



SIGNS OF THORACIC LESIONS ON CT AND COMPARISON OF DIAGNOSIS WITH FINAL DIAGNOSIS BASED ON HISTOPATHOLOGY

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ABSTRACT

More number of cases in the hospital than any other has been admitted with lung pathologies. Today as India is turning from agriculture major country to an Industrial one the onus of burden has been laid on cost effective ways to diagnose the lung pathologies in an time effective manner. Even though the histo-pathology is considered to be the gold-standard in diagnosing the lung pathologies, the CT and many newer methods has been studied in detail to save the patients valuable time and money and also to lessen the morbidity. This study puts in an effort to understand the signs of thoracic lesions that is appreciated in a CT and then compare it with the final diagnosis with the help of histopathology.

KEYWORDS : Thoracic, Lesions, CT, Histopathology.

INTRODUCTION:

Thoracoscopy, mediastinoscopy and thoracotomy were once considered to be the cornerstones in the diagnosis as well as the treatment in the dreaded lung pathologies. These methods farly replaced by FNAC which may be CT guided or not. The accuracy and the minimally invasive techniques are replacing the conventional methods. More number of cases in the hospital than any other has been admitted with lung pathologies. Today as India is turning from agriculture major country to an Industrial one the onus of burden has been laid on cost effective ways to diagnose the lung pathologies in an time effective manner. Even though the histo-pathology is considered to be the gold-standard in diagnosing the lung pathologies, the CT and many newer methods has been studied in detail to save the patients valuable time and money and also to lessen the morbidity.

The incidence of malignant disease of the pulmonary system has an average of 40% once the lung pathologies has been diagnosed.¹ Thus the need of the hour is quick diagnosis and quick treatment. Other common pulmonary pathologies include pulmonary nodules, hamartomas, metastases, infarcts, vascular malformations, focal inflammatory masses and lipid pneumonia etc. in decreasing order of frequency.²

A single pulmonary nodule is defined as round opacity that measures smaller than 3 cm in diameter and is completely surrounded by parenchyma and is not associated with lymphadenopathy, lung collapse, or pneumonia. Lung lesions greater than 3 cm in size are defined as lung masses.³ Pulmonary nodule is noted on up to 0.2% of chest radiographs.³ Bronchogenic carcinoma is the commonest cancer in men and in women it comes after breast, colon and skin cancers. This is caused due to smoking and the much lesser cause is attributed to industrialization.

Metastatic lung diseases are due to the spread of lesions from a far of sight and can be diagnosed on CT.^{4,5,6}

This study puts in an effort to understand the signs of thoracic lesions that are appreciated in a CT and then compare it with the final diagnosis with the help of histopathology.

AIMS AND OBJECTIVES:

To understand the signs of thoracic lesions that are appreciated in a CT and then compare it with the final diagnosis with the help of histopathology.

MATERIALS AND METHODS:

The study was done in the Department of Radio-diagnosis in Great Eastern Medical School and Hospital. The duration of the study is for

a period of 18 months from September 2017 to April 2018.

Sixty cases who attended the Medicine OPD were identified and the CT was taken after taking appropriate precautions. CT based biopsy was then taken and the specimen was sent to the Department of Pathology. The CT diagnosis was compared to the Histopathological report and then statistical analysis was done to understand the signs of thoracic lesions that are appreciated in a CT.

INCLUSION CRITERIA:

- Patients with thoracic lesions referred from the Department of General Medicine for CT guided core biopsy, fine needle aspiration cytology or drainage.

EXCLUSION CRITERIA:

1. Inadequate breath-holding.
2. Bleeding disorders.

The nature of the lesions on CT was noted and then the specimen was collected using FNAC/CNB.

METHODS OF STATISTICAL ANALYSIS

All the statistical analysis was done using SPSS software 2015. California.

RESULTS:

Table 1: Mean age of the population:

	Mean	Std. Deviation
age	42.54	9.62

Table 2 - CT evaluation of thoracic lesions.

TOTAL NUMBER	BENIGN	MALIGNANT	INDETERMINATE
60	41	18	1

Table 2 - Pathology evaluation of thoracic lesions.

TOTAL NUMBER	BENIGN	MALIGNANT	INDETERMINATE
60	48	12	NIL

Table 3: Test for Significance for benign lesions

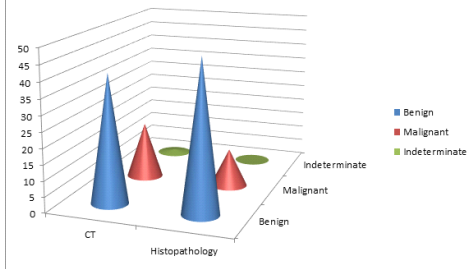
TOTAL	X-Value	P-value (<0.05)
41	0.625	0.0016

This is significantly different.

Table 3: Test for Significance for malignant lesions

TOTAL	X-Value	P-value (<0.05)
18	0.648	0.0014

This is significantly different.

Graph 1:**DISCUSSION:**

The mean age of the population in our study was 42.54 years with 9.62 years of the standard deviation. According to CT image diagnosis forty one were found to be benign, eighteen were considered malignant and one was indeterminate. According to the pathological reports forty eight were benign, twelve were malignant and not even a single specimen was indeterminate.

When compared in the benign lesions there was significant difference in the diagnosis ability of Ct when compared to that of the present gold standard. When compared in the malignant lesions there was significant difference in the diagnosis ability of Ct when compared to that of the present gold standard also. This study shows that even though the CT is considered to be a modern revolution, in the diagnosis Department there is a time to get even close to the gold standard method.

The diagnosis based on CT has to be confirmed by the histopathology and presently CT can be a gold standard for screening. Image guided thoracic interventions are the result of advancements in cross-sectional imaging. CT is the most commonly used imaging modality for thoracic interventions. These minimally invasive thoracic interventions like CT guided transthoracic lung biopsy and transthoracic fine needle aspiration cytology have become very popular for the diagnosis and management of thoracic lesions and hence more invasive procedures such as thoracoscopy, mediastinoscopy and thoracotomy can be avoided.⁷

The training of the radiologists is also needed to successfully identify the lesions and diagnose as close as possible to the actual pathologies. The radiologists should be trained to identify the different pathologies of the lungs and should often exercise with the Department of Pathology and then an attempt should be made to compare with the actual pathologies also.

CONCLUSION:

The diagnosis based on CT has to be confirmed by the histopathology and presently CT can be a gold standard for screening.

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