

## Case Scenario

### Neuro Case

*A 68-year old woman with history of 3-vessel CABG and 1-vessel stenting presents to a rural ED with a severe headache with vomiting for 2 hours. She also has a history of rheumatoid arthritis. She has dentures. She has not taken any of her routine medications including her metoprolol today. Her mental status is normal and her neuro exam is non-focal. Her blood pressure is 220/160, heart rate 86, respirations 20 and saturation 95% on room air. She is taken to CT scanning where a large subarachnoid hemorrhage is detected. On return from the scanner her mental status is noted to have dropped to GCS 12. The accepting neurosurgeon recommends intubation prior to critical care ground transport to a neurosurgical referral center. What is your assessment and plan?*

This patient has an unclipped aneurysm as well as severe CAD and great care has to be taken not to elevate her ICP or blood pressure too much. The airway may be complicated by limited neck mobility but that will probably be offset by removing her dentures for the intubation.

**LEMONS:** Neck mobility may be limited by her rheumatoid arthritis and this should be assessed before proceeding. Unless severe this will probably be offset by removing her dentures for the intubation.

**PREOXYGENATE:** Use non-rebreather mask on high-flow oxygen.

**PROTECT C-SPINE:** Not indicated.

**PRESSURE TO CRICOID:** Will be used, but very gently, from the time induction medication is given until the tube is confirmed in the trachea, unless the intubation proves difficult.

**PONDER:** This is NOT a crash airway. There is no reason not to take enough time to do it calmly and correctly. There is plenty of time to call for assistance if you anticipate difficulty. The primary alternative is to defer intubation but that has already been discussed with the neurosurgeon. It is important that the neurosurgeon be informed of any anticipated difficulties with intubation so they can factor that into the risk-benefit analysis. The back-up will be any appropriately sized EAD.

**PREPARE EQUIPMENT AND PEOPLE:** I would have at least two sizes of cuffed endotracheal tubes available. I would also have a bougie and two sizes of EAD available though they probably do not need to be taken out of the package. I would have both straight and curved laryngoscope blades available. Assistants prepared to monitor saturations, assist with cricoid pressure/ELM, assist with the bougie and hold the tube will be very important so the intubator can stay focused on the airway.

**PREMEDICATE:** I would give the patient a small fluid bolus to make sure her tank is full and then premedicate with esmolol 1 mg/kg 5 minutes before intubation and fentanyl 3 micrograms/kg 3 minutes before intubation.

**POSITION THE PATIENT OPTIMALLY:** There should be time to insure a perfect sniffing position.

**PARALYZE AND INDUCE:** I would induce with etomidate as I would be fearful of hypotension combining esmolol and fentanyl with propofol or midazolam. I would paralyze with rocuronium to avoid any additional risk of elevated ICP from fasciculations.

**PASS THE TUBE:** The dentures would be left in-place until just before the intubation in case BVMV were required. They would be replaced if BVMV became necessary for a missed intubation.

**POST-INTUBATION MANAGEMENT:** Immediately after the tube is confirmed it will be secured and the patient placed on the ventilator with continuous capnography. The patient will receive fentanyl for analgesia and, if her blood pressure remains elevated, propofol for sedation. Further blood pressure management will be discussed with the neurosurgeon and flight team.