

### QUESTION

A 65-year-old male patient with a long history of hypertension and hyperlipidemia is brought to the emergency department by ambulance. He is found unresponsive at home. On arrival, he is intubated and brought to the ED. His vital signs are: BP 180/100 mmHg, HR 110 bpm, RR 20 breaths/min, SpO<sub>2</sub> 98% on 4L O<sub>2</sub>. He has a Glasgow Coma Scale of 3. His physical exam is notable for a regular rhythm, clear lungs, and no focal neurologic deficits. A CT scan of the head is performed and shows a large right parietal subdural hematoma (SDH) with a mass effect and midline shift to the left. The patient is taken to the operating room for craniotomy and evacuation of the hematoma. Postoperatively, he remains intubated and is transferred to the intensive care unit. His vital signs are: BP 160/90 mmHg, HR 100 bpm, RR 18 breaths/min, SpO<sub>2</sub> 98% on 4L O<sub>2</sub>. He has a Glasgow Coma Scale of 4. His physical exam is notable for a regular rhythm, clear lungs, and no focal neurologic deficits. A CT scan of the head is performed 24 hours postoperatively and shows a small residual right parietal SDH with minimal mass effect. The patient is extubated and is transferred to the medical floor. His vital signs are: BP 140/80 mmHg, HR 80 bpm, RR 16 breaths/min, SpO<sub>2</sub> 98% on 2L O<sub>2</sub>. He has a Glasgow Coma Scale of 15. His physical exam is notable for a regular rhythm, clear lungs, and no focal neurologic deficits. The patient is discharged home on the 5th day of hospitalization. His vital signs are: BP 130/70 mmHg, HR 70 bpm, RR 14 breaths/min, SpO<sub>2</sub> 98% on 2L O<sub>2</sub>. He has a Glasgow Coma Scale of 15. His physical exam is notable for a regular rhythm, clear lungs, and no focal neurologic deficits.

| Time          | Vital Signs   | Neurologic Exam       |
|---------------|---|-----------------------|
| Arrival       | BP 180/100 mmHg, HR 110 bpm, RR 20 breaths/min, SpO <sub>2</sub> 98% on 4L O <sub>2</sub> | Glasgow Coma Scale 3  |
| Post-op       | BP 160/90 mmHg, HR 100 bpm, RR 18 breaths/min, SpO <sub>2</sub> 98% on 4L O <sub>2</sub>  | Glasgow Coma Scale 4  |
| Medical floor | BP 140/80 mmHg, HR 80 bpm, RR 16 breaths/min, SpO <sub>2</sub> 98% on 2L O <sub>2</sub>   | Glasgow Coma Scale 15 |
| Discharge     | BP 130/70 mmHg, HR 70 bpm, RR 14 breaths/min, SpO <sub>2</sub> 98% on 2L O <sub>2</sub>   | Glasgow Coma Scale 15 |

What is the most likely cause of the patient's initial presentation?

### ANSWER

The patient's initial presentation is most likely due to a large right parietal subdural hematoma (SDH) with a mass effect and midline shift to the left. This is supported by the CT scan findings and the patient's Glasgow Coma Scale of 3. The patient's vital signs are also consistent with a large SDH, showing a high blood pressure (180/100 mmHg) and a tachycardia (HR 110 bpm). The patient's physical exam is notable for a regular rhythm, clear lungs, and no focal neurologic deficits. The patient is taken to the operating room for craniotomy and evacuation of the hematoma. Postoperatively, the patient's vital signs improve, and his Glasgow Coma Scale improves to 4. This is supported by the CT scan findings, which show a small residual right parietal SDH with minimal mass effect. The patient is extubated and is transferred to the medical floor. His vital signs are: BP 140/80 mmHg, HR 80 bpm, RR 16 breaths/min, SpO<sub>2</sub> 98% on 2L O<sub>2</sub>. He has a Glasgow Coma Scale of 15. His physical exam is notable for a regular rhythm, clear lungs, and no focal neurologic deficits. The patient is discharged home on the 5th day of hospitalization. His vital signs are: BP 130/70 mmHg, HR 70 bpm, RR 14 breaths/min, SpO<sub>2</sub> 98% on 2L O<sub>2</sub>. He has a Glasgow Coma Scale of 15. His physical exam is notable for a regular rhythm, clear lungs, and no focal neurologic deficits.

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