Case: MD-09-[redacted] Physician: [redacted] MD

Date: August 8, 2009 Medical Consultant: [redacted] MD

1. Detailed Chronological Analysis: The complaint initiated by the Arizona Medical Board against [redacted] MD alleges that there was a failure to evaluate a patient, [redacted] with syncope and a thoracic aneurysm for an abdominal aneurysm.

The patient was a 73 year old female with a history of hypertension, hypothyroidism and depression who presented to the [redacted] Hospital emergency department on 03/16/2006 with the chief complaint of syncope. Two days prior to admission, the patient passed out as she was getting out of the shower. She does not recall the length of time that she was unconscious. She admitted to experiencing at least one similar episode previously. She also admitted to never having a medical workup for this. The patient was in Tucson, visiting from Sacramento, Ca.

According to the documented initial evaluation by the emergency department physician at [redacted] Hospital, the only pertinent physical finding was a right periorbital hematoma. Her vital signs were stable and she was in a normal sinus rhythm. The diagnostic workup showed a normal CBC and electrolyte panel but she did have an elevated d-dimer. The chest x-ray, an AP portable, showed a prominent aortic knob and calcification of same. The CT scan of the brain showed a right lateral maxillary sinus wall fracture with blood in the sinus cavity. The elevated d-dimer prompted the ordering of a CT scan of the pulmonary arteries. This examination showed no evidence of pulmonary emboli but it did demonstrate ectasia and diffuse atherosclerotic changes of the thoracic aorta as well as a discreet aneurysm measuring 4.9-5.0cm at the level of the diaphragm. A second small aneurysm was also noted in the proximal celiac artery. The scan stopped at this level and I can find no images of the rest of the abdominal aorta.

Based upon the finding of the scan, a vascular surgical consultation was obtained. Dr. [redacted] evaluated the patient. He documented a normal physical examination including the neck and abdomen. His recommendations were that the work up for syncope should continue because the patient required no acute intervention for the thoraco-proximal abdominal aortic aneurysm and added that the aneurysm should be followed frequently by a vascular surgeon in her hometown of Sacramento, Ca. The patient actually expressed a desire for this as Dr. [redacted] did offer to have the aneurysm taken care of in Tucson.

Because of the discovery of the thoraco-proximal abdominal aortic aneurysm and in spite of the normal physical examination, the entire aorta should have been imaged radiographically or sonographically.

The patient remained stable throughout the subsequent hospitalization and was found to have witnessed and well-documented episodes of paroxysmal atrial fibrillation with a rapid ventricular response. This indicates a sick sinus syndrome and the most likely etiology of her syncope.

The cardiologist, Dr [redacted] determined that because of the patient's cardiac issues, she should be anticoagulated and worked up for coronary artery disease. In addition she was immediately started on anti-arrythmic medication. She did undergo a nuclear stress test which was negative for ischemia and an echocardiogram corroborated normal left ventricular function.

On his weekend rounds, Dr [redacted] ordered a carotid duplex scan on 3/18/2006 which showed no hemodynamically significant extracranial carotid disease.

The patient was discharged from [redacted] Hospital on 3/19/2006 on warfarin, sotalol, vytorin, and keflex. She was to be followed by [redacted] as an outpatient. She was in a normal sinus rhythm at the time of her discharge.

On 3/21/2006, two days following her discharge from [redacted] Hospital, she presented to the [redacted] Medical Center complaining of a two-day history of right lower quadrant pain. The pain started in her right lower quadrant and groin on the day prior to admission with progressive worsening. The pain was gradual in onset and radiated around to her lower back on the same side. This symptom complex included nausea and vomiting. During her transport to the hospital by private vehicle, she had a brief episode of non-responsiveness associated with bladder and bowel incontinence.

Upon presentation to the emergency department her BP was 124/67 with a regular pulse of 54 beats per minute and she was fully awake and oriented. Her physical examination was remarkable for mild right lower quadrant and peri-umbilical tenderness. There was no rebound tenderness or guarding noted. Distal lower extremity pulses were not documented in the record. The hemoglobin concentration was 11.2gm/dl and hematocrit 31.9% as compared to 15.4 and 45.2% on 3/17/2006.

According to the emergency department physician, an acute aortic dissection was high on the differential diagnosis list. Because of this, a CT scan with contrast of the abdomen was ordered stat. It was obvious on this examination that the patient had a ruptured infrarenal abdominal aortic aneurysm measuring greater than 8 cm in maximal diameter. The patient was taken to the operating theater immediately.

Intraoperatively, the patient was found to have a freely ruptured 8.3 cm bilobed infrarenal abdominal aortic aneurysm with a large amount of blood in the right retroperitoneal space and free blood in the peritoneal cavity.

An attempt to repair same was undertaken but the patient expired on the operating table. She essentially had uncontrollable hemorrhage apparently from a lacerated left renal/gonadal vein complex, most likely iatrogenic occurring during the haste in attempting to control the aorta proximal to the ruptured area.

