

**SAFETY OF CENTRAL VENOUS ACCESS IN  
PATIENTS UNDERGOING CHEMOTHERAPY &  
STEM CELL TRANSPLANTATION FOR VARIOUS  
HEAMATOLOGICAL DISORDERS:  
EXPERIENCE AT AFBMTC, RAWALPINDI**



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# INTRODUCTION

- Central venous access is the backbone of Bone marrow transplantation and intensive chemotherapy protocols
- It has direct bearing on success and favourable outcome of these specialized treatment modalities
- Despite being a safe procedure, placement of CV line is associated with a number of complications

# INDICATIONS IN BONE MARROW TRANSPLANT

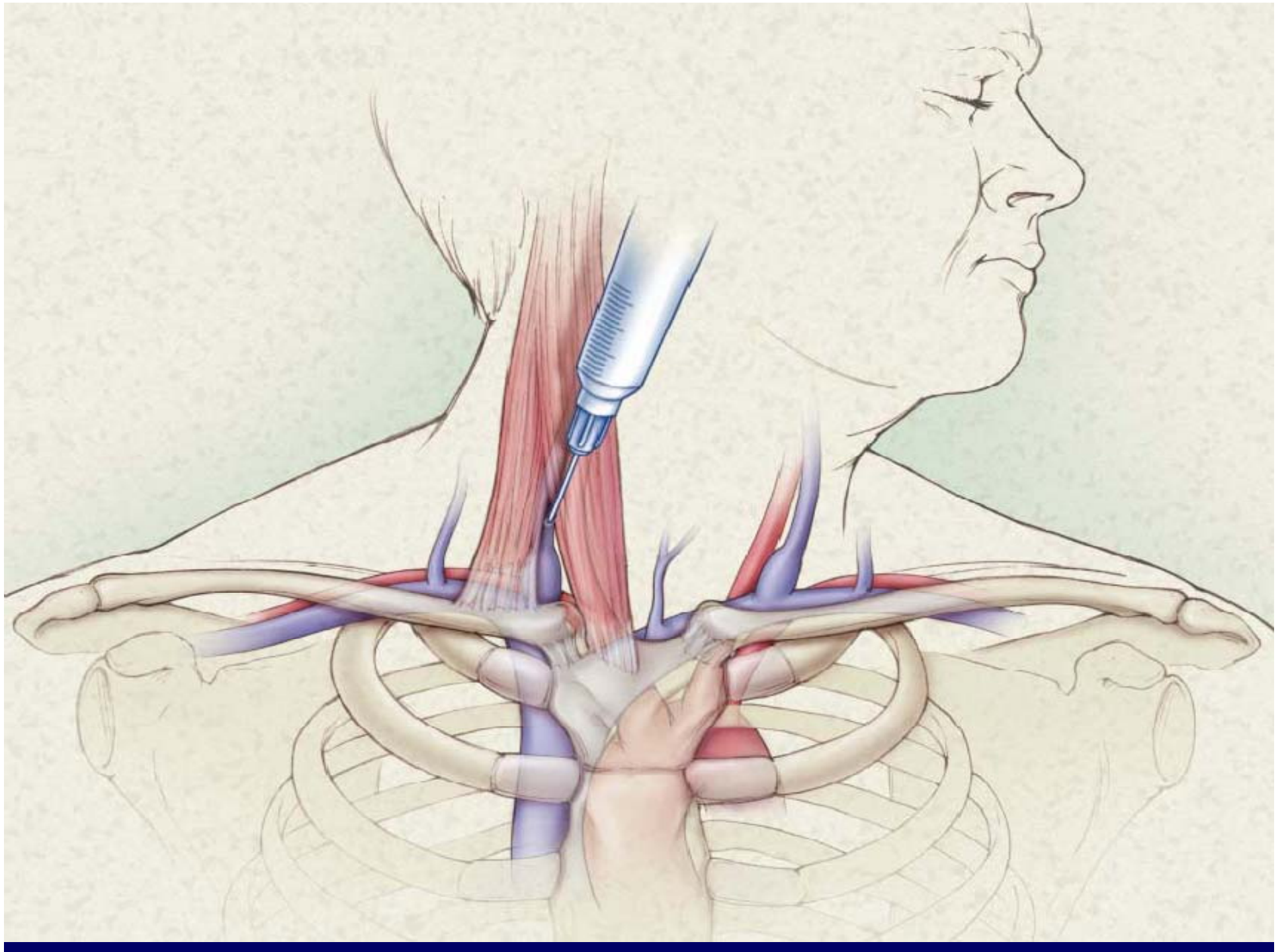
- Monitoring of central venous pressure
- Long-term intravenous antibiotics & other medication
- Long term parenteral nutrition
- Chemotherapy
- Apheresis
- Frequent blood draws
- Dialysis

