

SNS Junior Resident Course

Small Group Scenarios for Faculty – Day 1

Informed Consent Exercise

In this breakout session, you will be asked to obtain informed consent for a variety of procedures. Principles of professional communication will be tested as well as specific issues related to the procedure.

Professional communication essentials: Take your time, introduce yourself, maintain eye contact, and sit down if possible. Allow time for questions. Explain the patient's condition, differential diagnosis, and potential natural history of their condition, treatment options, risks, surgery and risks/benefits. General risks of any surgery such as anesthesia, bleeding and infection, followed by specific risks of the procedure should be covered. Expectations of the length of the procedure, post-operative course and recovery are common questions. Always ask if there are any questions

Don't make things up. If you don't know the answer, find out the answer from your senior resident or attending.

The exercise may also cover special circumstances such as legal guardianship, language barriers, pediatrics, refusal of consent, emergency procedures and medical necessity.

- I. 4 procedural consents to role play
 - i. Unruptured aneurysm
 - ii. Cervical decompression for stenosis
 - iii. VP shunt revision
 - iv. Lumbar discectomy
- II. Group feedback on word choice, missed steps or quoted risks, etc.

Behavior Scenario and Model-Based Clinical Simulations

- I. Breaking bad news (25 minutes) - Relaying news of a poor prognosis (metastatic cancer, TBI, spinal cord injury, pediatric, brain death withdrawal, ICH)
- II. Medical Errors (25 minutes) - Relaying news of a complication or medical error complication in OR, dropped bone flap, wrong med, infection
- III. ICU crisis (40 minutes) – see following scenarios

Scenario 1

55 year old woman with history of mild hypertension, diabetes and presents with worst headache of her life

What is the initial diagnostic workup (Head CT + vs. -; LP if -, etc... Can discuss H/H and Fischer grades, role of CTA in early eval, etc...)

Head CT and/or LP is +; Patient is transferred to neuro ICU; Patient is awake, initial BP is 190/90, HR 85, O2 sat 95%.

What interventions do you start at this point? (BP control, what meds, nimodipine, mild sedation, HOB elevated, low lights/quiet room, etc...)

BP is better controlled (140/80). Stable for 4 hours; nurse calls that patient is no longer arousable, beginning to flex to pain (maybe BP elevates to 180/100 and HR drops to low 50s).

What could be causing the change and what do you do now? (Hydro vs. re-bleed vs. seizure; repeat head CT, ventriculostomy, etc....)

Patient is stabilized (+/- improvement in exam depending upon how scenario is proceeding). Undergoes therapy the next morning (*options? Endovascular vs. open surgery; perhaps discuss some features of the aneurysm which may influence choice of therapy ex. wide vs. short neck, location, mass effect such as 3rd nerve palsy, mass effect from intraparenchymal hematoma, etc...*)

Management options in ICU following treatment? (can vary depending on condition i.e. patient is easily arousable, opening eyes and following commands vs. arouses to painful stimuli, intermittently follows commands vs. does not open eyes, localizes pain or flexes/extends; discuss issues such as use of surveillance TCDs, post-op angios and timing to evaluate for potential vasospasm)

Patient is stable and then begins to improve, opens eyes, follows commands for several days. Day 10 patient begins to decline and is much more lethargic, maybe develops focal weakness, etc...

What may be causing the decline and what are treatment options? (Discuss evaluation of vasospasm, role of TCDs, angio; discuss HHH therapy, role of angioplasty or endovascular drug therapy)

Scenario 2

65 year old right-handed man with 3 week history of mild confusion, intermittent word-finding difficulty and headache.

Differential diagnosis? Imaging findings?

Patient is admitted and imaging demonstrates ring-enhancing mass in left temporal lobe.

Options? Discuss role of biopsy vs. surgical resection. Discuss post-op management in the ICU (what meds such as decadron, antacids, anticonvulsants, etc..)

Post-op patient is stable. 2 days later, patient becomes more lethargic, aphasic, right pronator drift

What may be a cause of this decline? What do you want to check? (Serum Na, check I/Os and patient is positive with some free water, head CT or MRI demonstrates severe edema) Interventions? (Mannitol, hypertonic saline, fluid restriction, increase decadron, possibly ventriculostomy if very severe, etc...)

Patient improves. Next day patient suddenly becomes unresponsive. Eye deviation is noted.

What are potential causes of this (bleed vs. seizure)? What are diagnostic and treatment options (ativan for possible seizure, check drug level if on dilantin or tegretol, check free dilantin level and discuss role of proteins and free dilantin, head CT, possible bleed, etc...).

Patient is stabilized. Starts to improve. 2 days later patient becomes a bit more lethargic and is noted to have temps up to 39.2 intermittently.

Workup? (WBC with diff, U/A, CXR, possible bronch if intubated, dopplers or CT for possible DVT as cause of fever, MRI +/- contrast, possible LP, etc....). Give some positive result and then discuss intervention.

