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GROSS AND MICROSCOPIC STUDY OF GASTRIC CANCER LESIONS AFTER SURGICAL EXPLORATION OF THE PATIENTS ATTENDING A TERTIARY CARE HOSPITAL IN NORTH INDIA

Surgery

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ABSTRACT

BACKGROUND: The incidence of gastric cancer in India is low compared to developed countries, though there are certain geographical areas (Southern part and northeastern states of country) where the incidence is comparable to high-incidence areas of world. There are not sufficient publications from North India, discussing the pattern of lesions seen in Stomach cancer. Thus Aim of current study was to study the pattern of neoplastic lesions of stomach in kashmiri population

METHODOLOGY: A prospective study was conducted in the tertiary care hospital for a period opf 2 years. The specimens were collected from subjects diagnosed as Stomach carcinomas for both Gross and histopathological examination

RESULTS: Fifty consecutive patients of stomach carcinoma were enrolled. Most common variant was ulceroproliferative in both sexes (59.4% in males and 84.6% in females and the least common variant was diffuse (8.1% in males and 0% in femalesMicroscopoc examination ofthe lesions show that most common variant was poorly differentiated (48% in all) and the least common was mixed differentiation (4%)

CONCLUSION: Ulceroproliferative lesion is the most common variant of Stomach cancer.

KEYWORDS

Neoplastic lesions, Ulceroproliferative,Stomach

INTRODUCTION

Gastric cancer is the fifth most common cancer among males and seventh most common cancer among females in India.[1] The aggressiveness of the disease and need for improvement in therapeutic options is discerned by the fact the gastric cancer is the second most common cause of cancer death globally.[2] The high incidence of local and distant recurrence even in patients with completely resectable gastric cancer indicates the systemic spread of cancer Gastric cancer remains one of the most common causes of death from cancer worldwide, especially in our part of the world. In Kashmir, the incidence rates for gastric cancer have been estimated at 36.7/100000 per year in men and 9.9/100000 per annum in women, respectively [3]. There is a worldwide variation in the incidence of gastric cancer. A high incidence of gastric cancer has been reported from Southeast Asia, most commonly from Japan, China, and South Korea, and this has been attributed to the consumption of preserved food containing carcinogenic nitrates.[2] The incidence of gastric cancer in India is overall less compared to the worldwide incidence. The age-adjusted rate (AAR) of gastric cancer among urban registries in India is (3.0–13.2) compared to the worldwide AAR (4.1–95.5).[4-7] Worldwide and more so in the developed world, there has been a decline in the incidence of gastric cancer and this has been attributed to improved food hygiene, sanitation, and food preservation techniques. However, this declining trend has not been seen in certain parts of India.[4] The regional variation in incidence and presentation can be ascertained by the fact that gastric cancer in South Indian males has been reported to be more common and occurring a decade before their North Indian counterparts.[8] Differences in some dietary pattern and use of tobacco and alcohol have been considered as potential risk factors. In a case–control study from Trivandrum, a high consumption of rice and chili, and consumption of high-temperature food were found to be independent risk factors for gastric cancer in multivariate analysis.[9] In a study from Hyderabad comparing 94 gastric cancer patients and 100 normal age- and sex-matched controls, smoking ($P<0.01$) and alcohol ($P<0.05$) were significantly associated with gastric cancer.[10]

The incidence of gastric cancer in Mizoram has been reported to be the highest in India. The AAR in males and females has been reported at 50.6 and 23.3, respectively.[11] Hospital-based data from Mizoram have shown gastric cancer to be the most common cancer accounting for 30% of all cancer cases. The male-to-female ratio was 2.3:1; the median age for males was 58 years and that for female was 57 years.[12] The high prevalence of gastric cancer in Mizoram has been attributed to dietary and possibly some unknown genetic differences. In a case–control study from Mizoram among the cases, the risk of stomach cancer was significantly high in current smokers (odds ratio (OR), 2.3; 95% confidence interval (CI), 1.4–8.4).[13] Higher risks were seen for meiziol (a local cigarette) smokers (OR, 2.2; 95% CI, 1.3-9.3). Tuibur (tobacco smoke-infused water), used mainly in Mizoram, was associated with the risk of stomach cancer among current users in both univariate and multivariate models (OR, 2.1; 95% CI, 1.3–3.1. In another report from Chennai, alcohol consumption and use of pickled food were found independent risk factors for gastric cancer.[14] On the other hand, use of pulses was found to be offering a protective effect. Hospital-based data are prone to selection and referral bias and hence the above results need to be viewed with caution. In another hospital-based study from Kashmir, there was no association found between gastric cancer and Helicobacter pyloriinfection in 1314 patients.[15] Similar to Mizoram, the incidence was higher in males and the cancer occurred most commonly in the fifth decade of life. The most common site of tumor was the body of stomach (40.7%) followed by the pylorus (35.5%). In conclusion, the epidemiology of gastric cancer suggests that it is not a single disease or caused by a single factor, but a combination of genetic, sociocultural, and environmental factors in a given region dictates its presentation. Gastric cancer can broadly be classified as intestinal or diffuse as proposed by Lauren et al. based on histological findings.[2] It can also be classified according to the anatomic site as proximal (cardia, fundus, and gastroesophageal junction) and distal (pylorus). Interestingly, the incidence of proximal cancers is increasing in the developed world in concordance with the increase in esophageal cancers suggesting that these might have similar risk factors and pathologies.[2] H. pylori, a Gram-negative bacteria, is associated with gastric mucosal infection. In underdeveloped countries with poor hygienic conditions, 50-90% of the population is infected asymptomatically in childhood. H. pylori has been attributed to cause distal gastric cancers and it is believed that the overall decline in gastric cancers and more so distal cancers worldwide is due to reduction and eradication of H. pylori infection with improved sanitation.[16] However, it should be assumed that countries with a very high prevalence should have the highest incidence but this is not true as Asia and Africa although with a high incidence of H. pylori infection have a low incidence of gastric cancer. This Asian or African paradox suggests that H. pylori by itself cannot cause gastric cancer and various other factors are needed for causation.