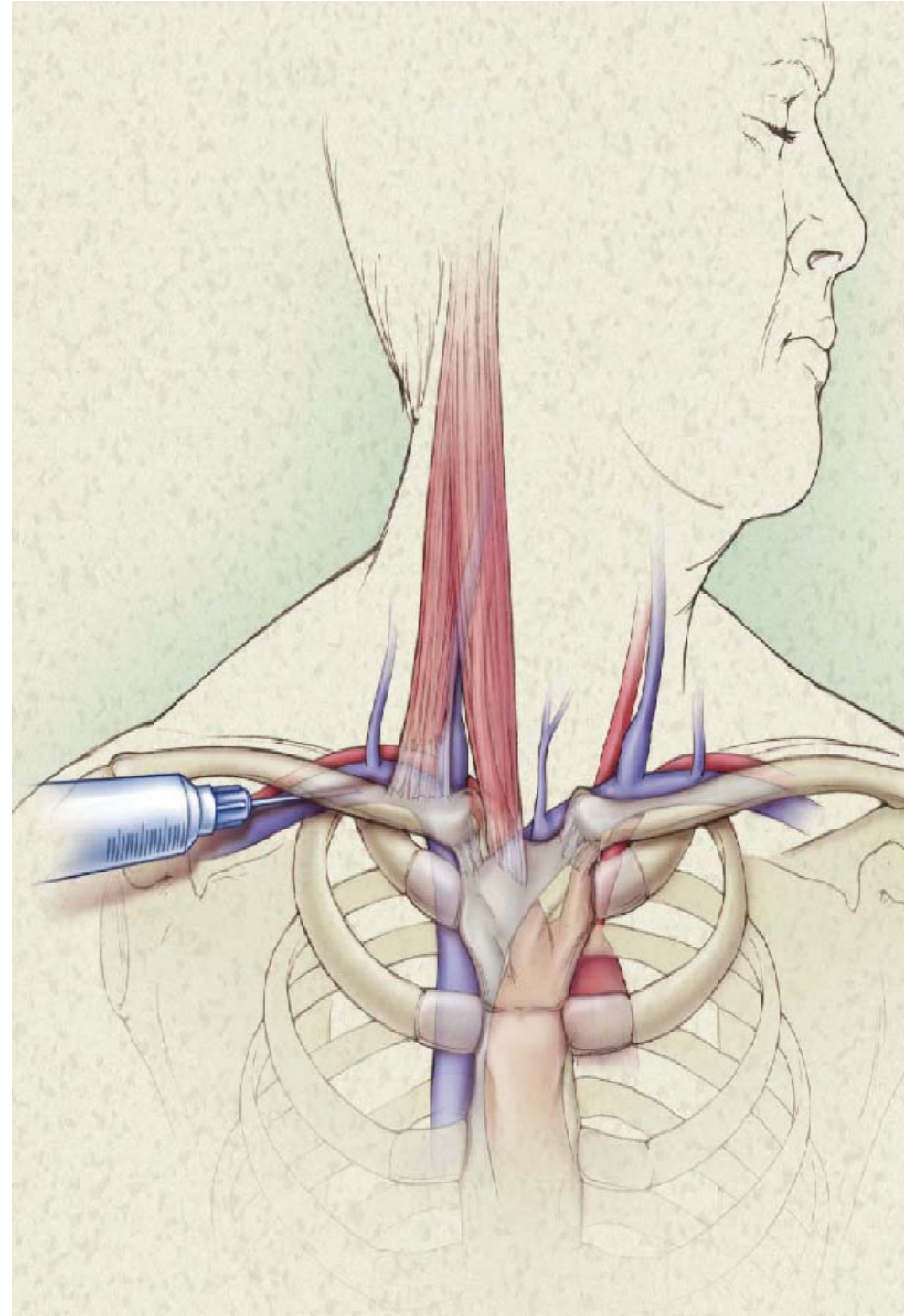
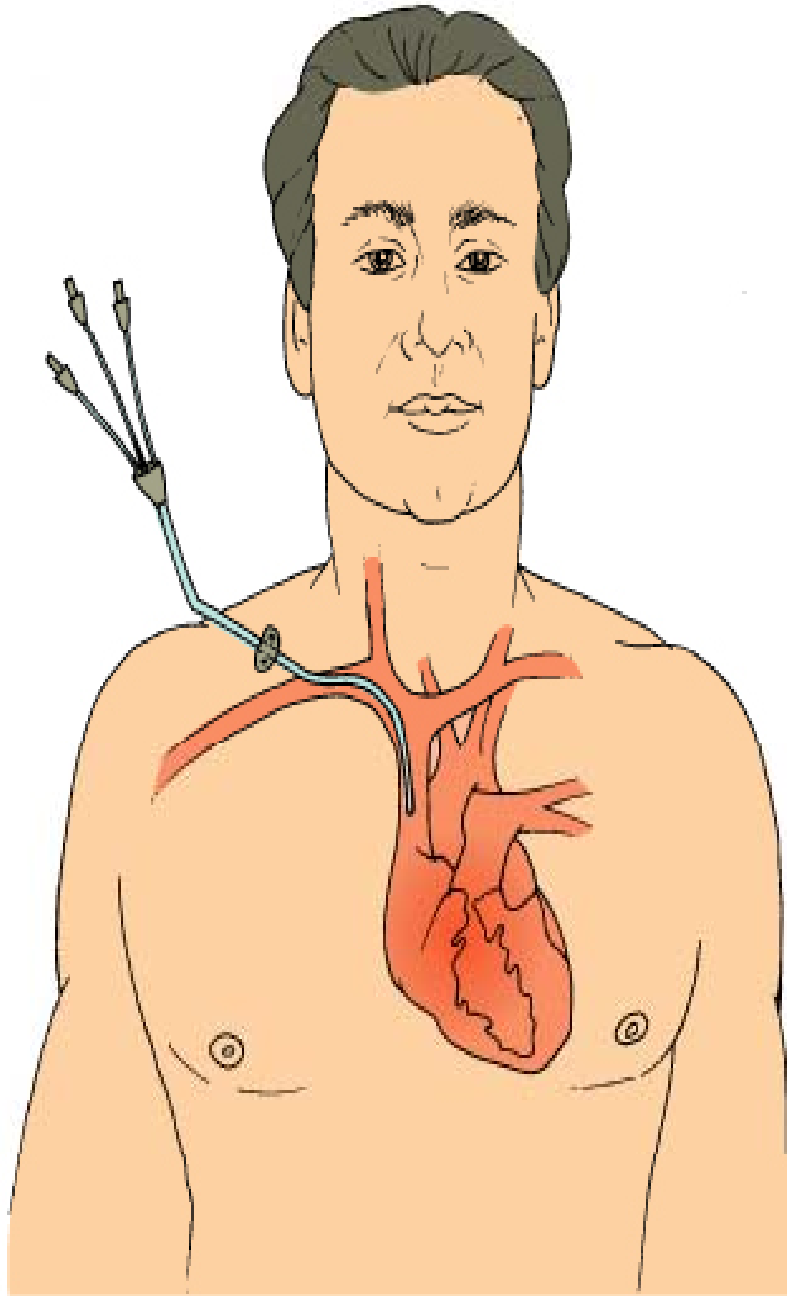