Scenario 3

37 year old construction worker fell 15 feet from scaffolding striking head. No LOC. Head CT negative. Positive neck pain, brought in in collar. Increasing difficulty with breathing and progressive weakness of hands, wrists and biceps as well as legs.

Initial evaluation and management (c-spine x-ray, neck CT if stable; give scenario where x-ray and CT are negative, see if they consider MRI to rule out acute cervical disc). Discuss use of GW Tongs and appropriate weights per level to stabilize neck. Discuss role use of steroids, dosing and timing of use (methylprednisolone 30mg/kg bolus over 15 min followed by 5.4mg/kg/hr for 23 hours, started within 8 hours of injury), evidence supporting this (particularly recent studies demonstrating no benefit).

Patient develops sudden hypotension roughly 2 hours after arrival.

What are potential causes of hypotension? (Hypovolemia from undiagnosed splenic laceration or retroperitoneal bleed; should lead to tachycardia. Check urine output, cvp line, etc... VS. spinal shock, should lead to bradycardia with hypotension. Discuss management options for each, such as volume, abdominal CT/general surgical exploration or pressors for spinal shock (atropine in acute setting, norepinephrine/dopamine/dobutamine over days to weeks)). Discuss usual longevity of spinal shock (days to weeks).

Patient is stabilized and is taken to OR for decompression and fixation of C5 injury (can discuss timing of surgery relative to injury i.e. immediate vs. days later). Patient does well and BP and HR begin to normalize 2 weeks later and meds are able to be weaned and some recovery of bicep and hand function are noted, although his legs are still out. The patient is noted to have an isolated episode of low-grade fever (38.4). 8 hours after the fever, the patient develops acute hypertension to 210/120 with HR 50 and profuse sweating.

What may be the cause of this and what is the intervention? (They may assume intracranial bleed given the hypertension and relative bradycardia; can take them down that road with head CT, etc... but have the problem worsen with higher BP and possible onset of cardiac arrhythmias due to the delay in diagnosing the real problem). Discuss autonomic dysreflexia and usual onset after resolution of spinal shock as a reflex reaction. Treatment: Acutely reduce BP by sitting patient in straight upright position, use nitrates such as nifedipine, hydralazine, etc.. Must treat the offending insult, such as UTI, urinary retention, bowel impaction).

Patient does well but 3 days later develops arrhythmia and sweating again with O2 sat decrease to 85%.

What might be cause? Discuss DVT and PE prophylaxis, what should have been done to prevent this (subQ heparin, full anticoagulation if safe, IVC filter), diagnostic studies for PE, treatment of mild vs severe, saddle-type embolus. Doppler or CT of lower extremities negative for clot. Discuss how this can happen in PE (i.e. clot that was there can migrate and cause PE leaving no evidence of prior DVT).

Scenario 4

25 year old man who was drinking with friends was struck by taxi while crossing the street after leaving the bar. Positive loss of consciousness at the scene but he regained consciousness. BIBA to ED.

Initial workup? (ABCs, head CT, c-spine x-ray/CT, general surgery evaluation of abdomen, orthopedic evaluation of any fractures)

Head CT demonstrates diffuse subarachnoid hemorrhage, small right temporal and left frontal contusions. Patient transferred to ICU.

Initial ICU management? (Check Na level, foley, head of bed, AED load. Discuss use of steroids in trauma to see if anyone would start steroids; explain contraindication in trauma).

4 hours after admission to ICU, patient develops decreased consciousness.

Workup? (Exam, particularly response to verbal or painful stimuli, pupils, etc... Repeat head CT)

Can give multiple options at this point.

- Patient could have a large epidural that evolved, needing emergent surgery.
- Patient could have evolving contusions and brain edema requiring ventriculostomy or bolt (can discuss value of ventriculostomy and use of bolt when this is not feasible). Also discuss the role of clot evacuation and hemicraniectomy in this situation and the timing and preferred size of the hemicraniectomy.
- Could have seizures

Patient is stabilized (ICP controlled or clot is evacuated, etc..). 36 hours later, the patient's ICP begins to elevate and CSF drainage cannot reduce ICP below 20.

What are the treatment options? Discuss CPP management here; have them calculate a MAP based upon the patient's BP and then calculate CPP based upon the MAP and ICP. Discuss the goals of CPP management (i.e. what optimal minimum CPP should be maintained). Discuss options for controlling ICP when ventriculostomy and hemicraniectomy are insufficient (hypertonic saline, cooling the patient, barbiturate coma, etc..). Can throw in patient serum Na is decreasing to below 125; discuss cerebral salt wasting vs. SIADH, methods to diagnose including uring specific gravity

and electrolytes, I/O, CVP and the different way of managing (such as hypertonic saline vs. fluid restriction)