Simulation: Retained Surgical Item with Reconciliation

Summary

Mr. James Smith a 70-year-old man undergoing a left lower lobectomy for excision of non-small cell lung cancer confirmed with biopsies obtained from a bronchoscopy procedure two weeks ago. PET scan and CT scan reveals a mass in the left lower lobe.

Past Medical History

- COPD
- Hypertension
- Osteoarthritis of both knees and hips
- Reflux
- Gout

Past Surgical History

- Tonsillectomy (1959)
- Septoplasty (1999)
- Left inguinal herniorrhaphy (2015)

Setting

Simulation Operating Room or OR not in use

Time

- Pre-brief: 5 minutes
- Simulation: 10 minutes
- Debrief: 20 minutes

Participants

Interdisciplinary

- Surgeon
- First Assistant (RN, CSA, MD)
- Anesthesia Professional (Anesthesiologist, CRNA)
- RN Circulator
- Scrub Person
- OR Manager
- Radiology Technologist

Embedded simulation personnel

Clinical educator

Observers

Potential Systems Explored

- Roles of the perioperative team members during a retention of surgical item event
- Interprofessional training in communication and professionalism
- Supporting technical and development skills

Learning Objectives

1. The learner will identify the proper procedure to follow when there is an unreconciled count.
2. The learner will demonstrate the reconciliation process when there is a suspected RSI.
3. The learner will demonstrate multidisciplinary team closed looped communication within the OR.

Pre-simulation

1. Complete the online modules
2. Review the health care organization's policy for prevention of retained surgical items

Standard Introduction *Modify if necessary.*

1. Sign in and obtain participant consents for video or research, if necessary
2. Have participants introduce themselves
    a. Specialty, experience, and role
    b. Something personal
3. Orient participants to simulation process
    a. Briefing
    b. Case (simulation)
    c. Debriefing-Discuss and review what went well and where there are opportunities for improvement
    d. Feedback and closing
4. Discuss course objectives
5. Describe learning environment
    a. Simulation is a safe and confidential learning environment
    b. Acknowledge anxiety
    c. Assure confidentiality of participant's performance
    d. Obtain buy-in for simulation activities. Treat it as a real-life situation, given the limitations of working with a mannequin, etc.
        1) Treat this patient as if it was your perioperative patient.
    e. You may be video recorded for purposes of debriefing. The video will be destroyed/deleted per the simulation laboratory guidelines.
6. Discuss expectations of participants
    a. Clinical role (be yourself)
    b. Assure participants that the embedded simulation personnel are there to help them and that there are no tricks.
    c. Agree on a code word for a real emergency (Simulation will end immediately)
7. Identify equipment that is live or partially functional and explain any related safety issues
    a. Mannequin
    b. Defibrillators/emergency equipment
    c. Cameras
    d. Vital signs displayed on monitoring devices
    e. Phone list
    f. Documentation system
8. Orient participants to patient situation and assumed roles; provide role cards if applicable
    a. "It is 10:00 am on a Thursday and you are taking care of a patient with…."
    b. "Your table is set up and all items have been counted…."
    c. "You will start with conducting a time out….."
9. Ask the "float/supporting" personnel to leave the simulation environment and await communication
10. Ask participants if there are any questions before beginning
    a. Answer any additional questions/clarify shared mental model
    b. Announce that the simulation is starting

Room

Simulation operating room (OR) or OR not in use

Note: If not in a dedicated simulation setting, consider infection control and medication safety issues.