# WHICH CENTRAL VEIN TO CANNULATE

- Subclavian vein
- Internal jugular vein
- Femoral vein
- Antecubital vein

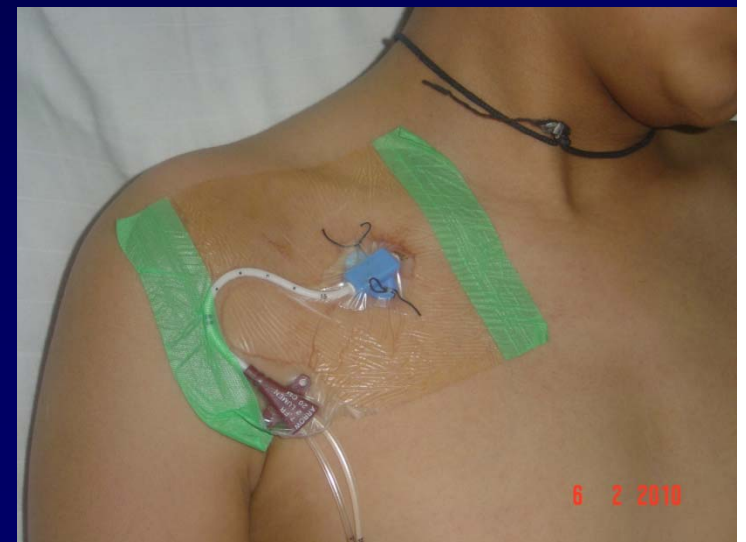






# COMPLICATIONS

- Pneumothorax
- Infection
- Haemorrhage
- Blockage
- Air embolism
- Leakage
- Line breakage



# STUDY

## Objective:

- To determine the safety of central venous lines in patients undergoing chemotherapy and BMT for various hematological disorders at AFBMTC

