mm Hg
- HR 135 bpm/normal
- **NG tube** placed
- **Edema** in lower extremities



Abdominal Examination

- Abdominal distension
- Wound VAC (Vacuum Assisted Closure) in place
- Three tubes draining peritoneal fluid
- Hypoactive BS (Bowel Sounds)

Surgery Day 1

- Exploratory **laparotomy**
- **Gastric repair**
- **Liver hemorrhage control**
- Proximal **jejunum resection**
- **GI tract left in discontinuity**
- Tubes placed to **drain fluid** from peritoneal cavity



Nutrition Consultation Day 1

- **TPN**
- Dextrose 300g/day
- Amino acids 170 g/day
- **High nutritional risk**
 - ▣ Ventilation
 - ▣ Wounds
 - ▣ Fluid/electrolyte losses
 - ▣ Altered GI function
 - ▣ Parenteral nutrition support

Medications

- Morphine
- Lorazepam
- Propofol at 35 mL/hr (maintenance of anesthesia)
- Esomeprazole
- Meropenem
- vancomycin

Surgery Day 2

- Reestablished **bowel continuity**
- **Abdominal VAC** placed



Surgery Day 3

- Detection of **anastomotic leak**
- **Gastrojejunostomy tube** inserted
- Jejunal limb shorted to provide antegrade intraluminal drainage
- Retrograde jejunostomy tube for drainage

Day 4

- Metabolic cart measurement
 - REE=3657 kcal/day
- Blood glucose 107-185
 - Insulin drip protocol
- TPN--dextrose increased to 350 g, amino acids increased to 180 g

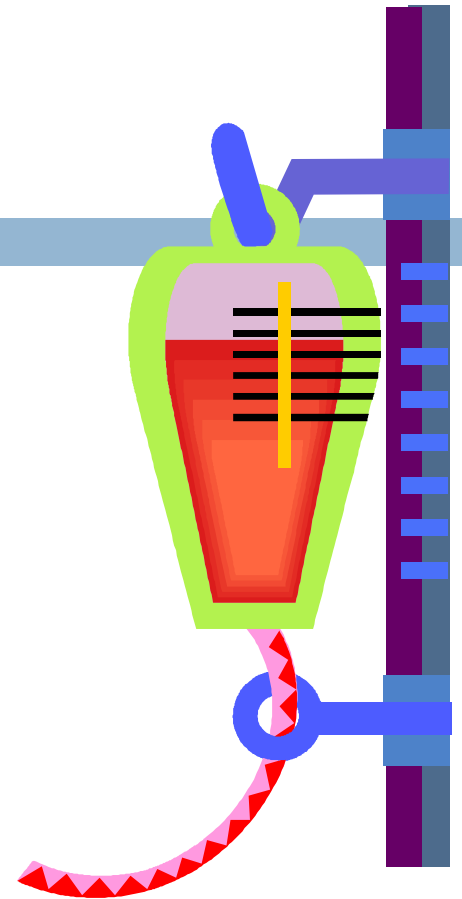
Continued Care

- Day 7
 - Abdominal washout
 - **J-tube placement**
 - VAC change
- Day 10
 - Propofol discontinued
 - Second metabolic cart:
 - **REE=3765 kcal**
 - IV lipids added (250 mL 3x/week)



Enteral Support

- Day 11:
 - **Enteral support initiated**
 - **Crucial 1.5 kcal/mL**
 - 10 ml/hr
- Day 12:
 - 15 mL/hr
- Day 13:
 - 20 mL/hr
 - Anastomotic leak
 - Decreased to **15 mL/hr** for remainder of stay



References

- www3.uakron.edu/.../Parenteral%20Nutrition%20Calculations.ppt
- http://www.clinicalwindow.net/cw_issue_15_article_3.htm
- <http://jn.nutrition.org/cgi/reprint/6/1/55.pdf>
- <http://www.stbarnabashospital.org/training/surgery/Lectures/Nutritional%20Support%20of%20the%20Trauma%20Patient.ppt>
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