

Gastric Cancer Profile in Subhimalayan Regions of Himachal Pradesh

Dr. Priya Dhora¹, Dr. Abhimanyu Patial², Era Sankhyayan³

¹Medical Officer at Civil Hospital Nagrota Bagwan (H. P), India

²Senior Resident, Department of Medicine at Dr Rajendra Prasad Govt. Medical College, Kangra at Tanda

³Medical officer, Department of Radiotherapy and Oncology at Dr. Rajendra Prasad Govt. Medical College, Kangra at Tanda
(Corresponding author)

Abstract: ***Introduction:** Upper gastrointestinal tract disorders are one of the most commonly encountered problems in clinical practice and are a leading cause of morbidity and mortality. A wide spectrum of disorders can affect gastrum, with inflammatory and neoplastic lesions being the most common. Endoscopy, in combination with biopsy plays an important role in timely diagnosis and early management. **Objectives:** To study the spectrum of gastric neoplastic lesions and its correlation with socio - demographic details. **Materials and Methods:** This was an observational study conducted at department of pathology, at Dr. RPGMC Tanda for duration of one year. A total of 263 gastric endoscopic biopsies were received and were routine processed and histopathological assessment was done. Thereafter, 20 biopsies diagnosed as neoplastic lesions were included in the present study. **Results:** Age of the patients varied from 41 - 90 years with male: female ratio of 4.7: 1. Out of 20 gastric endoscopic biopsies, 19 cases (95%) were of adenocarcinoma and 1 case (5%) was of signet ring cell carcinoma. **Conclusion:** Endoscopy guided biopsy is simple, safe, cost effective, day care procedure with less complication rates and gives direct visualization of pathological site. Most of the patients with gastric malignancy have vague symptoms or no symptoms in early stage and are often diagnosed only in advanced stage. Hence, endoscopy in combination with biopsy acts as a useful diagnostic tool for gastric lesions and has revolutionized the management of patients.*

Keywords: Gastrointestinal (GI) lesions, Neoplastic lesions, Dietary, Adenocarcinoma

1. Introduction

Gastric malignancies are a major cause of morbidity and mortality in the world. Globally, it is the second commonest site of cancer second to lung in male accounting for 7.36 million deaths worldwide. China leads with age adjusted incidence rate of 145.4 followed by USA with 43.4 in population based cancer registry worldwide“ (1) ”. Upper gastrointestinal tract is one of the most common sites for neoplasms, especially malignant tumors. Worldwide, gastric adenocarcinoma is the second most common cancer and carcinoma esophagus is the sixth leading cause of death” (2, 3) ”. In India, according to the National Cancer Registry, esophageal and gastric cancers are the most common cancers found in men, while esophageal cancer ranks third among women after carcinoma of breast and cervix” (4) ”. In the stomach, the great concern is to pick the early gastric lesions on histopathology of the gastric mucosal biopsies that does not extend beyond the mucosa or submucosa even though there may be lymph node metastasis in contrast to the invasive gastric carcinoma which extend beyond muscularis propia where the prognosis is poor” (5) ”. Most of the cases present to us in a stage when it is beyond any intervention. Henceforth, detection of malignancy is of utmost priority to facilitate early intervention in form of surgery and/or chemotherapy. Clinical examination, endoscopy, and histopathological examination have been the cornerstone of investigation of gastric malignancy. This study describes our experience with gastric neoplasms at the main teaching cum referral hospital in himachal at subhimalayan regions, with the inhabitants having special personal and dietary habits.

2. Methods and Materials

This was a hospital based observational study conducted in a tertiary care centre in the subhimalayan regions of Himachal Pradesh. The study comprised of 20 patients of gastric cancer, diagnosed out of 263 individuals subjected to upper gastrointestinal (GI) endoscopy over the period of one years at Dr. RPGMC Tanda. Patients whose clinical presentation warranted a diagnosis or exclusion of gastric cancer were selected for the study. Symptoms such as anorexia, weight loss of recent onset, persistent abdominal pain, postprandial fullness, dysphagia and history of upper GI bleed were considered suggestive of a possible gastric neoplasm. The clinical examination included degree of cachexia and anemia, abdominal mass and signs of gastric outlet obstruction. Histopathological processing was done by as per the routine histopathology processing protocol. The Haematoxylin and Eosin stained slides were examined and final histopathological diagnosis was performed.

