Lecture 13

Subject

Nursing Care for Patient With Chest Drainage

Theoretical

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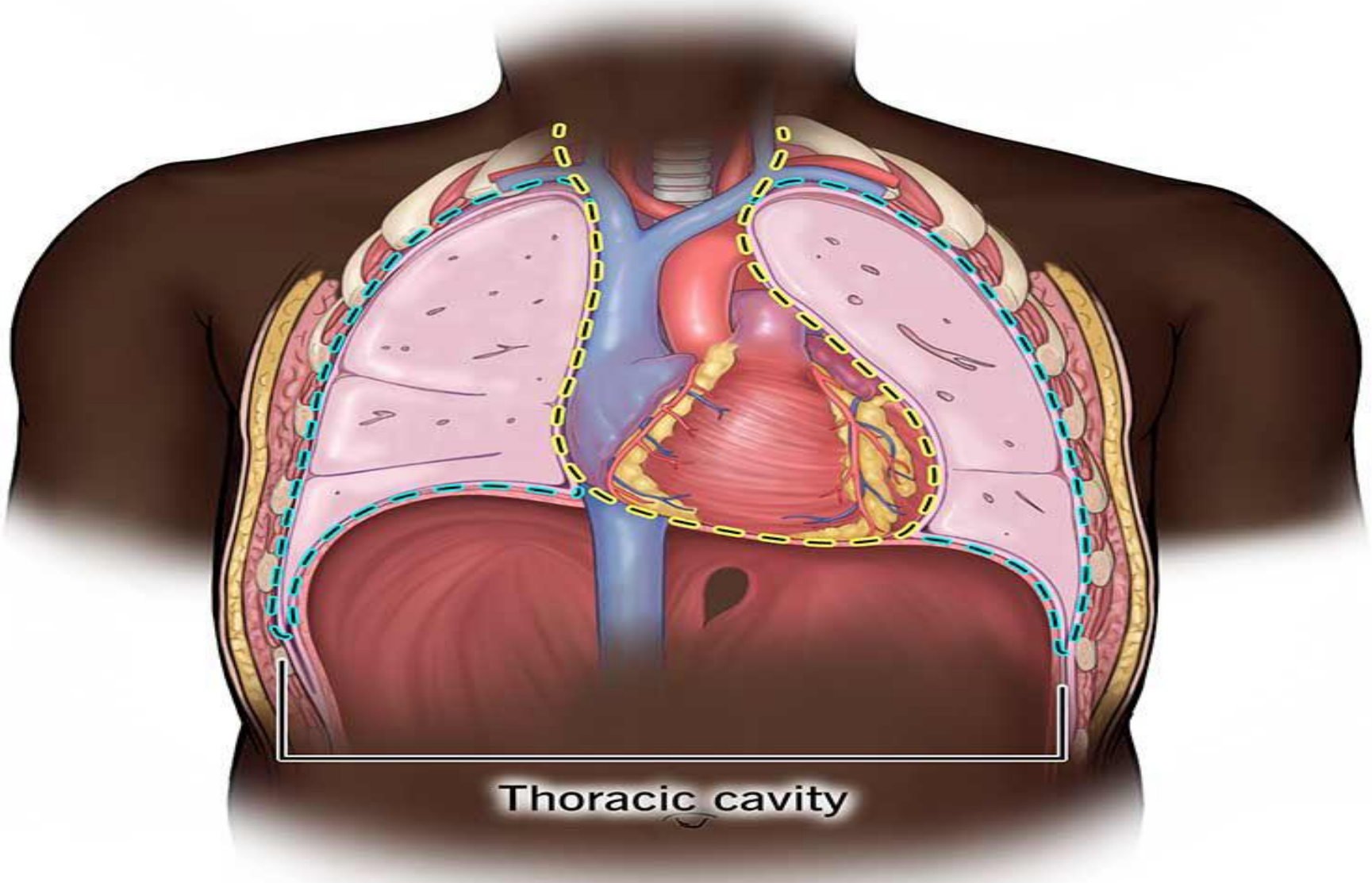
Chest Drainage

- A crucial intervention for improving gas exchange and breathing in the postoperative period is the proper management of chest drainage and the chest drainage system.
- Chest tubes may be inserted to drain fluid or air from any of the three compartments of the thorax (the right and left pleural spaces and the mediastinum).

