

Simulated Clinical Experience (SCE™) Overview

Scenario File Name: Postoperative Haemorrhage

Overlay on: Standard Man

Location: Surgical Ward

Synopsis:

This simulated clinical experience was designed to expose the learner to the patient who experiences haemorrhaging postoperatively. The patient returns to the Surgical Ward postoperatively and begins bleeding. The patient is a Jehovah's Witness. Fluid resuscitation is instituted with deterioration noted requiring a return to Theatre. This experience will represent unstable haemodynamics as blood loss is simulated. There are four states. The instructor will need to manually change the bulb-type suction device several times as it will need to represent increased bright red blood drainage. This simulated clinical experience is intended for the learner in Semester VI.

History/Information:

This patient is a 60-year-old male who was admitted to the hospital with fever and weight loss of 10kg in the past month. He also has night sweats and fatigue. His admitting diagnosis is renal cell cancer of the left kidney. Preoperatively, the patient received ferrous sulfate, Erythropoietin alfa, and vitamin C. The patient is on Bendrofluazide 2.5mg once daily for hypertension. The patient smokes one pack of cigarettes per day since the age of 24 and admits to two cups of caffeinated coffee per day. His BP on admission was 136/84 and his preoperative blood results revealed Hb 14, Hct 40%, slightly elevated urea and electrolytes. The patient is a Jehovah's Witness.

The patient was transferred back to the Surgical Ward following a left nephrectomy. His surgery was uneventful. His vital signs have been stable for the past four hours. He has been dozing but responds to verbal stimulation. He was given pain relief one hour ago.

Healthcare Provider's Orders:

Admitting Diagnosis: renal cell carcinoma, status post left nephrectomy

Transfer to Surgical Ward

Condition Serious

Vital signs per ward routine

Complete bedrest

IV 0.9% Normal Saline at 150mL/hour

NBM

Nasogastric tube on free drainage

Urinary catheter

Notify healthcare provider if urine output less than 50mL/hour

Cough and deep breathe, peak flow every 1-2 hours

Oxygen at 50% via face mask

Continuous cardiac and pulse oximetry monitoring

Notify healthcare provider if SpO₂ less than 90%

Continuous antiembolic stockings

Cefotaxime 2g IV every six hours for 72 hours

Sucralfate 1g PO/NG every six hours

Erythropoietin alfa 40,000units in pre-filled syringe STAT

Ferrous sulfate 200mg PO three times daily

Vitamin C 500mg PO every day

Folic Acid 5mg PO every day

Morphine sulfate 1mg IV every hour prn pain

Chest x-ray, FBC, Urea and Electrolytes, Creatinine, Glucose, ABGs STAT

Learning Objectives/Questions

1. Identifies the signs and symptoms of acute haemorrhaging (KNOWLEDGE).
2. Interprets and responds to trends in vital signs and lab values in the patient with acute haemorrhaging (ANALYSIS).
3. Supports the rights of Jehovah Witness patients in refusing blood transfusions based on their religious beliefs (AFFECTIVE).
4. Devises a plan of care for the postoperative haemorrhaging nephrectomy patient (SYNTHESIS).

Questions to Prepare for the Simulated Clinical Experience:

1. Identify and discuss alternatives to blood transfusion when the patient refuses blood products.
2. What is the purpose of a bulb-type surgical drain? How does it work?
3. Discuss the expected drainage amount and characteristics in a surgical drain immediately postoperatively.
4. What are the haemodynamic changes associated with haemorrhage?
5. What is the nurse's role in preparing a patient to return to theatre in an emergency?
6. How would the nurse address a patient's anxiety in an emergency situation? What are the nurse's responsibilities to the family?
7. Describe the initial postoperative management of the nephrectomy patient and discuss collaborative management designed to prevent complications.

Suggested Equipment, Supplies and Simulator Setup

IV Supplies		Miscellaneous	
Sterile water 1000mL (label as 0.9% Normal Saline)	2	Anti-embolic stockings	1
Transparent dressing IV 3000/tegaderm	2	Wound drain (Bulb-type)	3
IV administration set	1	Graduated measuring medicine pot	1
Saline flush	1	Transport cardiac monitor	1
IV cannulae	2	Appropriate stationery and request forms	1
IV pump	1	ID band	1
Oxygen Supplies		Stethoscope	1
Oxygen flowmeter	1	BP cuff adapted for use with simulator	1
Oxygen source	1	Box non-sterile gloves	1
Face mask	1	Sharps box	1
Oxygen tubing	1	Video camera and tapes (if recording)	1
Portable oxygen tank and tubing	1	Monitors Required	
Genitourinary Supplies		ECG	
Urinary catheter with drainage bag	1	Arterial Line	
Sterile water 1000mL with 1.5mL yellow food colouring for urine source	1	NIBP	
Dressing Supplies		SpO ₂	
Large dressing	1 box	Temperature	
Drain sponge	1 box		
2" hypoallergic tape	1		

