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Internal Medicine
Cardiology

Doc. 231

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Steven W. Albert
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Re: Irene Duplaga

Dear Mr. Albert:

As you requested, I reviewed the medical records of Irene Duplaga in detail. She was admitted on 12/11/84 for repair of retinal detwachment. During her pre-operative clearance by Dr. Bauman, she was noted on history to have an 11-pound weight loss over the past year and to have abdominal pain which she attributed to hiatal hernia. On physical examination, a systolic click was present and there was a slightly slow relaxation phase of the ankle jerk. Her EKG, pre-operatively, was completely normal and her chest x-ray was normal. The report specifically stated that the heart was not enlarged. Admission laboratory data was not remarkable. The patient had a history of taking Digoxin on an as needed basis for palpitations. She had discontinued this prior to this admission and did not have any difficulties off Lanoxin. At the time of admission, she was being treated for "nervousness" with a pill containing Perphenazine and Amitriptyline.

Given all available pre-operative history and physical examination and laboratory data, the only heart disease there is evidence of is mitral valve prolapse. This tends to be quite benign condition that is present in approximately one in five females. Her abdominal symptoms appeared to be associated with weight loss and did merit further work-up post-operatively. There was no evidence of any contraindication to eye surgery in the patient preoperatively. I must conclude that Dr. Bauman, by clearing this patient for surgery, practiced within the accepted standards of medical care.

Post-operatively, this patient had a number of problems. She was quite slow in recovering from anesthesia, and was noted to have a severe metabolic acidosis.

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Electrolytes disturbances were present including low sodium and low phosphorus, and large doses of diuretics, such as Mannitol and Diamox, were necessary to control her occular pressure. Prior to cardiac arrest, congestive heart failure and hypoxemia were not a problem. Arrhythmias during cardiac arrest included ventricular tachycardia, AV association, nodal rhythm and asystole. The patient remained hypotensive a good part of the day on 12/14/84. Hypokalemia and severe hypophospatemia were treated appropriately. Hyperglycemia was treated with Humulin Insulin, and suspected congestive heart failure was treated with IV Bumex, without good results. Chest x-ray showed congestion and early edema of both lungs. Treatment with Dopamine for both hypotension and congestive heart failure was appropriate. The possibility of pneumonia was covered with Cefoxitin from the night before. Acidosis resolved that evening. On 12/18/84, kidney function was noted to decline and pancreatic enzymes were markedly elevated, consistent with pancreatitis. Gentamicin was added to the antibiotic regimen. The white blood count continued to be elevated with some improvement on 12/17/84. Also on this date, the platelet count was noted to be low and fibrin split products were noted to be elevated with a DIC process. A Swan *Ganz* catheter was inserted on this date with pressures in the low normal range, completely inconsistent with congestive heart failure and pulmonary edema. Continued congestion on the chest x-ray and these low pressures confirmed the diagnosis of adult respiratory distress syndrome as suspected on December 15, 1984.

Kidney function started to improve on 12/18/84, as evidenced by a declining creatinine. However, on that date hypotension necessitating treatment with Dopamine and supraventricular tachycardia were present. By 12/20/84, the creatinine was back up to 4. During this period of time, elevated Gentamicin levels were noted, and the Gentamicin dose was cut initially and subsequently discontinued. It appears hypotension associated with arrhythmias are the more likely cause of the return of renal failure. The Swan ***Ganz*** catheter was discontinued on 12/22/84, and a dialysis catheter inserted. Dialysis was started on 12/24/84, and continued on an every other day basis through 12/20/84. During this period of time, a metabolic acidosis was present and white blood count gradually increased. On 12/25/84, antibiotics were held and a blood culture, urine culture and sputum culture were obtained. Antibiotics were restarted on 12/20/84 in the form of Penicillin and Cefoxitin. These antibiotics were changed to Ticarcillin and Tobramycin on 12/31/84 in response to culture results- On 12/31/84, it was decided that the patient would not be resuscitated if she arrested. In addition, dialysis and the dialysis catheter were both discontinued. In essence, at this point it was

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decided the patient would not be fully supported. With hypoxemia, acidosis and an elevated serum potassium level stopping dialysis at this point, with the families' consent, was recognition in the minds of her physician and family that there was not a reasonable chance for her survival.

In conclusion, this unfortunate patient suffered some insult in the perioperative period which eventually resulted in this patients cardiac arrest and subsequently multisystem failure. What is clear on close examination of this chart is that there is no good evidence that congestive heart failure was involved in her demise as evidenced by a clear lung exam and normal chest x-ray in the recovery room and later on normal heart pressures by Swan Ganz catheter readings in the face of a chest x-ray showing pulmonary congestion, One can speculate on the causes of a slow recovery from anesthesia, severe metabolic acidosis, cardiac arrythmias and subsequent arrest but it largely remains a mystery. Dr. Bauman reacted to multiple problems following her cardiac arrest in an appropriate manner. These problems included severe hypophosphatemia, hypokalemia, continued metabolic acidosis, hyperglycemia, cardiac arrythmais, pancreatitis, disseminated intervascular coagulation, adult respiratory distress syndrome, acute renal failure and subsequent sepsis. His treatment of all these problems following the surgery were certainly within the accepted standards of medical care. I hope this summary will be of assistance to you.

Sincerely yours.

Loren S. Kendis MD.

Loren S. Kendis, M.D.

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