Delayed Diagnosis of Post-operative Complication

A 45-year-old man died 16 hours after undergoing elective abdominal surgery.

CASE STUDY

Key Lessons

- Communication delays can be averted when expectations are clearly set.
- When dealing with new, unusual, or complex situations, physicians, whether attendings, fellows or residents, should seek consultation from others with more expertise.
- Effective documentation includes notes supporting the provider's clinical rationale for diagnosis and treatment.

Clinical Sequence

May 2000 A 45-year-old obese male, with a history of ulcerative colitis and hypertension was admitted via the Emergency Department with complaints of epigastric/abdominal pain and nausea/vomiting. Ultrasound revealed a dilated common bile duct (CBD) and mild intrahepatic ductal dilatation. An abdominal CT showed a 2.8mm cystic lesion on his pancreatic head. After undergoing an endoscopic retrograde cholangiopancreatography (ERCP), the patient's symptoms subsided and he was discharged home after a three-day hospital stay.

Ten days later, the patient was readmitted for recurrent abdominal pain, this time associated with anorexia and fever (104˚F). ERCP revealed several CBD stones, which were removed. However, an 8mm stone was noted above a smooth stricture which could not be removed. A 10F stent was placed, resulting in good bile flow, and the patient was able to be discharged the following day with a plan to follow-up with a surgeon.

June 2000 The surgeon recommended that the patient undergo a Whipple procedure (removal of the head of the pancreas, duodenum, and gallbladder). A long conversation regarding the reasons for this procedure, the potential complications, and alternatives ensued. The patient signed the informed consent and the surgery was scheduled.

On the scheduled day, the operating room (OR) was running late and the patient's 10:00 a.m. surgery was delayed until 4:00 p.m., concluding near 10:00 p.m. The surgery was documented as "uneventful," with an estimated blood loss (EBL) of 3.5–4.0 liters. With the patient in "stable" condition the attending surgeon left the hospital for the evening

- *10:30 p.m.* the patient was admitted to the surgical intensive care unit (SICU) with a BP 155/99, HR 120. Because he appeared to be "fighting" or breathing over the ventilator, he was given a sedative (Propofol).
- *11:00 p.m.–midnight* the patient had both a central line and central venous pressure (CVP) line placed.
- *12:30 a.m.* BP ranged from 96/69 to 74/54, HR was 110 and the patient's abdomen was noted to be distended with slightly more than 200cc bright red blood in the three Jackson Pratt drains. He was placed in Trendelenberg, given neosynephrine, one unit of packed red blood cells (PRBCs), and one amp of CaCl. Lab results at this time included Hct 37.2, PT 15.2, INR 1.5, and PTT 36.9.
- *12:40 a.m.* BP 156/103, HR 122; the neosynephrine was turned off and the patient received one unit PRBCs.
- *1:00 a.m.* BP 141/103, HR 114; Propofol increased.
- *2:00 a.m.* BP 109/80, HR 114; one unit FFP given, Propofol decreased then stopped secondary to his BP continuing to drop to 89/– and neosynephrine begun again.
- *2:30 a.m.* BP 137/107, bolus of Propofol given.
- *2:35 a.m.* BP 41/23, HR 120, no pulse, code blue initiated, patient successfully resuscitated.
- *3:00 a.m.* arterial blood gas revealed pH 7.05 (7.35-7.45), pCO_2 37 (31-45), pO_2 428 (75-101) and total CO_2 11 (21–30); Hct dropped to 24. A chest tube was inserted and bright red blood was noted; CT revealed the tube had been placed subdiaphragmatic rather than in the chest cavity.

Of note: during the time the patient was admitted to the SICU up to the time he coded, the resident did not document in the patient's medical record; the only progress notes present were that of the nurse. The resident did not contact the chief resident or the attending surgeon regarding the changes in the patient's medical status.

- *By 3:30 a.m.* the patient was brought back to the OR for an exploratory laparotomy, ligation of bleeding vessels, and abdominal packing. EBL was approximately 4500ml, requiring a large volume resuscitation (17 units PRBCs, six units FFP, six units platelets, IVF). Findings from the surgery included a capsular tear in the dome of the liver (not bleeding), several small bleeders noted in the mesentery, as well as bleeding from the porta-hepatis, a branch of the gastroduodenal artery, side branches of the portal vein, and from the side of the hepatic artery.
- *6:30 a.m.–2:00 p.m.* the patient returned to the SICU in critical condition. Over the course of the next several hours, he developed acute respiratory distress syndrome and became profoundly acidotic and hypothermic. At approximately 2:00 p.m., he coded and could not be resuscitated.

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Post-operative Complication (cont'd)

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Allegation

The patient's family filed suit alleging that 1) the surgery performed was unnecessary, 2) the patient was wrongfully administered the drug Propofol, causing him to experience profound hypotension, and 3) the patient's post-operative abdominal bleeding was not diagnosed in time to prevent his death.

Disposition

The case was settled in the high range (>$500,000).

Analysis

From the time the patient was admitted to the SICU and was being followed by the resident, his medical condition progressively deteriorated—resulting in an electromechanical defect and code. In retrospect, it appears that the resident never fully appreciated the complexity/severity of what was occurring.

Attending physicians should set clear expectations for residents as to 1) what signs and symptoms they should be concerned about given a patient's particular circumstances, 2) when they **need** to be notified of a change in a patient's medical condition (e.g., hemodynamic instability, new arrhythmias, wound complications, or unplanned blood transfusion) and 3) what they expect when a resident is unsure of how to proceed. (e.g., development of a concern/situation that is more complicated than he/she can manage).

The resident chose not to contact the chief resident and/or the attending surgeon.

When dealing with new, unusual, or complex situations, physicians, whether attendings, fellows or residents, should seek consultation from others with more expertise or just a different perspective. The resident in this case should have at least notified the chief resident regarding the patient's variable BP, distended abdomen and laboratory results (abnormal coagulation results). He also could have availed himself of additional expertise by consulting an anesthesiologist, an internist, a critical care physician, or a pharmacist.

Documentation by the resident was notably absent in the medical record. Without any notes, the resident's thought process is unknowable: Did he consider the patient was suffering from a surgical complication, such as an intra-abdominal bleed? Did he consider any other underlying causes for the patient's variable condition?

Clear, concise documentation regarding a patient's current medical condition, potential differential diagnoses, and plan of care are important elements of good documentation along with the rationale for proceeding as prescribed. This need not be lengthy, but should indicate alternatives considered, and the medical judgment and clinical basis for those decisions. ■