## Material & Methods:

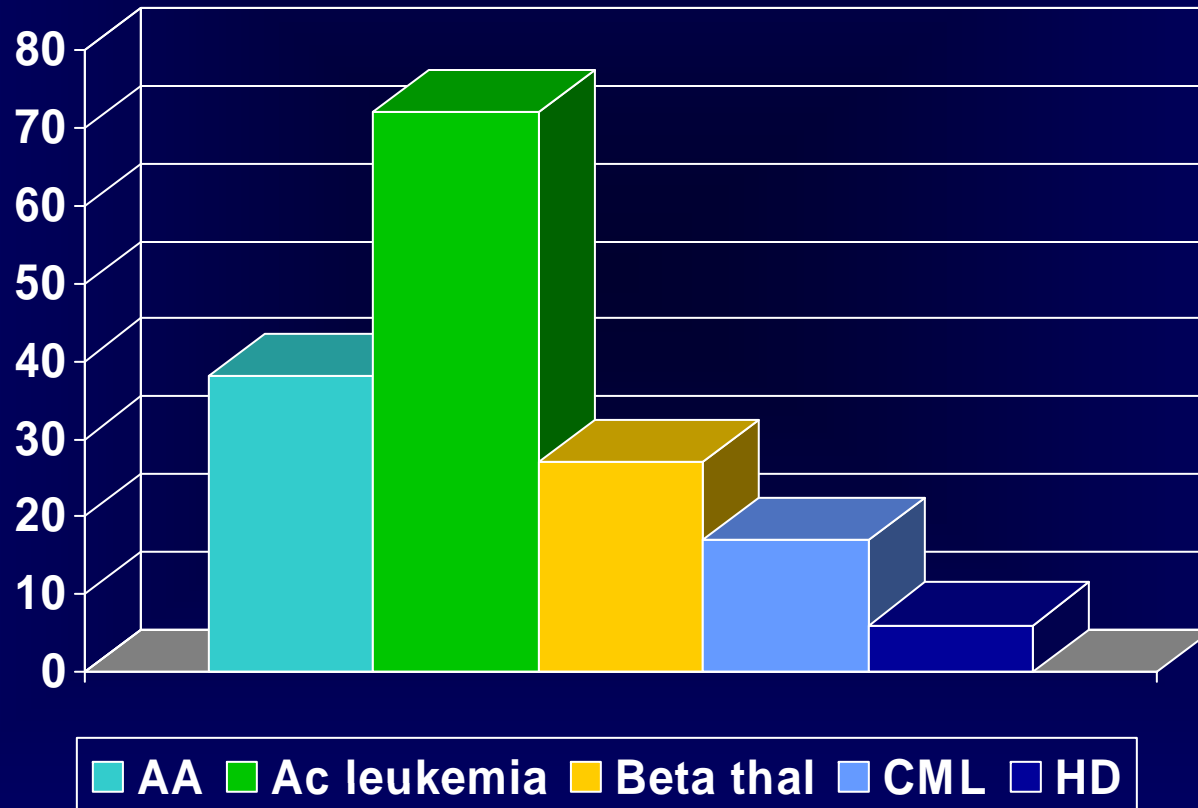
- A total of 160 patients who had CV line placement for different indications at AFBMTC were included in the study
- All the observations were written in a specifically designed proforma
- Data collected in the form of variables was analysed in SPSS version13

# INDICATIONS FOR CENTRAL VENOUS ACCESS

| Indication             | Number of patients |
|------------------------|--------------------|
| Bone marrow transplant | 62                 |
| Chemotherapy           | 73                 |
| Venous Access          | 20                 |
| ATG                    | 05                 |

# DISEASE DISTRIBUTION

n=160



# INSERTION SITE OF CENTRAL LINE

| Site                  | Number of patients |
|-----------------------|--------------------|
| Left Side             | 65                 |
| Right Side            | 95                 |
| Subclavian vein       | 119                |
| Internal jugular vein | 40                 |
| Femoral vein          | 01                 |

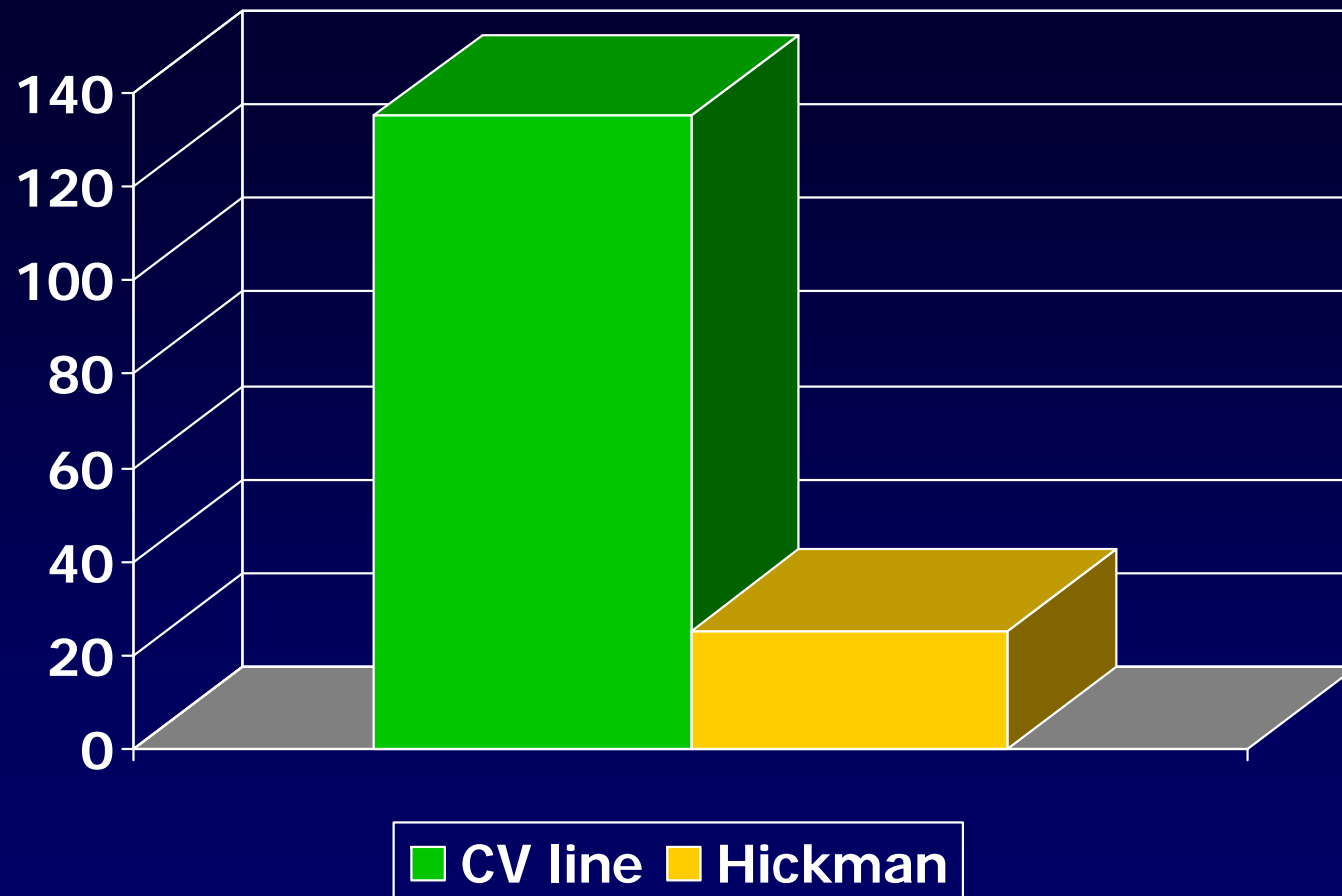
## **TYPE OF ANAESTHESIA & NUMBER OF ATTEMPTS**

