

Histopathological Spectrum of Malignant Lesions in a Tertiary Care Hospital in Vizianagaram, India

Kanchana Priyadarshini Venkatiah Narayan¹, Srilakshmi Polavarapu²

^{1,2} Department of Pathology, Maharajah's Institute of Medical Sciences, Vizianagaram, Andhra Pradesh, India.

ABSTRACT

BACKGROUND

Cancer is the second most common cause of deaths after cardiovascular disorders in the world. In India lakhs of people die due to cancer every year. Many of them do not have access to health care system and those who have access to health care system often reach for help in advanced stage. Incidence of cancer varies from country to country and within the country from region to region. It depends on the environment, lifestyle, and diet. The present research was undertaken to study the incidence of histopathological spectrum of malignant lesions in the local region of northern part of Andhra Pradesh.

METHODS

The present study is a retrospective study of 42 malignant cases from 159 neoplastic biopsies received over a period of 12 months from January 2019 to December 2019.

RESULTS

Among 42 malignant cases, 27 were females and 15 were males with a male to female ratio of 1:1.8. the most common age group of presentation with malignancies was 61 - 70 years. Youngest patient was 22 years. Cancer of the cervix was the commonest cancer in females in this region of Andhra Pradesh. Among men it was lung cancer.

CONCLUSIONS

In the present study, it was observed that the most common malignancy was lung cancer followed by cervical cancer. Squamous cell carcinoma was the most common histopathological type among them. As cancer incidence is more after 50 years this group should be targeted for health education and screening so that early diagnosis and timely treatment can be given. This reduces cancer mortality.

KEY WORDS

Spectrum of Malignancies, Squamous Cell Carcinoma

Corresponding Author:

*Dr. Kanchana P.V.N,
Flat Number 302, Sunflower Block B,
Singapore City, Vizianagaram,
Andhra Pradesh, India.
E-mail: kanpras@gmail.com*

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BACKGROUND

Cancer has been a bane of human population for many years. With changing lifestyle, improved longevity and better control of infectious diseases, non-communicable diseases like cancer have emerged as major health problems worldwide.¹ At a global level in 2012, cancer accounted for 14.1 million new cases, 8.2 million cancer deaths & 32.6 million people living with cancer (within five years of diagnosis). In 2011, it has become the 7th leading cause of DALY's lost (5.4 %) in South-East Asian region.² According to the 2015 estimates of the World Health Organization (WHO), out of 172 countries, cancer is the first or second cause of mortality in 91, and the third or fourth cause of mortality in 22 countries before the age of 70 years.³ In a recent hospital-based cross-sectional study carried out from November 2013 to October 2014, breast cancer was most common in younger age group and liver cancer more among older age group.⁴

In India, the National Cancer Registry Programme (NCRP) was introduced in 1982, under the auspices of the Indian Council of Medical Research (ICMR). It provides data on incidence rates of different cancers.⁵ In India during the year 2008, it was estimated that 9.4 lakh new cancer cases occurred with an incidence rate of 98.5 per lakh population and 6.3 lakhs died of cancer with a mortality rate of 68 per lakh population.²

Globally lung, stomach and colorectal cancers are the leading cancers in males, whereas breast, lungs and stomach cancer constitute top three leading cancers in females. In Indian population, all types of cancers have been reported. The top five cancers among men are lung, head and neck region (mouth, tongue and larynx), colorectum and oesophagus while among women-breast, cervix, ovary, oral cavity and uterine cancer are most common.¹

Many do not have access to health care system and those who have access to health care system often reach for help late in advanced stage. Incidence of cancer varies from country to country and within the country from region to region. It depends on environment, social factors, genetic factors, lifestyle, and diet. Knowing the frequency and type of cancers in a particular region and the common age group affected helps in charting the target group for health education and screening of cancers. This helps in early diagnosis and timely treatment of cancer. This is very important in decreasing the death of patients and thus cancer-causing deaths can be kept in check. In this way cancer mortality can be decreased.

Keeping this in mind the present research was undertaken to study the incidence of histopathological spectrum of malignant lesions in the local region of Northern part of Andhra Pradesh, to learn the type and frequency of different types of cancers in this part of Andhra Pradesh.

METHODS

This was a retrospective study conducted in the Department of Pathology, Maharajah's Institute of medical sciences, Nellimarla, Vizianagaram located in the Northern part of Andhra Pradesh. A total of 159 cases of neoplasms were received in 1 year's duration from January 2019- December

2019. The sample size was taken based on the convenience of the study. Out of this, 42 cases were diagnosed as cancers on histopathology and were selected for this study.

