Case 2: A catheter gone too far

Patient was a 38 yo who presented to Community Hospital via ambulance on May 5, 2023 at 8:53pm with a GI bleed. On admission to the ER she was oriented and following commands, her vital signs were unremarkable. At 9:16pm Dr. ER Resident noted GI bleeding and a history of hypothyroidism. She had one large episode of hematemesis prior to her arrival and had presented to Community Hospital the week prior for the same problem. Pt was pale, weak, and lightheaded. Medications at home included levothyroxine and omeprazole. Abdominal exam was unremarkable as was respiratory and cardiac evaluation. Rectal exam showed black tarry stool. Initial hematocrit was 15.

A Gastroenterology consult and an ICU consult were called and patient was started on an omeprazole drip. At 10:30pm packed red cells were infusing via a left antecubital line. Her blood pressure and pulse were stable.

Per Dr. ER Resident's documentation at 9:38pm, Dr. ER Attending had asked for a central line catheter placement. At 11:39pm Dr. ER Resident documented that a right internal jugular line was placed. At 12:07am Dr. ED Attending documented a Procedure Supervision of central line placement, however, on a subsequent interview, Dr. ED Attending indicated they were not actually present during its insertion as they had been called away. An EM PGY-2 resident and nurse performed the procedure. The EM resident on interview did not note any difficulty and felt they saw venous blood during the procedure. An US was used.

At 12:52am a temperature of 100.8°F was noted and Tylenol was given. It appears patient was to receive a second unit but had syncope and it was not administered – the nurse and resident thought the patient was having a reaction. A chest x-ray performed at 1:41am documented a right-sided catheter with the distal tip overlying the brachiocephalic vein. The chest xray was read by a PGY-3 radiology resident on night rotation. There was no pneumothorax and blood was successfully drawn. The lines were also flushed.

The patient was transferred to the MICU at 2:32am. There was no mental status documentation by either the nurse or the physician from the time of catheter placement until transfer to the MICU. On admission to the MICU vital signs were stable and the patient was anxious.

Dr. MICU Attending wrote an admission H&P at 4:15am noting the patient had received blood, and midazolam (none documented except for Versed in the ER) and unfortunately, this documentation seems to be carried through the record from the copy and paste EMR function. At 4:58am a MICU resident noted the patient was lethargic, had slurred speech and required stimulus which consisted of shaking and shouting. At 6am diphenhydramine was given prior to the initiation of the next unit of packed cells as it was thought that she might have had a reaction in the ER.

At 8 am Dr. PGY-4 Gastroenterology Consult noted that it was hard to arouse the patient with shouting and a sternal rub. The patient had melena on rectal exam. The plan was to take her for an

EGD once the sedative wore off, and the patient could consent. A 7:45am note reveals she had no focal deficits but also that she was lethargic and grimaced with a sternal rub, lethargy attributed to benzodiazepines and diphenhydramine.

There is documentation of a brief episode of agitation and anxiety at 8:10am. At 1pm she was noted to be more somnolent. At 3pm a CT scan showed non-hemorrhagic subacute ischemia involving the right middle cerebral artery territory and findings concerning for non-hemorrhagic subacute ischemia involving the right cerebellar hemisphere. Also noted was a radiopaque catheter coursing through the right common carotid artery and into the distal right innominate artery.

A Stroke Code was called, and a Neurology consult confirmed the findings of an altered mental status and left hemiplegia. A stat CT and CT angio was recommended (also noted that it had been done). The catheter was subsequently removed in the OR at 10:30pm by Dr. V. Surgeon who indicated in his operative report that the catheter had entered through and through the internal jugular and into the common carotid artery. There were two holes in the internal jugular vein which were repaired. The puncture at the common carotid artery was also closed.

A follow up CT scan performed two days later revealed findings compatible with evolving subacute ischemia involving the right middle cerebral artery territory as well as the right cerebellar hemisphere.

The remainder of the hospitalization was significant for DVT of the left calf, aspiration pneumonia, aphasia, dysphagia, vocal cord paralysis, and placement of a PEG tube. On June10th patient was discharged to a rehabilitation hospital with a left facial droop, slurred speech, and asymmetric pupils. All extremities remained affected.

Tasks:

1. Create a fishbone diagram
2. Write 1-2 root cause statements, using the 5 rules of causation
3. Develop 2-3 actions.