| <b>Type of Anaesthesia</b> | <b>Number of Patients</b> |
|----------------------------|---------------------------|
| <b>Local</b>               | <b>91</b>                 |
| <b>General</b>             | <b>69</b>                 |

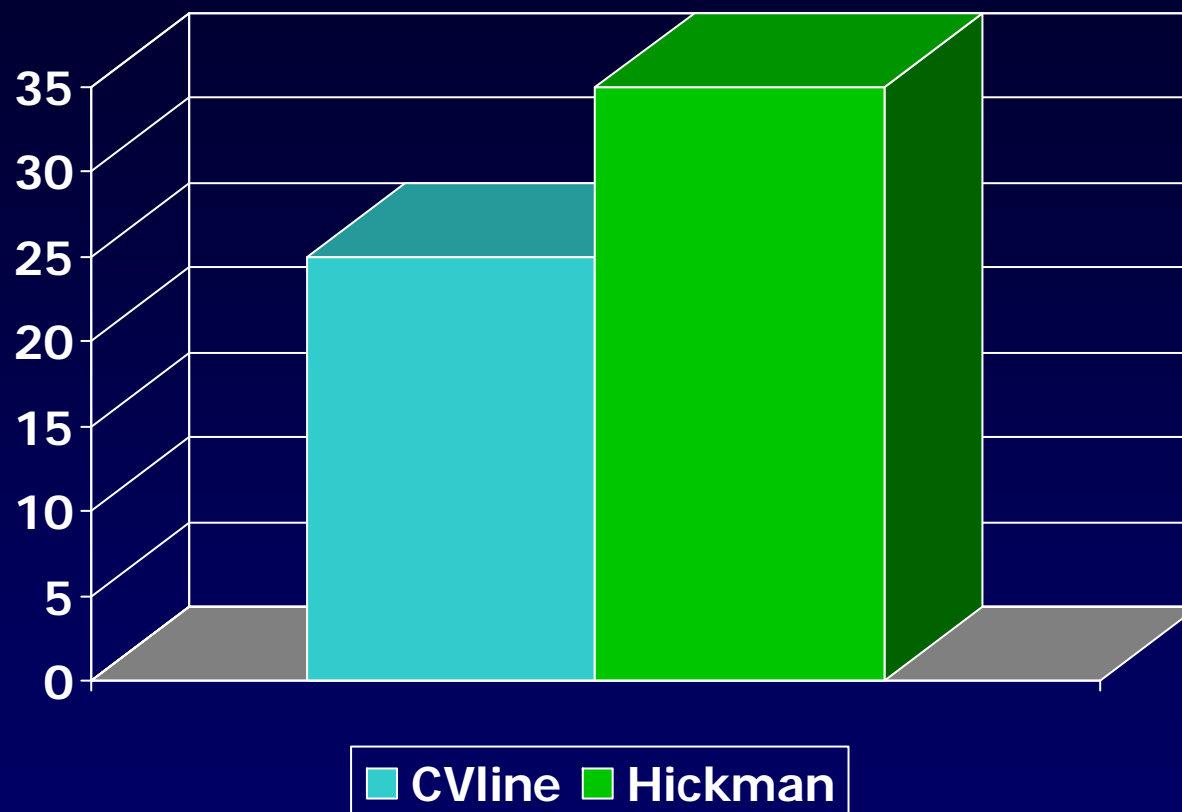
  

| <b>Number of Attempts</b> | <b>Number of Patients</b> |
|---------------------------|---------------------------|
| <b>One</b>                | <b>120</b>                |
| <b>Two</b>                | <b>38</b>                 |
| <b>Three</b>              | <b>02</b>                 |

