PATIENT SAFETY RESOURCES

MISINTERPRETATION OF CT SCAN DELAYS STROKE DIAGNOSIS

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DESCRIPTION

A misinterpretation of a stat CT scan result and a lack of communication between providers delays an unresponsive woman's stroke diagnosis.

CLINICAL EVENTS

A 54-year-old female was brought to the emergency department (ED) in the late afternoon after being found unresponsive at work. The ED provider noted that the patient presented as lethargic, stuporous, and aphasic. A stat CT scan was performed, which the radiologist read as negative for a stroke. In the evening, the family asked for a neurology consult as they thought the patient had had a stroke. They were told the CT scan was negative for a stroke and that a neurologist would see the patient in the morning because no one was available after hours.

Later that night, the ED provider documented that the patient was presenting with a left-sided droop, weakness, and neglect. The patient then had a Computed Tomography Angiography (CTA) scan, which a radiologist read but did not record the results. The radiologist reportedly informed the tech the CTA scan was sub-optimal and not diagnostic, but they did not mention any findings or follow up on the results with any providers.

The patient was admitted to the floor the next morning. The patient's care was transitioned to a hospitalist who noted that the patient's condition remained unchanged and ordered a neurology consult. The neurologist ordered an MRI which was read as a large stroke. Later that evening, the patient became unresponsive and their right pupil was fixed and dilated. They were placed on a ventilator, transferred to a higher level of care, and passed away the following day.

The original CT scan was later re-read with marked abnormality in the right hemisphere with loss of gray-white matter in the parietal area consistent with an acute middle cerebral artery infarct. When the CTA scan was reevaluated, it showed loss of blood flow consistent with a right middle artery infarct and developing edema.

ALLEGATION

The family sued the radiologist and the emergency medicine provider for a delay in diagnosis of acute middle cerebral artery infarct.

DISPOSITION

The case was settled for more than $500,000.

ANALYSIS

- **The radiologist's misinterpretation of the CT scan was a primary contributing factor to the patient's outcome.** When faced with a physical assessment that does not align with the test result, a discussion between the radiologist and the ED provider could have been key to resolving any confusion.
- **The ED provider failed to appreciate signs and symptoms of a stroke.** Despite having initial concerns about the patient having a stroke, the ED provider developed confirmation bias after receiving the negative CT scan result and did not pursue reasons for the patient's condition. It was not until the patient's condition worsened that they ordered a CTA, but because the radiologist did not communicate the test issues, it confirmed the ED provider's bias that the patient was not having a stroke.
- **The radiologist failed to follow up with the ED provider about the test results.** The lack of communication between the radiologist and the ED provider about any results or issues with the CTA further influenced the ED provider's initial assessment.
- **Weekend and off-shift resources were not available.** If a neurologist was either in the hospital or on-call, the patient might have been able to receive tPA in a timely manner. An MRI was only obtained once a neurologist saw the patient the next day.