Notes

- The patient needs to be set up as a postoperative patient.
 - Dress in hospital gown and position supine.
 - Insert and clamp a nasogastric tube.
 - Apply oxygen via face mask at 50%.
 - Insert two peripheral IV lines (one just as a saline flush, one is infusing via an IV pump at 150mL/hour).
 - The large flank dressing will initially be dry and occlusively intact.
 - Create serous drainage to place into one bulb type wound drain by adding red food colouring to 15-20mL of water until desired colour. Have this drain coming from under the dressing.
 - Initial urinary output is clear yellow. Mix yellow food colouring with bag of sterile water and attach to genitourinary system of simulator.
- In State #2, the patient will begin to haemorrhage. At that point, the instructor needs to make the following changes. Either distract the students while the changes are made or show them the new dressing and drain when they do their assessment.
 - Saturate one of the large dressings with simulated blood by mixing red food colouring with 60mL of washing up liquid. Allow dressing to dry before placing on simulator's flank area. Place a dressing to left flank
 - Create bright red blood drainage to fill the two remaining bulb type wound drains by adding red colouring to 75mL of water each until desired colour.
- Have the learners role play inter-professional communication by reporting the patient's response to interventions. If the data presented is unorganised or missing vital components, have the healthcare provider become inappropriate in their response. Emphasise importance of data organisation and completeness when communicating.
- Role-play intra-professional communication by having the learner hand over to theatre as the patient is rushed back for a second surgical procedure.
- Do not provide lab/blood results to the learner until they request them.
- Learner is expected to integrate content from sciences, physical and behavioural sciences, and previous nursing courses when preparing for and participating in simulation activities.

References

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Scenario States

State	Events	Minimal Behaviours Expected	Prompts, Questions, and Teaching Points
<p>State #1: Initial Assessment four Hours Postop</p> <p>INSTRUCTOR NOTE: Prior to start of scenario, open Oxygen Treatment Scenario and choose FiO₂ 50%</p>	<p>RR=14; HR=100; BP=136/84; SpO₂=94% on 50% O₂; Breath Sounds=Clear; Cardiac Rhythm=Sinus tachycardia; Bowel Sounds=Absent; Urine Output=30mL clear yellow; Lethargic; Dressing dry and intact; Drain output 10mL serous drainage; Temp=37.0°C</p> <p>Tell learners when they enquire: Skin pale, cool; Face puffy; Abdomen soft</p>	<ul style="list-style-type: none"> Identifies the patient appropriately by checking name band Checks allergies Assesses level of consciousness, skin colour, and mucous membranes Monitors respiratory status, including rate, rhythm and depth of respirations, and assesses lung sounds Assesses surgical wound dressings, amount and colour of drainage Assesses intravenous infusion site for redness, pain, swelling, or drainage Notes colour, clarity, and amount of urine output Notes drains and colour, amount, consistency, and odour of drainage Interprets findings and documents Encourages cough and deep breathing exercises Verifies healthcare provider's orders Notifies lab and radiology of orders Trends vital signs 	<p>Considering the surgical procedure done, what genitourinary assessments would be included?</p> <ul style="list-style-type: none"> <i>The urine in the catheter should be checked for clarity and colour</i> <p>How would the nurse prioritise the head to toe assessment in the postoperative patient?</p> <ul style="list-style-type: none"> <i>Airway, breathing, and circulation should be checked first</i> <i>The surgical site and urine output should be checked next followed by the rest of the physical exam</i>
<p>State #2: Haemorrhaging Begins</p> <p>INSTRUCTOR NOTE: The second drain and saturated flank dressing will be presented to the learner as they conduct their assessment</p>	<p>RR=18; HR=120; BP=94/62; SpO₂=94% on 50% O₂; Breath Sounds=Clear; Cardiac Rhythm=Sinus tachycardia; Bowel Sounds=Absent Urine Output=100mL clear yellow; More alert; Complains of pain; Dressing saturated bright red blood; Drain Output=75mL bright red; Temp=37.0°C</p> <p>When learner requests results: FBC: Hb 11 Chest x-ray: Completed moments ago</p>	<ul style="list-style-type: none"> Obtains vital signs Completes a brief assessment, interprets findings, and documents Identifies increased bleeding Evaluates pain and intervenes appropriately Empties drain, noting characteristics and amount Notes that urine output appears clear Notifies healthcare provider of increased drainage and lab results 	<p>What would the nurse include in a brief assessment?</p> <ul style="list-style-type: none"> <i>The brief assessment should always include airway, breathing, circulation</i> <i>Assessment of surgical site</i> <p>What might the characteristics of the drainage represent?</p> <ul style="list-style-type: none"> <i>Thick dark red drainage in copious amounts can represent bleeding</i> <i>Thin dark red drainage in small amounts may represent normal postoperative drainage</i> <p>What are the signs and symptoms of haemorrhagic shock?</p> <ul style="list-style-type: none"> <i>Hypotension</i> <i>Tachycardia</i> <i>Diaphoresis</i> <i>Paleness in colour</i> <i>Oliguria</i>
<p>Healthcare Provider's Orders: Monitor drainage every 15 minutes Give IV 0.9% Normal Saline bolus 250mL over 30 minutes Obtain Clotting Screen</p>			