2. Proposed Standard of Care: The standard of care in a 73 year old patient with a history of hypertension, and a newly discovered asymptomatic 4.9-5.0 cm aortic aneurysm at the level of the diaphragm and celiac artery involvement, is to evaluate the entire abdominal aorta to rule out a significant infrarenal component. Vascular surgeons are fully aware the greater than 90% of Aortic

Aneurysms are located in the infrarenal aorta. The dearth or absence of symptoms referable directly to the aneurysm does not preclude the evaluation of the entire aorta.

I conclude, therefore, that the standard of care was not met in this case.

3. Deviation From The Standard of Care: Failure to image the entire abdominal aorta in the known presence of thoraco-proximal abdominal aortic aneurysm.

4. Actual Harm Identified: The patient's demise from a very large ruptured infrarenal abdominal aortic aneurysm which had not been detected due to lack of an appropriate index of suspicion and subsequent failure to have the abdominal aorta imaged.

5. Potential Harm Identified: The potential harm was the failure to detect this very large infrarenal abdominal aortic aneurysm predisposing it to rupture.

6. Aggravating Factors: There are no aggravating factors which would indicate egregious behavior.

7. Mitigating Factors: The focus of this patient's cause for hospitalization was the syncopal episode which she experienced. I am still unsure nor am I able to glean any information as to why the very large infrarenal abdominal aortic aneurysm was not palpable by several different examiners in a patient with a BMI of 24.9. Also, I do not see documentation of any examiner placing a stethoscope on the patient's abdomen to auscultate for bruits. In his response letter to the Board, Dr [redacted] states that he examined the patient's abdomen but his progress notes do not reflect this. If the failure to detect the infrarenal abdominal aortic aneurysm has any mitigating factors, it is the focus on the patient's workup for the problem at hand and attributing the thoraco-proximal abdominal aortic aneurysm to being an asymptomatic incidental finding on a pulmonary artery scan. However, the index of suspicion for additional involvement of the aorta distally should have been much higher.

8. Consultant's Summary: Based upon my knowledge and experience as a Cardiovascular and Thoracic surgeon for the past 23 years, I conclude that the patient, Ms. [redacted] was not completely worked up in order to exclude an infrarenal abdominal aortic aneurysm.

Over 90% of degenerative or atherosclerotic aneurysms develop in the infrarenal segment of the aorta. Knowing that the patient had significant ectasia of the ascending, tranverse and descending thoracic aorta along with significant eccentric calcification of the aortic wall, in addition to the known 4.9-5.0 cm rather discreet aneurysm of the distal thoracic-proximal abdominal aorta and celiac artery, is an indication for imaging the rest of the intraabdominal aorta regardless of the patient's symptoms. The vast majority of infrarenal aneurysms are asymptomatic.

Another fact that I have difficulty reconciling is the lack of physical findings on the multiple abdominal examinations which the patient underwent by several different physicians. My reason for doubt stems from the fact that the patient's aneurysm measured 8.3cm in maximal diameter and her BMI was 24.9. An aneurysm of this size does not grow to this magnitude in a short period of time. Also, when Dr. [redacted] examined the patient's abdomen as he states in his response letter to the board, he should have stated so in his written progress notes.

Had the abdominal aorta been imaged in its entirety, the very large infrarenal abdominal aortic aneurysm would have been discovered and the patient would have undergone the appropriate procedure under quite different circumstances and with a markedly reduced risk. In other words, she would have not been discharged from [redacted] Hospital because an infrarenal abdominal aortic aneurysm that large is an urgent, bordering on emergent indication for repair. There are not many vascular surgeons which would disagree with this statement.

In conclusion, this is a most unfortunate case and although any retrospective review such as this is imperfect because it is difficult to determine the involved practioner's state of mind, I do believe strongly that the primary focus was on the patient's syncope. This was totally and unequivocally appropriate and wonderfully worked up. However, when the 4.9cm aortic aneurysm was discovered at the level of the diaphragm along with the celiac artery involvement, the rest of the aorta should have been imaged. Had this been done there is a high probability that the outcome would have been much more favorable. I may add, in no uncertain terms, that the radiologist reading and/or performing the pulmonary artery CT scan should have continued imaging the rest of the aorta at that juncture. I do not think he/she needed an order or permission for same.

I have to state that the Board's allegation of "failure to evaluate a patient with syncope and thoracic aneurysm for abdominal aortic aneurysm" has merit and the care which this patient received on this point fell below the standard of care.

9. Records Reviewed:

1. Communication from [redacted] 7/15/2009
2. Initial complaint letter 7/15/2009
3. Licensee response 7/15/2009
4. [redacted] Hospital Records 7/15/2009
5. [redacted] Medical Center Records 7/15/2009
6. Image CD's from [redacted] Hospital 7/22/2009
7. Image CD from [redacted] Center 8/8/2009

Respectfully submitted,

[redacted] MD