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Case No. 10 - Post Cardiac Bypass Tamponade Producing Cardiac Arrest and Brain Damage

New York Law School

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POST CARDIAC BYPASS TAMPONADE PRODUCING CARDIAC ARREST AND BRAIN DAMAGE

Mr. Owen, age 60, was admitted to the hospital on November 15, 2004 for a cardiac catheterization. There was a past history of a prior myocardial infarct, placement of stents and a positive stress test.

The cardiologist, Dr. Leon, recommended bypass surgery for severe re-stenosis of one of the prior stents, for triple vessel disease and discontinued plavix anticipating surgery.

The next day on November 16, 2004, Dr. Mend, a cardio-vascular surgeon, recommended bypass grafting.

Surgery was scheduled the next day on November 17, 2004. Dr. Mend and Dr. Leon were aware that there was an increased risk of bleeding because the patient had not been off plavix for five days.

The bypass operation performed on November 17 of 2004 went "smoothly" as the patient was revascularized. Mr. Owen was weaned off of bypass relatively easily and transferred to the ICU at 1:50 p.m. in stable condition. His heart rate was 99, his blood pressure 114/55 and Levophed drip at 0.05 per minute was in place to support blood pressure.

Sequentially, over time, Mr. Owen's blood pressure began to fall (e.g., 85/46 at 2:15 p.m.), as a result his blood pressure was supported with incrementally increasing doses of Levophed.

The nurse practitioner at the bedside was following a standard hypovolemic protocol to replace fluid volume and blood loss.

It was at 4:40 p.m. that a cardiac arrest code was called. At 4:42 p.m. a cardiovascular surgeon opened Mr. Owen's chest in the ICU. The record reflects that the cardiac arrest was caused by tamponade. The operative note describes that the patient suffered a cardiac tamponade due to postoperative bleeding in the peri-postoperative period.

The record also describes surgically relieving the tamponade along with the use of Epinephrine, internal defibrillation and calcium chloride to reestablish a heart beat. Mr. Owen was then

taken from the ICU back to the OR at 4:55 p.m.

Mr. Owen responded to the emergency resuscitative steps and hemostasis in the chest was established. Mr. Owen was then transferred back to the ICU from the O.R. in stable condition. Unfortunately, Mr. Owen suffered multiorgan damage due to ischemia from the cardiac arrest.

Mr. Owen's total body fluid volume was estimated at around 6,000 ccs. In the ICU postoperative time interval prior to the cardiac arrest more than 3,600 ccs of fluid and blood products were infused. Fluid output in the ICU prior to the cardiac arrest of approximately 600 ccs, as measured by chest tube drainage, is documented. There was no urine output in the postoperative interval prior to the cardiac arrest.

Post cardiac arrest Mr. Owen had gained 40 pounds when weighed and chest x-rays revealed bilateral congestive changes.

Dr. Mend and Dr. Leon acknowledged that if tamponade was causing the low blood pressure that developed in the ICU, the only treatment that would work would be to reopen the patient and to surgically alleviate the tamponade pressure. The nurse practitioner at the bedside acknowledged that if the ICU low blood pressure issue was tamponade that the providers must make sure they are not treating a hypovolemia that may not even exist and ignore a tamponade that does exist.

Somewhere between 3:00 and 3:30 p.m. Dr. Leon was in to see the patient and noted that there was a low blood pressure (74/40) and an elevated heart rate (112) in spite of increasing doses of Levophed. Dr. Leon requested a stat echocardiogram to rule-out tamponade.

Dr. Leon then left the patient and neither Dr. Leon nor the nurse practitioner consulted with Dr. Mend or any other cardiovascular surgeon at that time.

The nurse practitioner acknowledged that if the problem was tamponade one would expect the pulmonary artery pressure would begin to rise and that by 4:00 p.m. the pulmonary artery pressure had shot-up and yet Mr. Owen's blood pressure had stayed low and his heart rate was much higher in spite of increasing doses of Levophed, as well as the infusion of fluids and blood products. An echocardiogram was never performed.