Histopathological Profile Of The Bronchogenic Carcinoma Among Saurashtra Region Of Gujarat

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Abstracts: Background: Bronchogenic carcinoma is a malignant neoplasm of the lung arising from the epithelium of the bronchus or bronchiole. The bronchogenic carcinoma is classified as Squamous cell carcinoma, Small cell carcinoma, Adenocarcinoma, Large cell Carcinoma and Adeno-squamous carcinoma. Methodology: 50 patients of known bronchogenic carcinoma from the P.D.U. Genral hospital and Medical College were included in the study; 48 patients were investigated as Fine Needle Aspiration Cytology for histopathological classification. Results: The commonest bronchogenic carcinoma was squamous cell carcinoma (42%) followed by adenocarcinoma (20%), small cell carcinoma (4%), adenosqumaous cell carcinoma (4%) and large cell carcinoma (2%). Conclusion: The histopathological examination of bronchogenic carcinoma cases is helpful for the management of the patients. [Pandey A NJIRM 2016; 7(2):77-80]

Key Words: Bronchogenic carcinoma, Fine needle aspiration cytology, small cell carcinoma.

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Introduction: Bronchogenic carcinoma is one of the most common fatal illness in the world. Recent developments in interventions have made possible to identify the lesion in its early stages. [1,2]

Bronchogenic carcinoma is a malignant neoplasm of the lung arising from the epithelium of the bronchus or bronchiole.[2,3]Bronchogenic carcinoma includes carcinoma of bronchial as well bronchiolar origin. [2]
The Revised, World Health Organisation (WHO) classification formulated in 1981, is the most frequently useful scheme for categorising lung tumour. [4]

Histopathological classification of lung cancer 1981 (WHO)[4]

1. Squamous cell carcinoma of epidermoid carcinoma
2. Small cell carcinoma: Oat cell carcinoma, intermediated cell type, combined oat cell type
3. Adenocarcinoma: Acinar adenocarcinoma, Papillary adenocarcinoma, Bronchiolo-alveolar carcinoma, solid carcinoma
4. Large cell Carcinoma: Giant cell carcinoma, clear cell carcinoma
5. Adeno-squamous carcinoma

Smoking and industrial environment are common causes of bronchogenic carcinoma and in Industrial area like Saurashtra where smoking is prevalent, smoking aggravates the incidences of bronchogenic carcinoma.[5,6]

This study was conducted to assess the histopathological profile in identified bronchogenic carcinoma patients of Saurashtra region.

Material and Methods: This cross-sectional was conductedduring April 2006 to September 2006PandeetDeendayalUpadhyay General Hospital and Medical College after permission of the institutional ethical committee and ethical review board.

Patient was defined as the known patients of Bronchogenic carcinoma diagnosed and confirmed by any means of the investigations like imaging, bronchoscopy, Mediastinoscoy, Thoracoscopy, Trans bronchial biopsy, sputum cytology, Fine Needle aspiration cytology or Pulmonary function test. Subjects vising the medicine and tuberculosis and chest disease outdoor clinic and/or indoor patients at the P.D.U. General Hospital and Medical College during April 2006 to September 2006 were included in the study after informed and written consent of the patient. 50 systemic randomly selected patients were included in the study.

Patients were aspirated using 22G disposable syringe guided by the ultrasonography. Sample was aspirated in 10 ml syringe from periphery and centre of the lesions. Immediate Smears were prepared; smears were air dried for May-Grünwald-Giemsa staining and fixed in methanol for hematoxylin and eosin staining.

After the aspiration cytology patients were kept in observation for 6-12 hours to rule out pneumothorax and other complications. The cytopahological classification was done as per the guideline of the world health organisation. [6] Minimum 25 areas of the smear for the patient were observed to classify in the histopathological group.

Data was analysed by the Epi info 7™ software, statistical significance was considered at the 95% confidence interval and p value < 0.05.

Results: 50 patients were included in the study out of the 44 were male and 06 were females; the minimum age of the patient was 35 and maximum age of the patient was 90 years.

Table 1: Diagnostic Interventions To Confirm The Suspected Lesion

Intervention	Number of patients (n=50)			Total
	Positive	Negative	Suspected	
Sputum Cytology positive	04 (8%)	45 (90%)	01 (02%)	50
Ultra sonography and X-ray	33 (66%)	08 (16%)	-	41
Pleural fluid examination	02 (20%)	08 (80%)	-	10
Bronchoscopy examination	09 (45%)	11 (55%)	-	20
Fine Needle aspiration cytology	29	04	-	33
USG Guided	13 (76.5%)	04 (23.5)	-	17
CT Scan Guided	08 (100%)	00 (00%)	-	08
Lymph node	08 (100%)	00 (00%)	-	08

Table 1 shows out of 50 patients all patients undergone sputum cytology examination. 33 patients (66%) were diagnosed by imaging techniques. 33 (66%) patients were undergone previously for fine needle aspiration cytology, out of which 29 patients were confirmed by the FNAC.