3. Observations and Results

The study included 20 cases of gastric neoplastic lesions. The age of the patients varied from 41 to 90 years. The study showed a slight male preponderance with 17 (85%) male patients and 3 (15%) female patients. The most common presenting complaint for patients with gastric carcinoma presented with dyspepsia or anorexia. The commonest site of presentation of the gastric carcinoma was the antrum, followed by the fundus and then the body. On endoscopy, the commonest pattern of presentation of the gastric adenocarcinomas was an ulceroproliferative growth followed by infiltrative and polypoidal growths. Histology revealed adenocarcinoma (figure1) as the commonest type

(95%) and signet ring cell carcinoma (figure2) is being least common (5%).

4. Discussion

Gastric carcinoma is a frequent cause of morbidity and mortality throughout the world as well as in India. In present study, 20 were neoplastic lesion on histopathological examination, 19 cases revealed adenocarcinoma and one revealed signet ring cell carcinoma. Adenocarcinoma was the most common malignancy among neoplastic lesion. Our findings correlate well with the other studies. In our study adenocarcinoma was commonly observed in males with male: female ratio of 4.7: 1. This gender ratio favoring males could be reflecting of the fact that males are exposed to more risk factors than females similar to study of Hirachand et al and Krishanappa et al" (6, 7) ". Majority of gastric carcinomas arise from precursor lesions which take many years to develop. Secondly, there is a delay in diagnosis of gastric carcinoma due to lack of early symptoms. Early gastric carcinoma causes non - specific gastrointestinal complaints, such as dyspepsia, in only 50% of patients. Up to 90% of patients of gastric carcinoma in western countries who present with advanced carcinoma have more serious symptoms such as abdominal pain, bleeding, vomiting, or severe weight loss. Anjana M. L et al screened gastric malignancy cases and was seen in 28.8% cases. Among malignancies, one case was diagnosed as secondary gastric non - Hodgkin's lymphoma. This comprises of only 0.9% of gastric lesions. Most common site of involvement in gastric lesions was the gastric antrum followed by body of the stomach" (8)".

Incidence of gastric carcinoma is comparatively lower in india than in other countries. However, Pickled food, high rice intake, spicy food, excess chilly consumption, consumption of high - temperature foods and smoked dried salted meat have emerged as significant dietary risk factors in various parts of India. These practices are prevalent in subhimalayan regions of India where a higher frequency of gastric carcinoma cases are observed. Tobacco use in any form (chewing, smoking and drinking) was observed to increase the risk of esophageal cancer in subhimalayan regions of India as compared to gastric cancer" (9) ".

Sharma et al enrolled 17 cases which were diagnosed endoscopically as gastric carcinoma correlated histopathologically as gastric adenocarcinoma" (10) ". In the study conducted by Ujwala Bhanarkar analyzed 110 cases, 34 cases were of neoplastic.12 cases revealed squamous cell carcinoma and 22 cases revealed adenocarcinoma" (11) ".

Moreover, Common salt (NaCl) is a well known irritant of gastric epithelium and has been considered to be risk factor for gastric cancer. Further, N - nitroso compounds have been found in significant quantity in the dietary items like dried raw foods and red chillies consumed by the people of subhimalayan regions. In addition salt tea has been found to contain high amounts of N - nitrosopipelic acid and other

unidentified non - volatile N - nitroso compounds. The presence of N - nitroso compounds in the stomach has been incriminated as a possible etiological factor in the genesis of gastric cancer" (12)".

In conclusion, at present, it is not possible to give an exact etiology of the gastric cancer in the subhimalayan region. However, the peculiar geography, some special dietary habits with a possible familial predisposition and inflammatory condition with infections may have a bearing on its etiology. But, further studies are needed to find correlation between the possible etiological factors and the occurrence of this common neoplasm.