Equipment and Supplies

- OR table
- Mannequin with chest model
- Identification band for the mannequin
- Instrument table with basic set up for a thoracotomy
- Laparotomy sponges
- Mayo stand basic set up
- Electrosurgical unit
- Anesthesia machine equipped per facility or simulation laboratory protocol
- Trash and linen receptacles
- Kick bucket
- Hanging pocketed sponge holders
- Simulated radiograph image and/or report of left chest
- Simulated blood
- Intraoperative documentation

Simulator Preparation

- Mannequin Intubated with an ETT
- One laparotomy sponge with simulated blood placed in left chest of mannequin
- IV in right arm
- Simulator program (vital signs, responses, etc)
- The mannequin will be in the lateral position secured on an OR bed (left side up)
- Patient identification (arm band)
- Urinary catheter (optional)
- Lower leg compression devices (optional)

Patient Information (History and Physical)

NAME: Smith, James

MRN: 000992233

DOB: 06/26/1951

HISTORY & PHYSICAL

CC: Increasing shortness of breath.

HPI: Mr. James Smith is a 70-year-old man with a history of COPD, gastroesophageal reflux, osteoarthritis of hips and knees. His CT findings are consistent with a mass in the left lower lobe. Two weeks ago, his bronchoscopy biopsies confirmed non-small cell lung cancer

Review of Symptoms: No headache, blurry vision, dysuria, diarrhea, night sweats, fever, rashes.

Positive-weight loss of 10 pounds, tiredness, shortness of breath

Past Medical History: COPD, Hypertension, Osteoarthritis of both knees and hips, gastroesophageal reflux

Past Surgical History: Tonsillectomy (1959), Septoplasty (1999), Left inguinal herniorrhaphy (2015)

Anesthesia History: No problems with prior anesthetics; no family hx of malignant hyperthermia

Current Medications:

Lisinopril 10 mg once a day

Lipitor 40 mg once a day

Trelegy inhaler once a day

Omeprazole 20 mg once a day

Allergies:

Penicillin

Social history:

Retired engineer, widowed with two adult children, occasional alcohol use, no smoking for last ten years

Physical Exam:

Height: 70 inches/177.8 cm

Weight: 205 lbs/ 93kg

VS: BP 124/82, HR 85, Temp 36.8° C (98.2° F), RR 16, Oxygen saturation 96% on RA

General: Alert and oriented x3

NEURO: Nonfocal, CN II-XII grossly intact, no weakness

HEENT: Mallampati 1, Normal neck range of motion, Thyromental normal, good dentition

CV: RRR, normal s1 / s2, no murmurs

Lungs: Clear with slight wheezing

Abdomen: Soft with active bowel sounds

Rectal: No masses

Skin: Warm and dry, no rashes or lesions, normal capillary refill

Imaging:

PET scan and CT scan reveals a mass in the left lower lobe.

Lab/Tests

CBC

WBC 6,500 (80% neutrophils, 11% lymphocytes)

Hct 41.6

PLT 160,000

BMP

Na 138
K 3.5
Cl 98
HCO3 19
BUN 15
Cr 0.95
GLU 92
Ca 8.3
Phos 2.3
Mg 1.7

ABG

pH 7.40
$PaCO_2$ 40 mm Hg
HCO_3 25 mEq/L
PaO_2 90 mm Hg
O_2 saturation 96%

ASSESSMENT / PLAN:

Mr. James Smith is a 70-year-old man with a history of COPD, gastroesophageal reflux, osteoarthritis of hips and knees. His CT findings are consistent with a mass in the left lower lobe. Two weeks ago, his bronchoscopy biopsies confirmed non-small cell lung cancer. Mr. Smith is scheduled for a left thoracotomy with lower lobectomy. ASA Class: 3. Admit to: Dr. Jones, Thoracic Surgeon.