Mediastinum



Mediastinum

Pleural cavities

Indications of chest tube

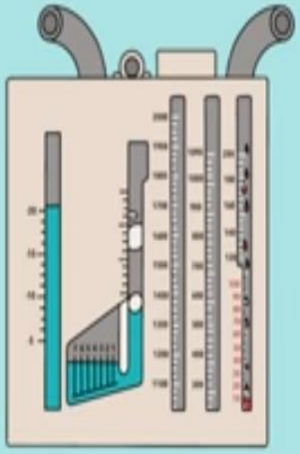
1. Used to re-expand the involved lung and to remove excess air, fluid, and blood.
2. Used in treatment of spontaneous pneumothorax and trauma resulting in pneumothorax or hemothorax.
3. Prevent cardiopulmonary complications after thoracic surgery.

CHEST TUBES

Chest Tube System:

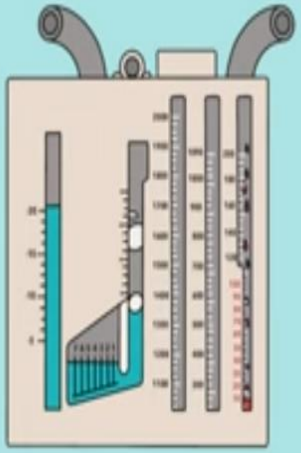
3 Chambers

1



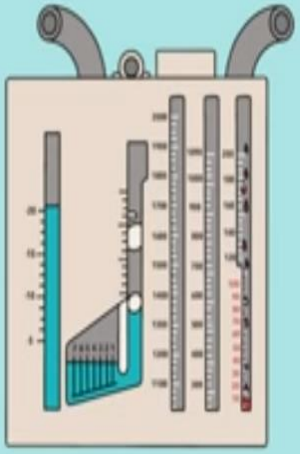
Drainage collection chamber

2



Water seal chamber

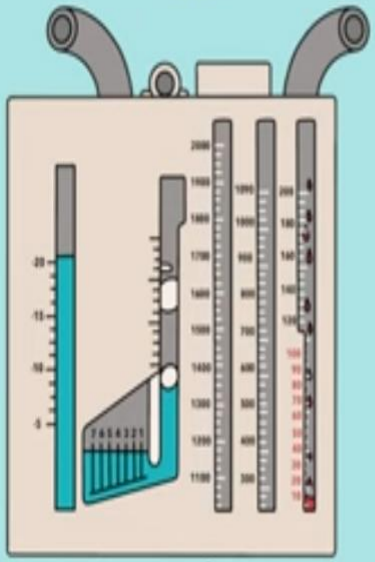
3



Suction control chamber

Drainage Collection Chamber

1



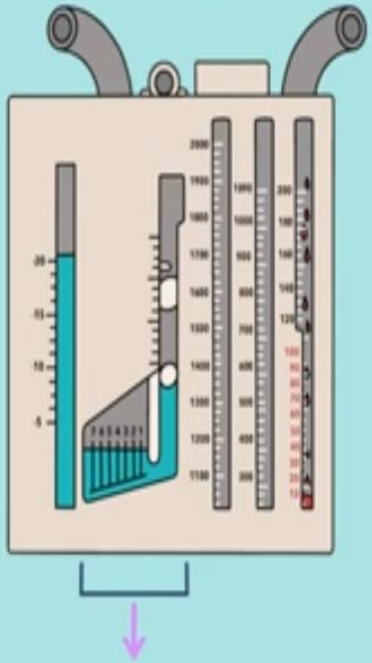
Drainage collection chamber

	serous or clear	✓
	dark red blood	✓
	purulent, green, or yellow	may indicate infection
	bright red blood	indicates active bleed!