# TYPE OF CENTRAL VENOUS ACCESS

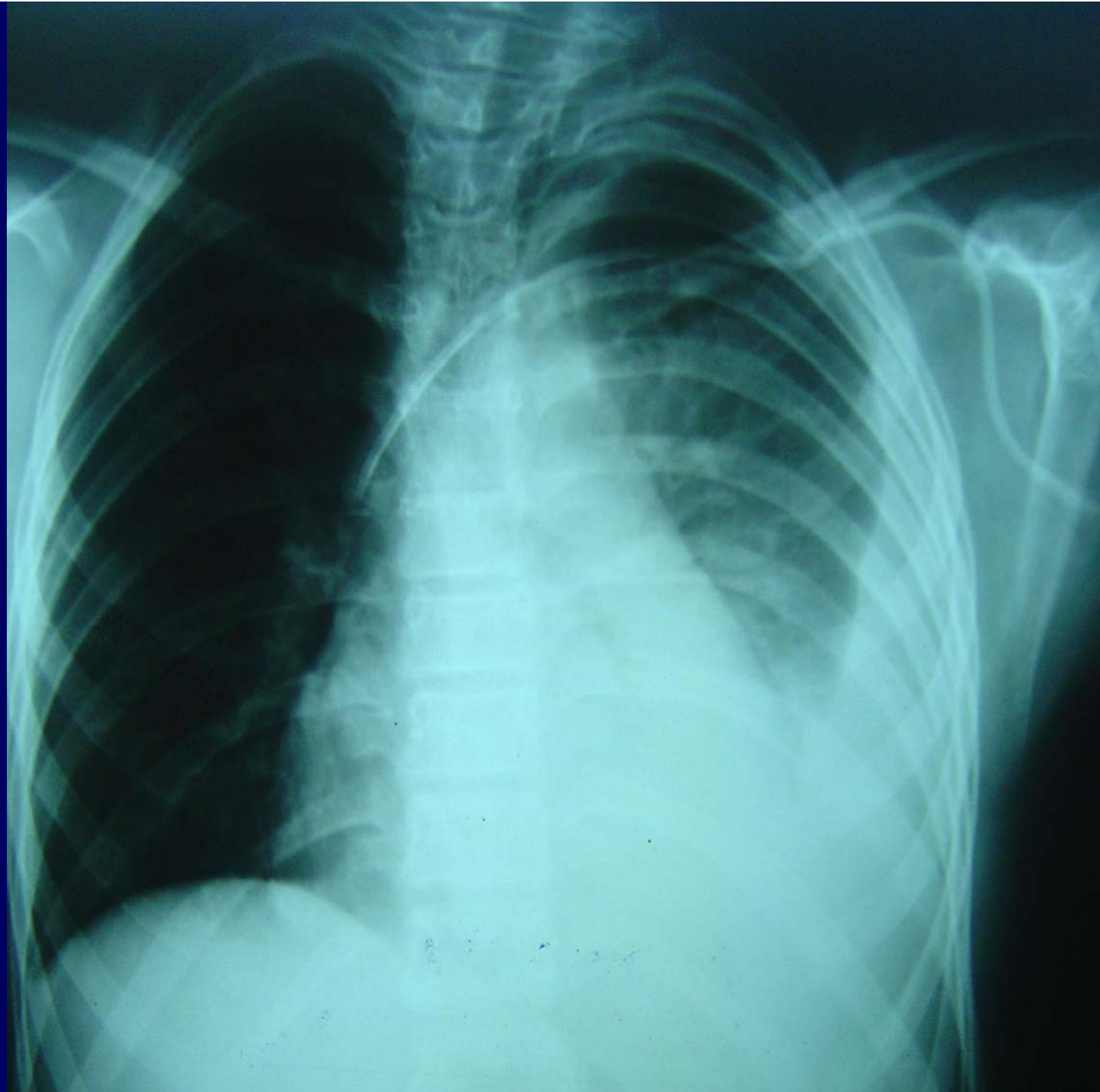


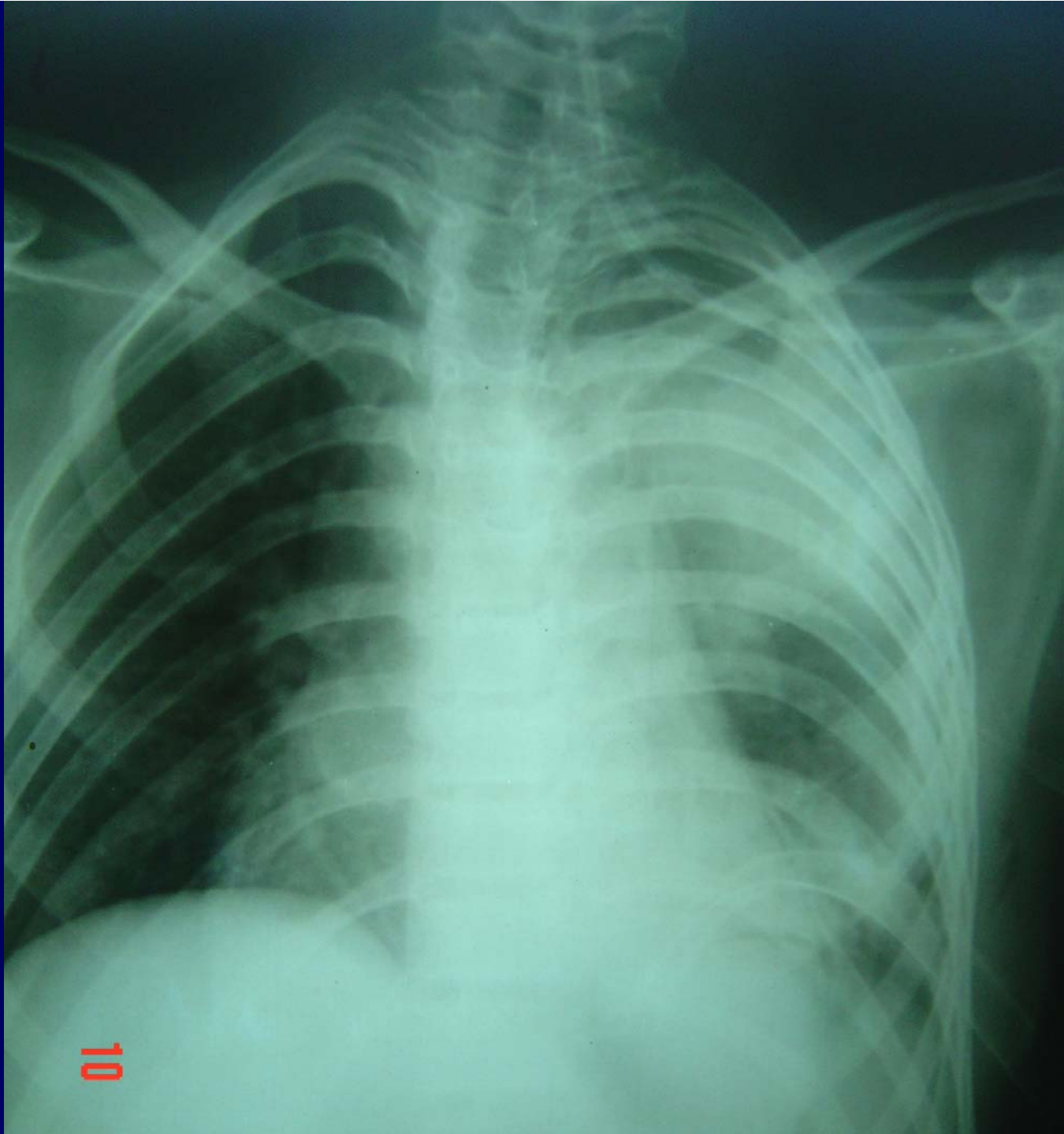
# MEAN CATHETER LINE DAYS



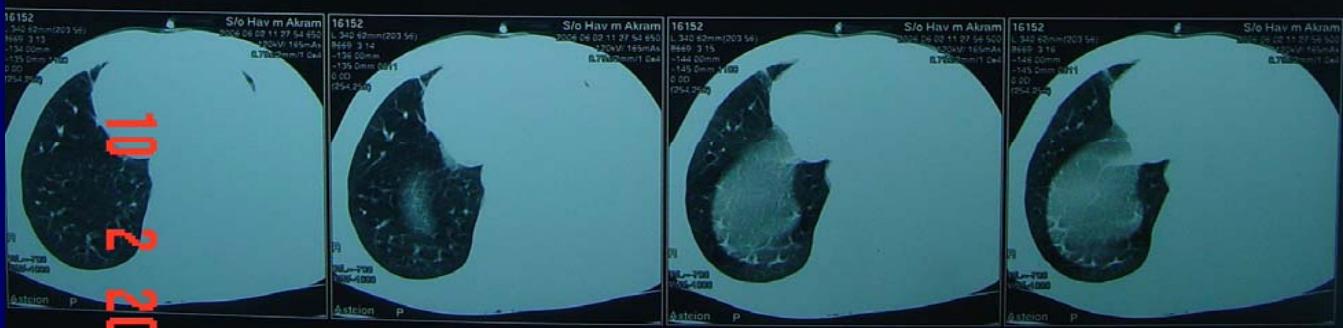
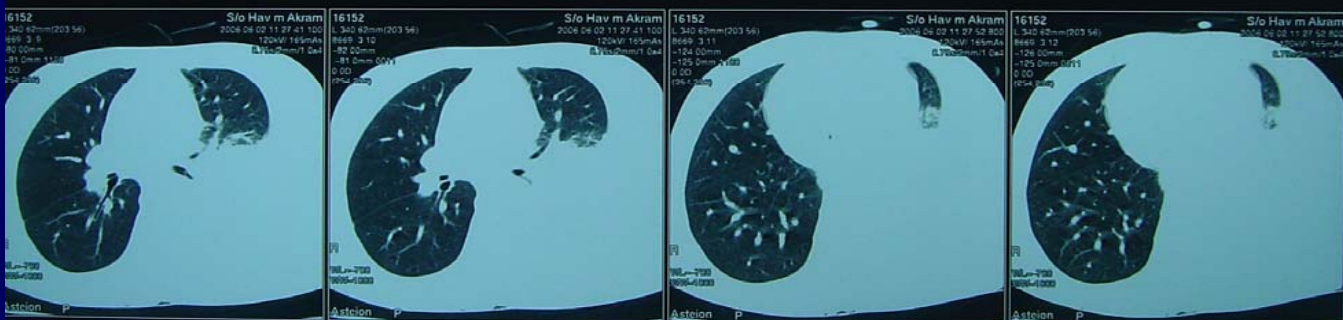
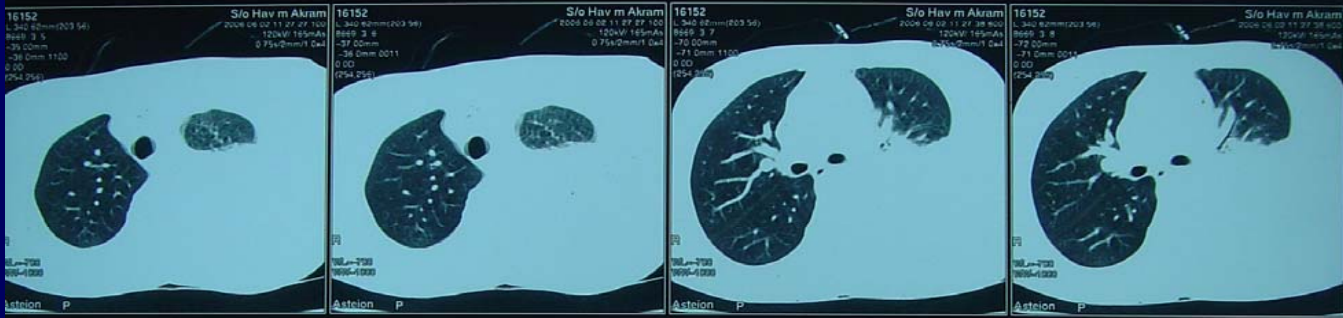
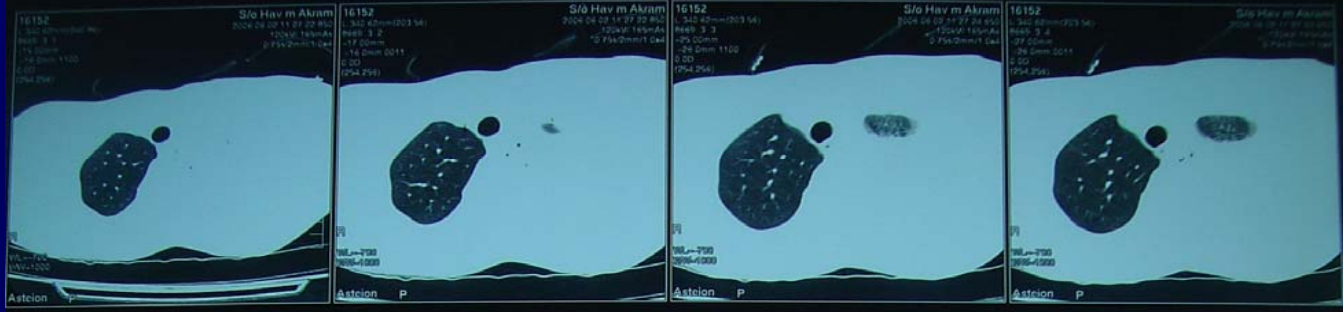
# COMPLICATIONS

- CV line infection 20
- Blockage 05
- Malposition 02
- Leakage 04
- Insertion site infection 03
- Pneumothorax 01
- Hemorrhage 02
- Accidental removal 04
- Catheter embolism 01





10



10  
2  
20

# CULTURE RESULTS

- **CV LINE FLUID CULTURE**

Positive in **13** patients

- **CV LINE TIP CULTURE**