Sequence of Events

1. Participants review patient H & P (as above with lab results including assessment and plan) in a room outside of the mock OR. They are notified that the initial count has been performed and the patient is intubated, positioned, prepped, and draped.
2. The participants enter the mock OR and are allowed to orient themselves to the environment and to the team. The simulation begins with the team performing the Time Out (per facility policy and procedure).
3. Incision is made, and surgeon performs left thoracotomy with left lower lobectomy.
4. RN circulator organizes used counted radiopaque soft goods in a pocketed sponge holder.
5. Closing counts are performed. During the count the team cannot account for one laparotomy sponge
6. All team members take immediate action to resolve the count.
7. RN circulator informs the team and receives verbal acknowledgement from the surgeon, including the number and type of the missing item.
8. The RN circulator uses the facility's designated adjunct technology device to help identify or locate the missing item (if applicable).
9. The item is not located:
    1. RN circulator
        - calls for assistance (e.g., OR manager);
        - searches the room near the sterile field, kick buckets, trash, and linen receptacles; and
        - recounts with the scrub person.
    2. The scrub person
        - organizes the sterile field,
        - searches the sterile field including the drapes and tables, and
        - recounts with the RN circulator.
    3. The surgeon and surgical first assistant
        - suspend closure of the wound if the patient's condition permits,
        - perform a methodical wound examination while actively looking for the missing item,
        - participate in the attainment of intraoperative radiographs or other imaging modalities as indicated to find the missing item, and
        - remain in the OR until the item is found or it is determined not to be in the patient.
    4. The anesthesia professional plans anesthetic milestone actions (e.g., emergence from anesthesia) allowing the team to perform insufficient count reconciliation practices
10. The missing item is still not located. Perform intraoperative radiographic imaging per facility policy. (The team simulates the radiographic imaging)

    The radiology request includes

    - the room in which the procedure is being performed or the patient is located,
    - the patient's status,
    - the type of radiograph and views needed,
    - a description of the missing surgical item (e.g., laparotomy sponge),
    - the procedure performed, and
    - the surgical site (e.g., left thoracic cavity)

11. The intraoperative imaging provides full coverage of the surgical site. Imaging results reveal a laparotomy sponge in the thoracic cavity.
12. The count discrepancy is documented in the patient's record including the intraoperative steps taken to locate the missing item (e.g., notification, use of adjunct technology, radiographic imaging, and results per facility policy).
13. The surgeon locates and removes the laparotomy sponge from the thoracic cavity. When the laparotomy sponge is removed, recount the laparotomy sponges.
14. After the skin is closed and final counts are complete, document results of the final surgical count.

Action Checklist	Time	Skill Met	Skill not met
Conduct time out/huddle			
Scrub person & OR circulator view and count sutures, sharps & soft goods			
OR circulator records count			
OR circulator uses pocketed sponge holder			
Perform closing counts			
Resolve count discrepancy			
Team acknowledges count discrepancy			
Use adjunct technology device			
RN circulator • calls for assistance • searches the room • recounts with scrub person			
Scrub person • organizes sterile field • searches sterile field • recounts with RN circulator			
Surgeon & first assistant • suspend wound closure • perform methodical wound search • orders intraoperative radiography • remains in OR			
Anesthesia professional plans anesthetic milestones			
Radiology request			
Document the results of the count. If the sponge is not found document the count discrepancy and intraoperative actions to locate the sponge.			
Recount if sponge is found and document actions			

Debrief

Begin debriefing by soliciting the participant's reactions to the simulation experience. Clarify with the team the patient situation so that everyone is on the same page.

1. Clarify confidentiality and expectations.

2. Review the learning objectives.

3. Discuss what happened in the simulation.

4. Review what went well.

5. Consider opportunities for improvement.

6. Encourage expression of reactions.

7. Ask participants:

    - "How did participating in this simulation make you feel?"
    - "Describe your thinking when…?"
    - "Were there performance gaps?"
    - "What could be changed in the OR?"

8. Review the participant's roles and team expectations in the event a surgical item cannot be located.

9. Review principles of effective interprofessional teamwork.

10. Review expectations for effective communication.

11. Discuss appropriate post-event actions: safety documentation, patient notification and consultation, and plan for follow-up care.

12. Identify learner issues.

Resource

1. Guideline for prevention of unintentionally retained surgical items. In: Guidelines for perioperative practice. Denver, CO: AORN, Inc; 2022.