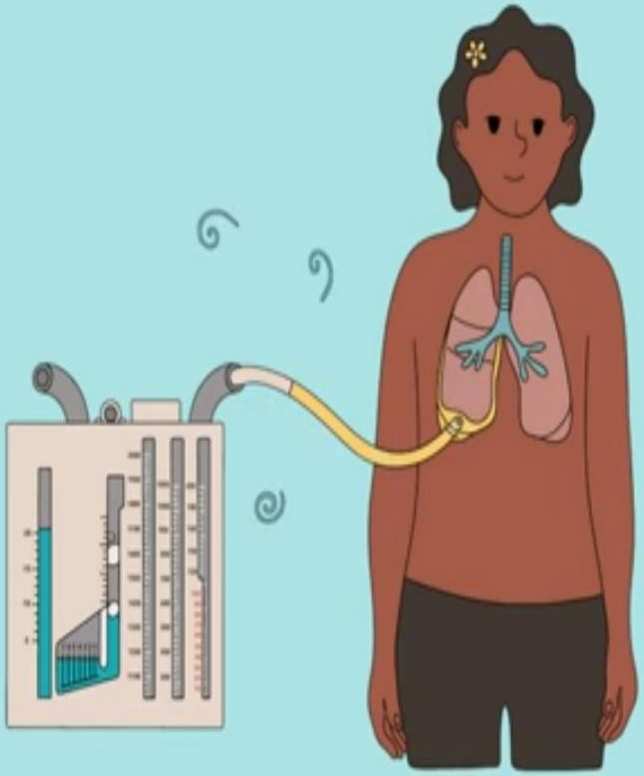
CHEST TUBES

Water Seal Chamber

2



Water seal chamber



✓ Removes volume from pleural space

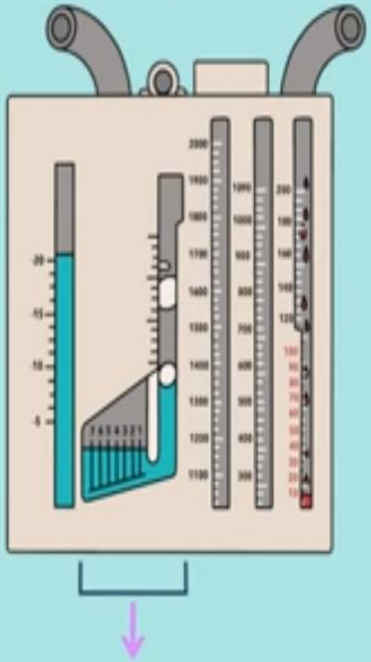
✗ Without outside air entering

creates a one-way valve or vacuum!

CHEST TUBES

Water Seal Chamber

2



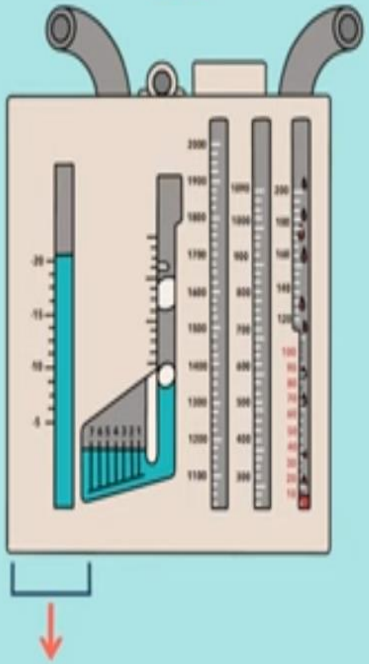
Water seal chamber

✓	X	⚠
Tidaling	Continuous bubbling	No bubbling
properly functioning	air leak	✗ tubing kinked or occluded ✓ lung has re-expanded

CHEST TUBES

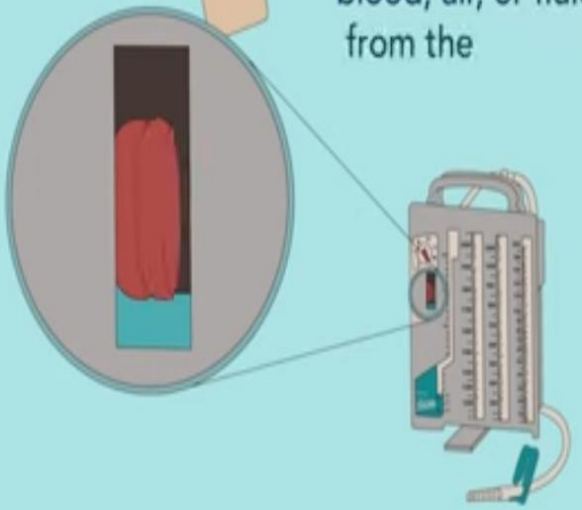
Suction Control Chamber

3



Suction control chamber

Controls strength of the suction pulling blood, air, or fluid from the




ATRIUM
Ocean
WATER SEAL CHEST DRAIN
2000
B
A
1900
1800
1700
1600
1500
1400
1300
1200
1090
1000
900
800
700
600
500
400
300
D
200
180
160
140
120
100
90
80
70
60
50
40
30
20
10
C
0
+1
+2

