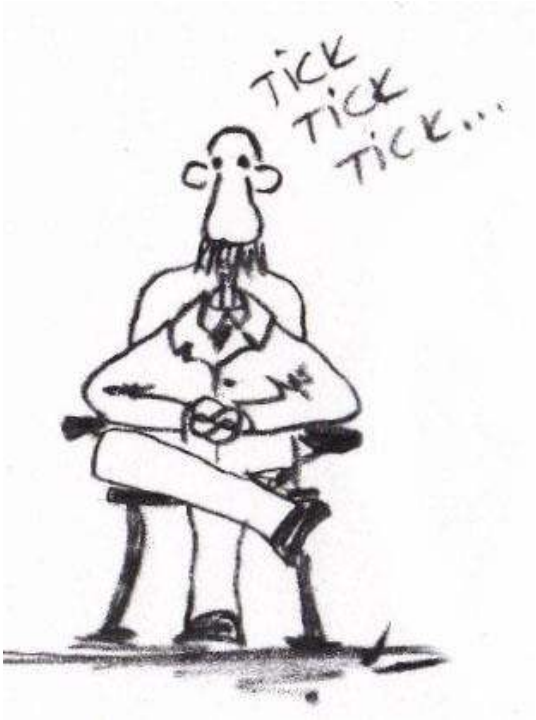


DR. WITHERSPOON
CHIEF OF STAFF

by J. M. MacDavid M.D.

Time Bomb

A gentleman was referred to a surgeon for treatment of a painful hernia. His past medical history included emphysema, heart disease, hepatitis C, and diabetes. Six months prior to this evaluation, he had been hospitalized for a bout of congestive heart failure from which he recovered uneventfully.

The doctor recommended surgery and the patient agreed. This would be done in an outpatient surgery center. Preoperative labs revealed a high platelet count and moderately abnormal liver enzymes.

On the day of surgery, the patient coughed up a large blood clot in the holding area. The nurse informed the doctor who discussed it with the patient. The gentleman told the doctor it was just a nosebleed and they both agreed to go ahead with the surgery. Shortly thereafter, he coughed up another large blood clot. Again, the nurse notified the doctor and, again, he told the doctor it was just a nosebleed and that he felt fine. After some discussion, doctor and patient again agreed to go ahead with the operation.

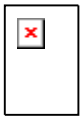
The case took about a half an hour during which they had difficulty keeping his blood pressure up. Later, in the recovery room, his blood pressure crashed. Massive infusions could not keep it up. They called 911 and had him rushed to the nearest hospital.

Assuming he was hemorrhaging from the operative site, the hospital surgeons took him straight to the OR to explore it. They found a large amount of blood which had disrupted the hernia repair, cleaned it up, cauterized the site and re-did the repair.

Later, in the ICU, he vomited a large amount of blood then passed more blood through his stool. The operative site again rapidly expanded from uncontrolled bleeding. They

infused red cells, cryoprecipitate, and plasma to stop the hemorrhaging but to no avail. Sadly, he died.

Later, the surgeon learned from his consultants that, six months previously, the patient was not hospitalized for congestive heart failure, as the doctor had been led to believe. In fact, he had been hospitalized for liver cirrhosis with ascites complicated by bleeding from esophageal varices.



Dr. Witherspoon Says:

A sad, sad, story but, for Pete's sake, a cirrhotic with a history of bleeding varices coughing up blood clots? In the holding area? And we *operate on him?!*

This first-class medical nightmare involved one of the most dangerous conditions in all of medicine, advanced liver cirrhosis.

As we all know, the liver produces myriads of factors that influence both clot formation and lysis. The fascinating balance that maintains the normal state is disrupted in patients with liver disease in ways I don't believe anybody completely understands.

Not only are clotting factors diminished, so are those that assist clot lysis, such as factor C. Cirrhotics are famous for spectacular bleeding, such as occurred in this case, yet are known to be hypercoagulable and can clot too easily.

There are varying degrees of liver failure and when it gets to the point vessels in the esophagus and stomach burst from collateral flow (ruptured varices) because blood cannot get through the diseased liver (portal hypertension), the patient unquestionably has advanced disease. Variceal bleeds can be massive and exsanguinary, profoundly dangerous. A history of bleeding varices from cirrhosis is a huge red flag. It means the patient is at a high risk for complications when undergoing surgery. Think of it as a ticking time bomb, just waiting to go off if not handled properly.

Predicting bleeding potential in cirrhotics is still an imperfect science even in this day and age. The almighty PT/INR is not helpful, nor the PTT. Exotic new tests like Rotational Thromboelastometry (ROTEM) are promising but remain debatable. One hematologist advised me the best predictor of bleeding potential is the *history.* If they bleed easily or have had problems with it in the past, watch out!

Lessons learned?

1.The history. For reasons unknown to us, the diagnosis of his previous hospitalization, as understood by the operating surgeon, was tragically incorrect. Liver failure with bleeding varices has nothing to do with congestive heart failure. Had the surgeon been aware of his history of bleeding varices, he most certainly would have called an ambulance as soon as the patient coughed up that ominous first "large blood clot." It is the preliminary indication that a deadly cycle of uncontrolled bleeding from varices may be underway.

In my humble opinion, these patients should not have elective procedures in outpatient surgery centers due to limited/absent resources. If surgery is done, clotting products should be available (platelets, cryo, etc.) And get a MELD (Model for End-stage Liver Disease) score, which gives a level of severity of liver disease. At the highest level, all

but the most urgent procedures are contraindicated. Along with an accurate history goes a responsible pre-operative workup.

2. The patient. I can't believe he nearly died from bleeding esophageal varices and somehow came away thinking he only had a bout of congestive heart failure. That just might be the worst case of a patient's misconception about his illness I've ever read about. *Doctors educate your patients!* If nothing else, a cirrhotic with a history of bleeding esophageal varices must learn that coughing up blood is a medical emergency and mandates a call for an ambulance. And he thought it was just a nosebleed! That – is just unfathomable.

3. The doctor. I discussed this case with a couple of anesthesiologists and the opinion is, few, if any, would agree to proceed with an elective case on a patient who was coughing up large blood clots, no matter what's in the history. If nothing else, it's bleeding from an unknown source and presents an unacceptable risk. Nobody wants to be struggling with an unsecured airway with a patient bleeding anywhere near the oropharynx. That is a nightmare waiting to happen.

For Pete's sake, don't be taking folks back to the operating room for electives cases who just coughed up *large blood clots* in the holding area. Cancel the case! Get a work-up and find out what's going on. You just might have something ominous on your hands, like life-threatening bleeding esophageal varices, of all things.

Judgement, folks. Hardest thing to teach.

www.docwitherspoon.org