C-35 My Patient Has Cirrhosis, and You Want to Do What? Anesthetic Considerations for Routine Surgery in a Patient With Liver Disease

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Objective

After completion of this session, the participant will be able to:

- Formulate a safe anesthetic plan for a patient with cirrhosis undergoing routine surgery.

Case Stem Question

1. 48-year-old female presents for laparoscopic cholecystectomy. She has a history of morbid obesity, type 2 diabetes, cholelithiasis, and NASH cirrhosis. Preoperative ultrasound reveals cholelithiasis, echogenic liver, presence of ascites.

2. Notable labs include hematocrit 34%, platelets 70,000/uL, bilirubin 1.6 mg/dL, PT 15 sec, PTT 43 sec, INR 1.9, creatinine 1.3 mg/dL, sodium 133 mmol/L, potassium 4.3 mmol/L, glucose 94 mg/dL, albumin 2.8 g/dL, ALT 128 IU/L, and AST 85 IU/L.

3. The patient states that she has been increasingly fatigued and is occasionally short of breath.

4. ECG reveals normal sinus rhythm with prolonged QTc. TTE shows EF 55%, LV diastolic dysfunction, otherwise unremarkable. A stress test is negative for inducible ischemia.

5. The surgeon states that he would like you to correct the coagulopathy with FFP and platelet transfusions prior to the OR.

6 . The patient arrives to the OR with a 20G IV. Standard ASA monitors are placed and vital signs are normal.

7. The patient is intubated. At the start of the procedure, the surgeon performs a paracentesis and immediately drains 5 liters of ascites. The patient becomes hypotensive.

8. The patient’s blood pressure normalizes after your intervention. The surgeon mentions significant intraabdominal adhesions and varices. You notice 500mL of blood in the suction cannister followed by hypotension.

9.The surgeons attempt to get hemostasis however the liver edge continues to bleed. An ABG shows a hematocrit of 20%.

10. The surgeons are eventually able to obtain adequate hemostasis and the patient is

successfully emerged and extubated. The surgical resident wants to discharge the patient home as it was “just a cholecystectomy.”

Guiding Questions for Discussion

1.1. What is NASH cirrhosis? What is the difference between compensated and decompensated cirrhosis?

2.1. What are the Model for End Stage Liver Disease (MELD/MELD-Na/MELD 3.0) and Child-Turcotte-Pugh scores?
2.2. The patient’s MELD-Na is 21. What is the patient’s mortality risk and how does it differ with different ranges of MELD/MELD-Na score?

3.1 Beyond your typical differential for dyspnea, what other diagnoses should be considered in the context of cirrhosis? Do you need additional testing?

4.1 What is the significance of diastolic dysfunction and prolonged QTc in this patient?
4.2. What concerns would you have if the right ventricular systolic pressure was 50 mmHg on the preoperative TTE?

5.1 Is FFP or platelet administration indicated at this time? How much will you give?
5.2 Are there any other tests available to evaluate the patient’s coagulopathy?
5.3 Would you request blood products to be available? If so, what would you order?

6.1 What is your plan for induction of anesthesia? Would you perform a rapid sequence induction? How would you alter the dosing of your induction medications for this patient if at all?
6.2 How are the pharmacokinetics of intravenous and volatile anesthetics altered in cirrhotic patients?
6.3 Would you place additional IV access and/or monitors?

7.1 How will you manage the patient’s hypotension?

8.1How will you manage the patient’s hypotension now?
8.2 How will you determine the need for additional monitors? For blood transfusion?

9.1 Will you transfuse? If so, what products will you give and how much?
9.2 Is there anything you would ask the surgeons to do?

10.1 Do you agree? Where do you want this patient to be dispositioned?

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