A


ATRIUM
Oasis
DRY SUCTION WATER SEAL
CHEST DRAIN
A
B
+40
+10
+30
+20
E
2600
C
2000
1900
1800
1700
1600
1500
1400
1300
1200
1090
1000
900
800
700
600
500
400
300
D
200
180
160
140
120
100
90
80
70
60
50
40
30
20
10
0
+1
+2

B

Preprocedure

1. Perform hand hygiene
2. Open drain packaging in a Clean ,no-touch Manner.
3.Prepare drain as manufactured instructions.
4. Explain procedure to the patient.
5.Provide privacy.
6.Chek for environment (proper temperature , good light)

Equipment Preparation

- Chest tube insertion tray (contains chest tube, scalpel, gloves)
- Antiseptic solution
- Local anesthetic agent
- Chest drainage system
- Adhesive tape

Intra-procedure

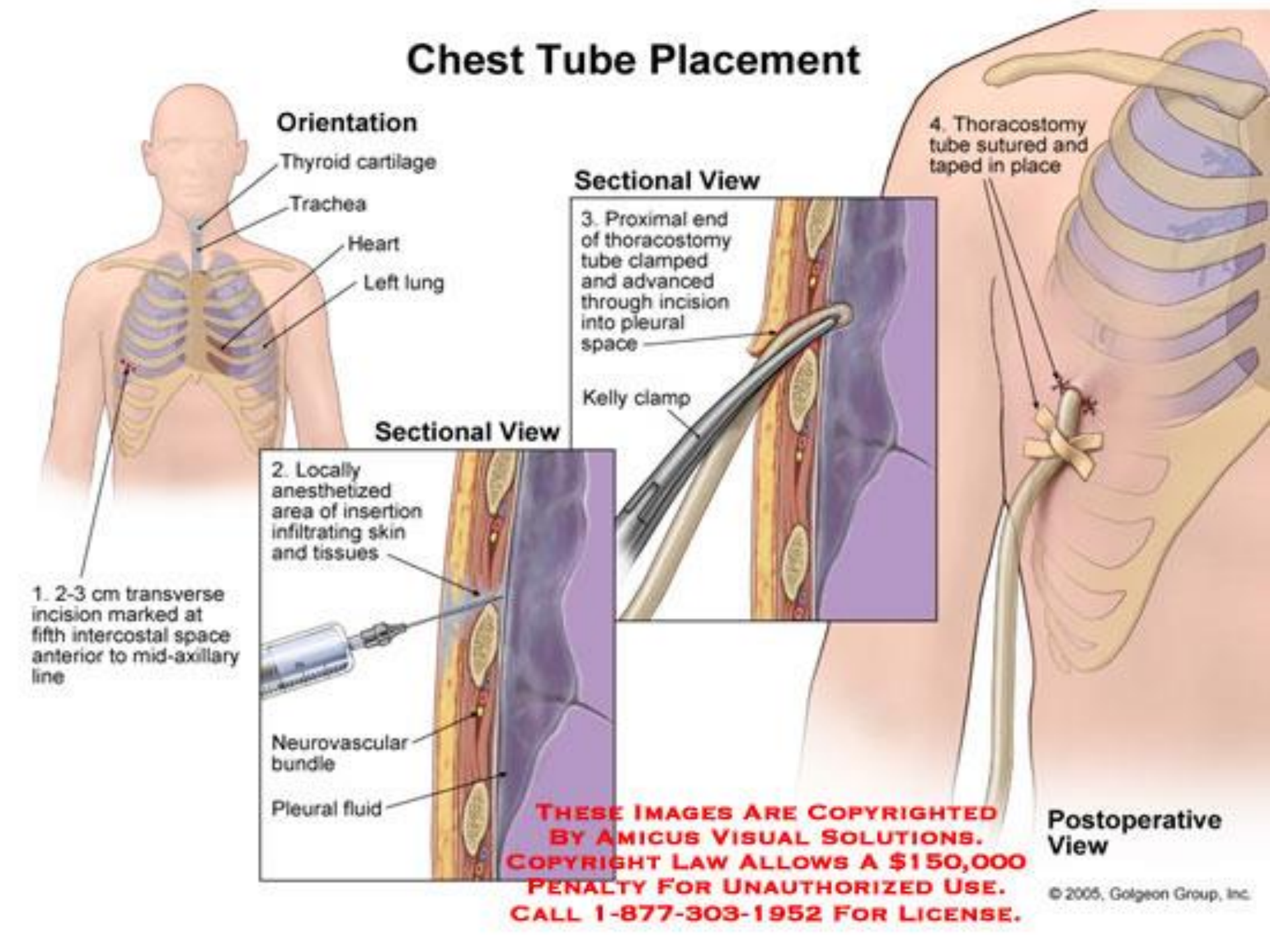
Implementation

1. Fill the water seal chamber with sterile water to the level specified by the manufacturer.

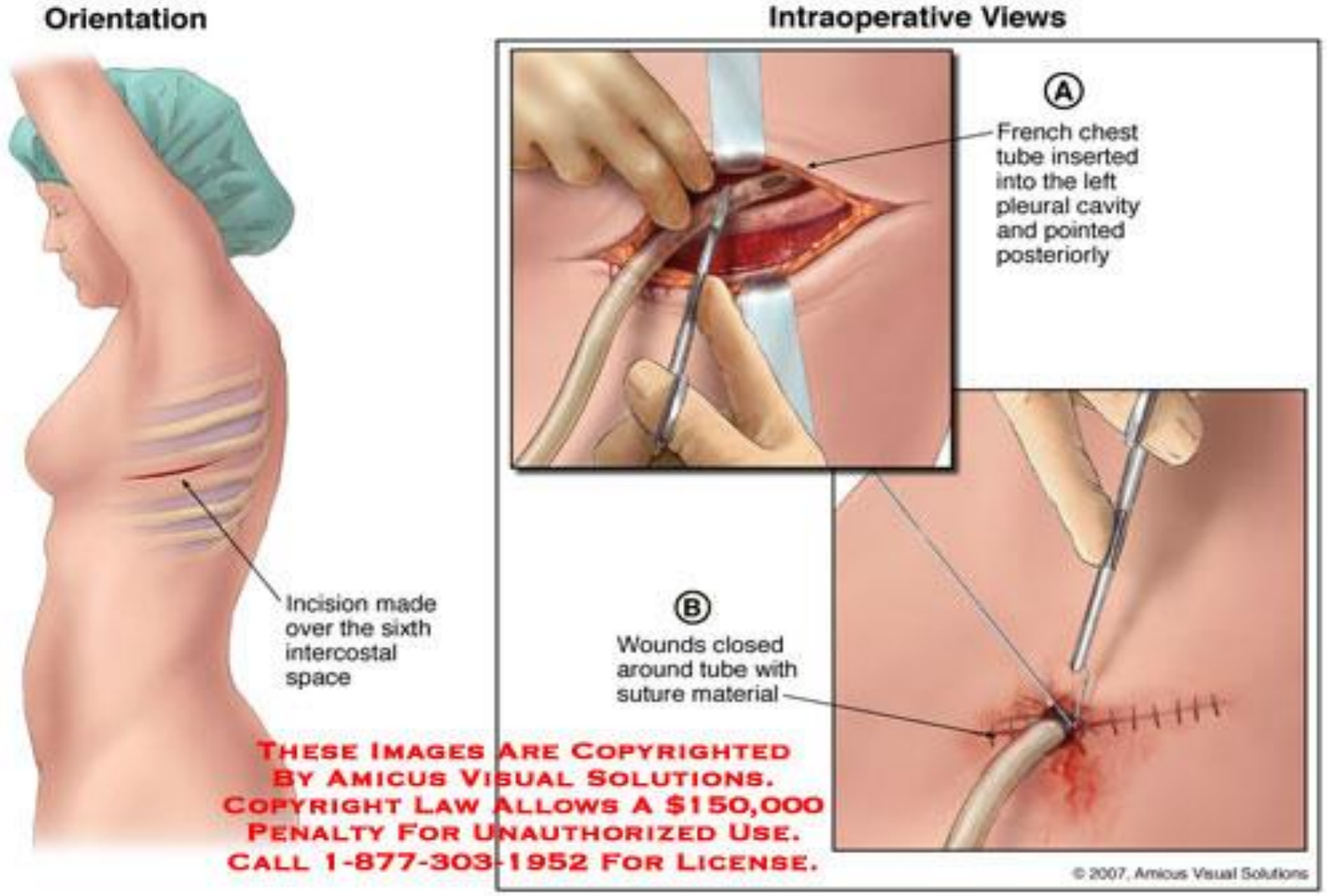
2. Attach the drainage catheter exiting the thoracic cavity to the tubing coming from the collection chamber. Tape securely with adhesive tape.