Positive in **07** patients

- **ORGANISMS**

Staphylococcus aureus **07**

Pseudomonas **05**

KleibSELLa **03**

Acinetobacter **02**

Enterobacter **02**

Candida **01**



## REASONS OF REMOVAL

| ROR              | Disch/<br>death | Block      | Prov<br>line inf | Accid      | Others      |
|------------------|-----------------|------------|------------------|------------|-------------|
| CV line<br>(135) | 59%<br>(79)     | 3%<br>(04) | 9%<br>(12)       | 2%<br>(03) | 27%<br>(37) |
| Hickman<br>(25)  | 16%<br>(04)     | 4%<br>(01) | 32%<br>(08)      | 4%<br>(01) | 44%<br>(11) |
| Total            | 83              | 05         | 20               | 04         | 48          |

## CONCLUSION

Placement of both tunneled and non-tunneled central venous catheter is a safe procedure and can be managed in transplant and intensive care facility with acceptable rate of complications provided staff is adequately trained in safe CV line handling

# TAKE HOME MESSAGE

## CARE OF CENTRAL VENOUS CATHETER

- Aseptic non-touch technique
- Hand hygiene/washing
- Wear gloves
- Frequent cap change
- Proper Heparin flushing
- Monitor signs of local induration/infection
- Avoid local ointments
- Remove line when no longer required



THANK YOU