Permission from superintendent, MIMS hospital, Department of Pathology and from ethics committee, MIMS were obtained to conduct this study. A proforma was used to collect data such as age, sex and place of residence. Percentages for parameters such as age distribution to gender wise, system wise, organ wise were recorded. A detail history was taken, diagnosis, primary site, morphology of neoplastic lesions and histopathological examination of all the specimens were done during the study period. We have not received specimens of liver, heart, mediastinal masses, as we don't have super specialty, these operative procedures are not done. The basis of diagnosis was histological examination of the biopsy material. Histopathological study of all the malignant lesions done over a period of 12 months (January 2019 to December 2019) were included in this study.

Statistical Analysis

All analyses were performed using SPSS (IBM Corp.) software. Age and gender were expressed as mean $\pm$ standard deviation and numbers and percentages. Categorical variables were expressed as numbers and percentages.

RESULTS

In the present study out of 159 neoplastic biopsies, 42 cases were given histopathological diagnosis of malignancy. Among 42 cases, 27 were females and 15 were males with female to male ratio of 1.8:1. Malignancies were most common in 7th decade (35.7 %).

Age	Number of Cases	Percentage
21 - 30	02	4.76
31 - 40	03	7.14
41 - 50	13	30.95
51 - 60	09	21.43
61 - 70	15	35.71
Total	42	35.71

Table 1. Age Distribution

Site	Number of Cases	Percentage
Oral cavity	2	4.76
Central nervous system	2	4.76
Respiratory tract	13	30.95
Thyroid	1	2.38
Breast	2	4.76
Cervix	7	16.66
Uterus	2	4.76
Gastrointestinal tract	4	9.52
Skin	6	14.29
Soft tissue and bone	3	7.14
Total	42	100

Table 2. Site Distribution

DISCUSSION

In general, assessment of cancer problem in a particular hospital or locality is based on the cancer diagnoses per year in the concerned hospital. Among 159 neoplastic lesions received in our study, 117 cases were benign lesions, and 42 cases were given histopathological diagnosis of malignancy. Benign neoplasms were more common than malignant

lesions and the findings in our study was also similar to the common findings. Age distribution of malignancies explained in Table 1 with most common age group being 7th decade. Advancing age is an important risk factor for cancer. Cancer is common in the elderly though no age is exempted from its occurrence. In our study the minimum age of patient with malignancy was 22yr old female and maximum age was 68yr old male. In general cancers are more common in males compared to females. The incidence of malignancies in present study was higher in females (27) with male(15) to female ratio of 1:1.8

In a recent study, in males, lung cancer is the most commonly diagnosed malignancy followed by prostate and colorectal cancer. Among females, breast cancer is the most commonly diagnosed malignancy and the leading cause of cancer death.⁶ In the present study, most commonly diagnosed malignancy is lung followed by cervix cancer with 16.6%.

Among males the common site involved is lung and gastrointestinal tract whereas in females the common sites affected in descending order of frequency are cervix and lung. The distribution of malignancies based on site depicted in Table 2.

Respiratory tract cancer including bronchus, lung and pleura were found in a total of 13 cases. Among them were squamous cell carcinoma, adenocarcinoma, carcinoid and small cell carcinoma. Adenocarcinoma were more commonly found in 9 cases, followed by squamous cell carcinoma in 2 cases and one case each of carcinoid and small cell carcinoma. The youngest patient was a 22-year female diagnosed with adenocarcinoma of lung and oldest was 65-year-old. Lung cancer was common in the age group 61 - 70 years. Most of them presented with difficulty in breathing.

In case of all gastrointestinal malignancies the most common site affected was oesophagus diagnosed with squamous cell carcinoma in middle third and adenocarcinoma in the lower third. This was followed by gastric cancer in which adenocarcinoma was the most common histological type. The other site involved in gastrointestinal tract was ileum by infiltrating poorly differentiated adenocarcinoma. This occurred in 47-year-old lady who presented with intestinal obstruction.

Malignancies of the skin comprised 14.2 % of all the malignancies with male to female ratio of 1:2. Most of them were squamous cell carcinoma. The other type found was malignant melanoma. All cases of carcinoma of oral cavity were squamous cell carcinomas-well differentiated squamous cell carcinoma sub type.

From central nervous system (CNS) two cases of Glioblastoma Multiforme were reported. This is the commonest malignant tumour occurring in the adults. One case was a right parietal lobe mass in a 55-year-old male, the other was a mass from frontal lobe in a 63-year-old female.