3.Apply suction to drain if ordered .

Chest Tube Placement



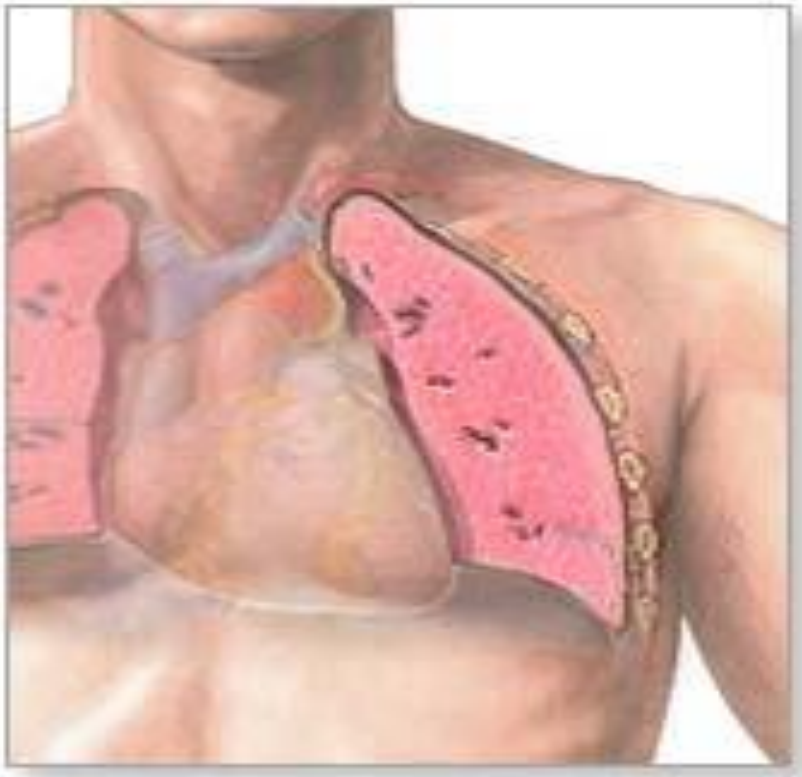
[redacted]'s 1/10/04 Surgery: Part II



Post-procedure

Before

After



Patient Management

- Auscultate lung sounds and assess for rate, rhythm, and depth.
- Monitor oxygenation with pulse oximetry.
- Monitor electrocardiogram for rate and rhythm changes.
- Assess capillary refill, skin color, and status of the surgical dressing.
- Encourage and assist the patient to turn, cough, and take deep breaths.

Chest Drainage Management

- Verify that all connection tubes are patent and connected securely.
- Monitor characteristics of drainage including color, amount, and consistency. Assess for significant increases or decreases in drainage output.
- Keep system below the patient’s chest level.
- Keep suction at prescribed level.
- Maintain appropriate fluid in water seal for wet suction systems.

Complications of chest tube

1. Bleeding from an injury intercostal artery.
2. Accidental injuries to the heart, arteries or lung result from chest tube insertion.
3. Localize or generalize infection from the procedure.
4. Unexplained air leak in the tube.

Removal of chest tube

1. Perform of hand hygiene.
2. Open dressing pack and add sterile equipment's.
3. Removal all dressing around the area.
4. Clamp drain tube.
5. Clean the area around the chest tube by use normal saline.
6. Removal suture securing drain.
7. Closure the incision by suturing and apply the dressing on it.