(17] It is also believed that the poor study design and inaccuracies in techniques quantifying H. pylori may account for such paradoxical results. Various etiological factors including smoking, alcohol,

nitrates, and H. pylori have been proposed as causative factors for gastric cancer.

METHODS

This was a prospective study conducted on 50 patients in a tertiary care Hospital in North India. The study was conducted over a period of two years. All the relevant clinical information of all of these patients were collected . The specimen obtained after surgical exploration of patient were examined externally and then opened as per conventional method after overnight fixation by 10% formalin & processed as per convention method. All the slides had been routinely stained with H&E and histopathological examination conducted .

RESULTS

Fifty consecutive patients of stomach carcinoma were enrolled. Most common variant was ulceroproliferative in both sexes (59.4% in males and 84.6% in females and the least common variant was diffuse (8.1% in males and 0% in femalesMicroscopoc examination ofthe lesions show that most common variant was poorly differentiated (48% in all) and the least common was mixed differentiation (4%)

TABLE 1:GROSS FINDINGS OF STOMACH CANCER OF THE ENROLLED PATIENTS

MACROSCOPIC FEATURES	MALE	FEMALE	P-VALUE
Ulceroproliferative	22	11	0.1729
Polypoid	12	2	0.3030
Diffuse	3	0	0.5583

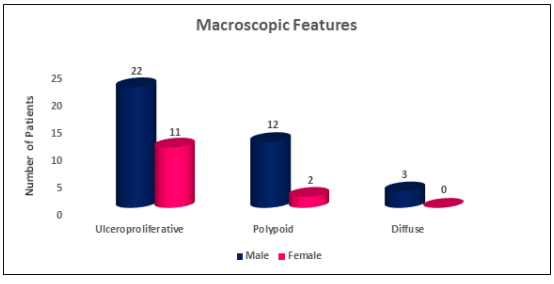
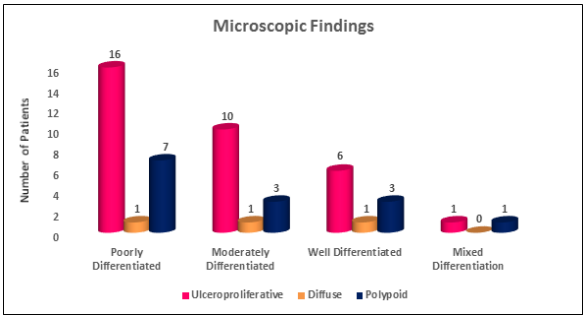


TABLE 2: MICROSCOPIC FEATURES OF STOMACH CANCER OF ENROLLED PATIENTS

MICROSCOPIC FEATURES	ULCEROPROLIFERATIVE	DIFFUSE	POLYPOID
Poorly differentiated	16	1	7
Moderately differentiated	10	1	3
Well differentiated	6	1	3
Mixed differentiation	1	0	1



DISCUSSION

In our study 50 patients underwent a diagnostic laparoscopy. Macroscopically the most common lesion was an ulceroprolife rativelesion (59.4% in males ;84.6% in females) and the least common variant was diffuse (8.1% in males & 0% in females). Similar observationswere made by Cassel and Robinson.(18)

On Endoscopic biopsy, the most common variant was poorly differentiated adenocarcinoma (48%) andthe least common was mixed differentiation(4%). Our findings are consistent with the study conducted by Kim et al.(19)

CONCLUSION

The most common lesion was an ulceroproliferativelesion (59.4% in males ;84.6% in females) and the least common variant was diffuse (8.1% in males & 0% in females)

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