Among the malignancies in the study, squamous cell carcinoma (SCC) was the most common histological type diagnosed (38.09 % with 37.5 % occurrence) at cervical site. Most of the cervical cancer cases were reported in the age group of 30 - 60 years, with predominance at 41 - 50 years of age. Majority of cases of SCC were moderately differentiated subtype. Among SCCs, were keratinizing type, and in non-keratinizing type were large cell type and small cell type.

The other sites where SCC occurred were lung, oral cavity, oesophagus and skin. The next common site to be involved in the female genital tract was uterus. Two cases of adenocarcinoma of endometrium were reported. The age group affected was 51 - 70 years. Both the cases were of endometrioid type well differentiated. In females after genital tract, breast was affected by cancer. In the present study two cases of infiltrating ductal carcinoma were reported.

A case of papillary carcinoma with Multinodular goitre (MNG) was seen in the thyroid in a 22-year female. Her presenting complaint was swelling in front of the neck. Papillary carcinoma of thyroid is known to occur in the young age like the case in the current study.

Site	Ravi Mehrotra et al. ³	Mehmet Tahtabasi et al. ⁴	Sanjay Khandekar et al. ¹	Present Study
Oral cavity and salivary glands	11.8	5.9	23	4.76
Central nervous system	0	1.6	0	4.76
Respiratory tract	3.2	10.2	4	30.95
Thyroid		5	7.55	2.38
Breast	6	7.3	19.55	4.76
Cervix	6.1	6.7	8	16.6
Uterus		2.5	3.55	4.76
Gastrointestinal tract	22.7	23.1	9.77	9.52
Kidney and urinary tract	2.1	5.3	3.11	0
Skin	3.2	2.8	4	14.2
Soft tissue and bone	0	5.3	2.66	7.14
Testis	0	0.5	2.66	0
Ovaries	0	1.5	4.88	0
Prostate	2.4	4.3	3.11	0
Others	42.5	18	4.16	0.17

Table 3 Comparison of Distribution of Malignancies with Other Studies

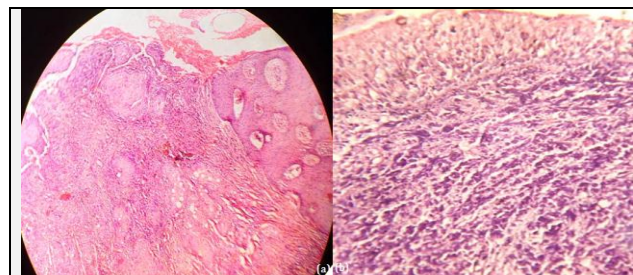


Figure 1 (a). Squamous Cell Carcinoma Skin; (b). Small Cell Carcinoma Lung

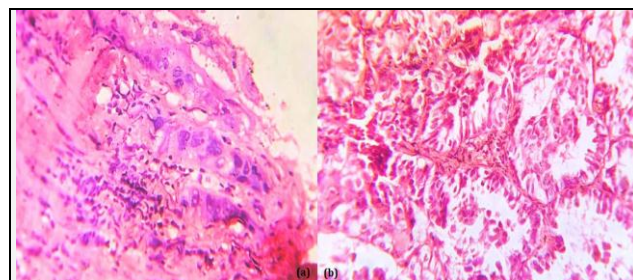


Figure 2 (a). Squamous Cell Carcinoma Lung (b) Adenocarcinoma Lung

Comparison with other studies was explained in Table 3 with Ravi Mehrotra et al. showing higher number of gastrointestinal tract malignancies and Sanjay Khandekar et al. showing high incidence of breast malignancies.

In the present study, we see highest incidence of malignancies in respiratory tract followed by cervix. Based on this, we see that there is need of cancer screening programs like sputum examination, endoscopic biopsies for both males and females and cervical pap smear examination in females

for the population in the age group of 50 and above in this part of Andhra Pradesh.

CONCLUSIONS

Among males, the common site involved was lung and gastrointestinal tract whereas in females the common sites affected in descending order of frequency were cervix and lung. Squamous cell carcinoma was the most common histopathological type among all the cancers at different sites. Cancer of cervix (squamous cell carcinoma) was common among women in this study. As cancer incidence is more after 50 years, this group should be targeted for health education and screening so that early diagnosis and timely treatment can be given.

This reduces cancer mortality. Based on this current study we see that there is a need for cancer screening programs like sputum examination, endoscopic biopsies for both males and females and cervical pap smear examination in females for the population in the age group of 50 and above in this part of Andhra Pradesh.

Data sharing statement provided by the authors is available with the full text of this article at jemds.com.

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