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ROLE OF ULTRASOUND IN EVALUATION OF CHEST IN CRITICALLY ILL PATIENTS OVER A CHEST X RAY

Radiodiagnosis

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ABSTRACT

Chest imaging is used in critically ill patients to know the underlying lung pathology as it is a matter of life or death in these patients if these pathologies are missed. Bedside chest ultrasound is increasingly utilized in critically ill patients. **METHOD :** This study aims at evaluating the role of Ultrasonography in diagnosing lung pathologies compared to a Chest Xray in critically ill patients. The study was conducted with 60 critically ill patients at the Dhiraj General Hospital. **RESULT :** Out of 60 patients it had been found that on Ultrasound 40 patients have pleural effusion out of which 27 patients have clear fluid while the 7 patients had fluid with internal echoes and remaining 6 had fluid with internal septations.The remaining 20 patients have following pulmonary pathologies - 4 patients had pneumothorax , 10 patients had consolidation and remaining 6 were normal. **CONCLUSION:** USG provides an interesting alternative to the Chest Xray in evaluating such patients. In addition to playing a crucial role in diagnosis of thoracic lesions, it also acts as a competent tool in therapeusis. USG may be a complimentary tool to Chest Xray.

KEYWORDS

INTRODUCTION

Chest imaging is used in critically ill patients to know the underlying lung pathology as it is a matter of life or death in these patients if these pathologies are missed. Bedside chest ultrasound is increasingly utilized in these patients.The imaging modalities used are portable chest x ray or CT scan but they have their limitations. In these patients the complete or partial opacification of lungs is not uncommon and it causes difficulty in the diagnosis, besides sometimes there will be a confusion arises between consolidation and pleural effusion.

These poses serious risk in procedure like pleural tapping if there is no pleural effusion it introduces the patient to risk of pneumothorax. Therefore further evaluation is needed like the CT scan of thorax , but main problem with CT scan is the transportation of these patients which most of the time are unstable. USG provides a stimulating alternative to the traditional Chest X-ray in evaluation of such patients.

AIMS AND OBJECTIVES

- To study the role of USG in diagnosing thoracic lesions in critically ill patients over Chest X-rays.
- To study the efficiency of USG in diagnosing pleural effusion and differentiating the type of pleural fluid present.

MATERIAL AND METHOD

- This study aims at evaluating the role of Ultrasonography in diagnosing lung pathologies compared to a Chest X-ray in critically ill patients. The study was conducted with 60 critically ill patients at the Dhiraj General Hospital.

SELECTION OF PATIENTS:

INCLUSION CRITERIA:

- Only those patients who were willing to participate in study were included.
- Critically ill patients showing haziness on Chest Xray were selected in this study.
- Critically ill patients showing minimal pleural effusion on Chest Xray were also included in the study.
- Sample size is of 60 patients.

EXCLUSION CRITERIA:

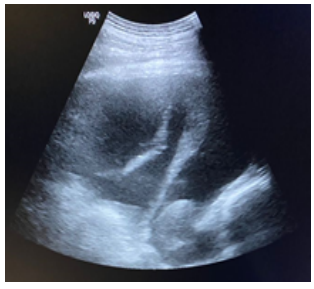
- All patients unwilling to participate were excluded from this study.

In my study, it was found out that out of a total of 60 patients showing haziness on chest Xray, the following results were obtained on USG

CASE 1 :

1

Chest X-ray shows complete opacity of the left lung field.

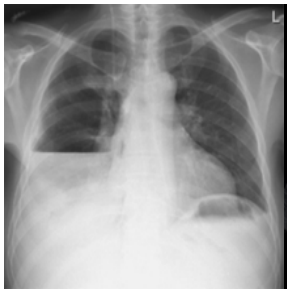


2

USG shows collapse of the left lung and pleural effusion.

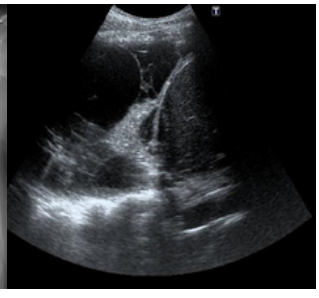
Out of the 40 cases of pleural effusion the following was the type of effusion seen:

CASE 2 :



1

1. Chest X-ray showing development of a right-sided empyema within the patient.



2

2. USG shows an outsized right pleural effusion with multiple, thick septae which suggests tuberculous effusion, one among the most typical causes of this type of pathology.

RESULT

Diagnosis	**USG**	**Chest Xray**
Pleural Effusion	40	32
Pneumothorax	4	3
Consolidation	10	8
Normal	6	17
Characteristic of fluid	**No. of Patients**	
Clear Fluid	27	
Fluid with Internal echoes	7	
Fluid with Internal septations	6	

DISCUSSION

- Thoracic ultrasound has several advantages over conventional radiographic imaging of the chest, including :
- absence of radiation
- better portability
- real-time imaging
- ability to perform dynamic imaging
- Acute respiratory disorders which are amenable to diagnosis with ultrasound are:
- Pleural effusion
- Alveolar consolidation
- Interstitial syndrome
- Pneumothorax

CONCLUSION

Chest X-ray is often the most commonly asked investigation for evaluating lung diseases in a critically ill patient admitted in ICU. But a supine AP Chest Xray view is often inadequate in offering detailed information about the lung diseases and falls short of contributing to the patient care. USG provides an interesting alternative to the conventional Chest Xray in evaluating such patients. In addition to playing an important role in diagnosis of thoracic lesions, it also acts as a competent tool in therapeusis. Far from being conflicting and competitive, it is a complimentary tool to Chest X-ray.

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