Table 2: Histopathological Type Of Bronchogenic Carcinoma

Histopathological type	Number of patients		
	Male	Female	Total (%)
Squamous cell carcinoma	16	04	20 (41.66%)
Nonspecific	13	00	13 (27.08%)
Adenocarcinoma	08	02	10 (20.83%)
Small Cell Carcinoma	02	00	02 (04.16%)
Adenosqumous carcinoma	02	00	02 (04.16%)
Large cell carcinoma	01	00	01 (02.08)
Histopathology not done	02	00	-

Table 2 shows the histopathological profile of the patients. 48 patients enrolled in the study were undergone USG guided FNAC by standard method, 2 patients did not give the consent for the procedure.Most common type was squamous cell carcinoma (20 out of 48 patients); least type was the large cell carcinoma (1out of 48 patients). Small cell carcinoma was identified in 2 patients.

Discussion: In this study 50 known cases of bronchogenic carcinoma during April 2006 to September 2006 were enrolled.

Out of the 50 patients 25 patients had already undergone lung mass FNAC previously and diagnostic yield of the patients was 84% (21 out of 25). [Table 1]

Table 3: Comparison Of The Positive Diagnostic Yield Of The Lung Lesion

Author	Year	Positive diagnostic yield
Munsi et al [7]	1995	96.15%
Gupta et al [8]	1998	81.6%
Gouliamos et al [9]	2000	100%
Wallace et al [10]	2002	88.00%
Arslan et al [11]	2002	88.9%
Present study	2006	84%

Table 4: Comparison Of Types Of Bronchogenic Carcinoma

Author	Year	Squamous Cell carcinoma (%)	Adenocarcinoma (%)	Small cell Carcinoma (%)	Large cell Carcinoma (%)	Undifferentiated carcinoma (%)
Suri et al [12](n=62)	1991	10.00	78.00	-	4.00	8.00
Munsi et al [7](n=130)	1995	26.92	25.00	7.69	5.76	32.69
Gupta et al [8] (n=279)	1998	44.68	21.28	14.90	19.15	-
Gouliamos et al [9] (n=64)	2000	50.34	30.56	8.68	7.45	-
Wallace et al [10] (n=61)	2002	44.46	39.67	7.89	6.57	-
Parate et al [11] (n= 60)	2003	42.31	34.82	11.54	11.54	-
Present study (n=48)	2006	41.66	20.83	4.16	2.08	27.08

Squmous cell carcinoma [Table 2, 4]: In the study 41.66% patients were diagnosed as squamous cell carcinoma; that is equivalent to study of Parate et al [11], Gupta et al [8]andWallace et al [10].

Adenocarcinoma [Table 2, 4]: In the present study 20.83% patients were classified as adenocarcinoma, which is lower than the study of Suri et al [12], Wallace et al [10],Parate et al [11], and comparable to the study of Gupta et al [8].

Small cell carcinoma[Table 2, 4]: In the present study 4.16% patients were of small cell carcinoma type, which is lower than the stdy of Munshi et al [7], Gupta et al [8], Gouliamos et al [9], Wallace et al [10], Parate et al [11].

Large cell carcinoma [Table 2, 4]: One case (2.08%) was diagnosed as the large cell carcinoma which is also lower than the previous studies.

Adenosqumaous carcinoma [Table 2]: In the present study 2 patients were diagnosed as adenosquamous carcinoma.

Nonspecific carcinoma [Table 2, 4]: 27.08% patients were of nonspecific variety; Munsi et al 7 found 32.69% and Suri et al [10]found 8% patients in nonspecific variety.

Conclusion: Clinical features, radiology, bronchoscopy and fine needle aspiration cytology are very much helpful for detecting the bronchogenic carcinoma. Histopathological examination is necessary for proper management of the bronchogenic carcinoma. The commonest bronchogenic carcinoma was squamous cell carcinoma (42%) followed by adenocarcinoma (20%), small cell carcinoma (4%), adenosqumaous cell carcinoma (4%) and large cell carcinoma (2%).

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Conflict of interest: None
Funding: None
Cite this Article as: Vasava L, Daxini A, Pandey A. Histopathological Profile Of The Bronchogenic Carcinoma. Natl J Integr Res Med 2016; 7(2): 77-80