Scenario States

State	Events	Minimal Behaviours Expected	Prompts, Questions, and Teaching Points
<p>INSTRUCTOR NOTE: When learner begins IV fluid bolus, open Fluids Treatment Scenario and choose 250mL Crystalloids</p>		<ul style="list-style-type: none"> Hangs IV bolus and sets infusion pump correctly Repeats vital signs Notifies lab of additional orders 	<p>What is the goal of administering a saline bolus?</p> <ul style="list-style-type: none"> To prevent hypovolaemia from blood loss <p>As the Hb and Hct drop, what changes in the patient's neurologic status might be observed?</p> <ul style="list-style-type: none"> Lethargy Confusion Cognitive dysfunction
<p>State #3: Continued Haemorrhage</p> <p>INSTRUCTOR NOTE: Present learners with second drain that has 75mL of bright red drainage</p>	<p>RR=22; HR=128; BP=88/58; SpO₂=92% on 50% O₂; Breath Sounds=Clear; Cardiac Rhythm=Sinus tachycardia; Bowel Sounds=Absent Urine Output=30mL clear yellow; More alert; Anxious; Complains of pain; Dressing saturated bright red blood; Drain Output=75mL bright red</p> <p>When learner requests results: FBC: Hb 8 Coagulation: INR 1.9, PPT 25 seconds Chest x-ray: Clear, nasogastric tube in stomach</p>	<ul style="list-style-type: none"> Reassesses, interprets findings, and documents Repeats vital signs Increases oxygen as needed Reinforces dressing Empties drainage tube, noting amount and characteristics of drainage Maintains accurate intake and output Requests lab and radiology results and interprets Calls healthcare provider with lab results, vital signs, and drainage amount 	<p>How can a nurse address a patient's anxiety during an emergency?</p> <ul style="list-style-type: none"> Provide explanations of the patient's clinical status and what interventions are being done to handle and monitor the patient <p>What changes might the nurse note in the amount and characteristics of urinary output?</p> <ul style="list-style-type: none"> Decreased urine output due to hypoperfusion May have change in colour from yellow to pink or dark red if the patient is bleeding from the surgical site <p>How would saline boluses affect the haemoglobin and haematocrit?</p> <ul style="list-style-type: none"> They will decrease as a result of dilution from fluids
<p>Healthcare Provider's Orders: Prepare for return to Theatre Obtain consent for blood transfusion</p>			
	<p>Refuses blood transfusion due to religious beliefs</p>	<ul style="list-style-type: none"> Obtains vital signs Explains return to Theatre to patient Attempts to obtain consent for blood transfusion Addresses emotional issues Empties urinary drainage bag and measures urinary output Empties and measure drain output Connects to transport monitor and portable oxygen Hand over to Theatre nurse 	<p>What are the nurse's responsibilities in preparing to return this patient to Theatre?</p> <ul style="list-style-type: none"> Notify the surgeon of the refusal of blood products Explaining to the patient that they need to return to Theatre Answering any questions and providing reassurance Emptying drains and documenting output Ensuring the documentation is current Unplugging the electrical equipment (bed, IV pumps) Attaching the patient to the transport monitor and portable oxygen Reminding the surgeon to speak to the family <p>What alternatives exist for the patient who will not accept blood products?</p> <ul style="list-style-type: none"> HAES Plasma volume expander Colloids <p>What measures can the nurse institute to allay anxiety of any family members or significant others?</p> <ul style="list-style-type: none"> Provide emotional support as well as request pastoral care, if desired