References

- [1] Nandi A, Biswas P, Kar M, Sinha S. Clinicopathological profile of gastric cancer in a tertiary care hospital in Eastern India: A prospective 2 year study. Clin Cancer Investigation J.2014; 3: 13 - 17.
- [2] Zhang XF, Huang CM, Lu HS, Wu XY, Wang C, Guang GX. Surgical treatment and prognosis of gastric cancer in 2613 patients. World J Gastroenterol.2004; 10: 3405 - 3408.
- [3] Enzinger PC, Mayer RJ. Esophageal cancer. N Engl J Med.2003; 349: 2241 - 2452.
- [4] Sivangamani K, Reddy B, Chandal R. Carcinoma of the stomach - A study of 200 cases. Indian J of Cancer.1974; 12: 437 - 443.
- [5] Evan MD, Craven JL, Murphy F. Comparison of early gastric cancer in Britain and Japan. Gut.1978; 19: 1 - 9.
- [6] Krishnappa R, Horakerappa MS, Mangala AK, Gouri M. A study on histopathologic spectrum of upper gastrointestinal tract endoscopic biopsies. Int J Medical Res Health Sci.2013; 2: 418 - 424.
- [7] Hirachand S, Sthapit RR, Gurung P, Pradhanang S, Thapa R, Sedhai M, Regmi S. Histopathological spectrum of upper gastrointestinal endoscopic biopsies. J BP Koirala Inst Health Sci.2018; 1: 67 - 74.
- [8] Anjana M. L and Yevoor K. Histopathological Spectrum of Upper Gastrointestinal Endoscopic Biopsies in a Tertiary care centre. Annals Pathol Lab Med.2021; 8: 112 - 117.
- [9] Dikshit R, Mathur G, Mhatre S, Yeole B. Epidemiological review of gastric cancer in India. IJPO.2011; 37: 1 - 9.
- [10] Sharma S, Makaju R, Dhakal R, Purbey B, Gurung RB, Shrestha R. Correlation between Endoscopic and Histopathological Findings in Gastric Lesions. Kathmandu Univ Med J.2015; 51: 216 - 219.
- [11] Bhanarkar U, Dash M. Histopathological Spectrum of Upper Gastric Endoscopic Biopsies: An Institutional Experience of Two Years, Retrospective Study. SAS J Med.2021; 7: 230 - 233.
- [12] Malik GM, Mubarak M, Kadla SA, Durrani H. Gastric Cancer Profile in Kashmiri Population with Special Dietary Habits. Diagnostic and Therapeutic Endoscopy.1999; 6: 83 - 86.

Figures

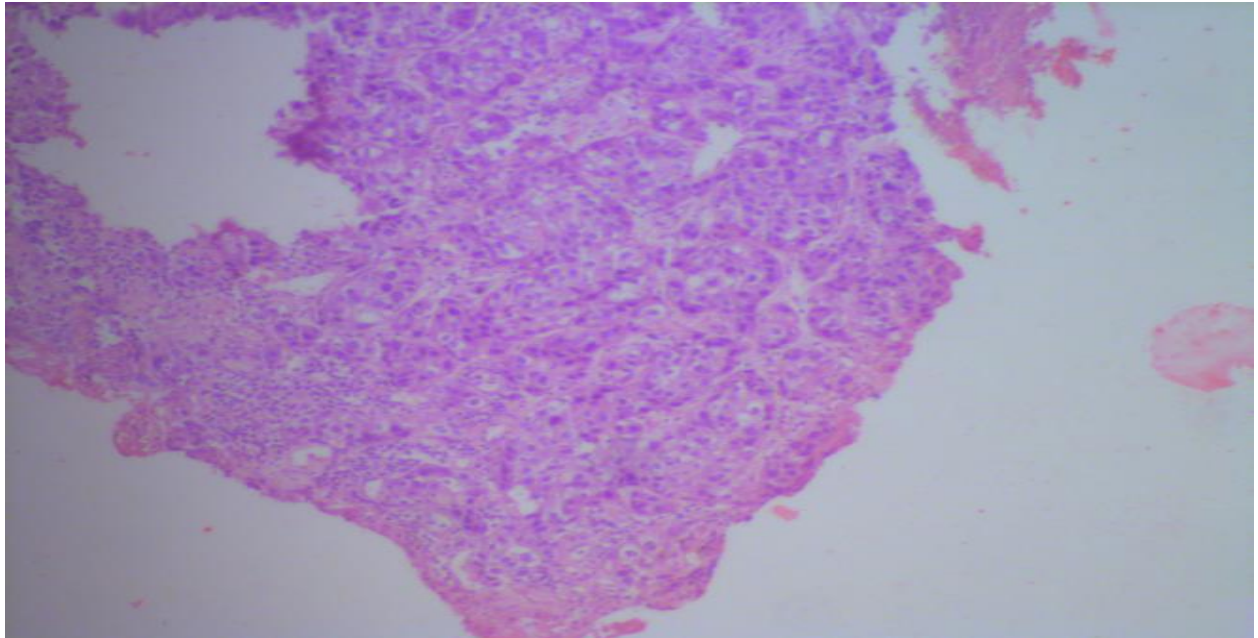


Figure 1: Photomicrograph showing Gastric Adenocarcinoma - Intestinal type (H&E, 200X)

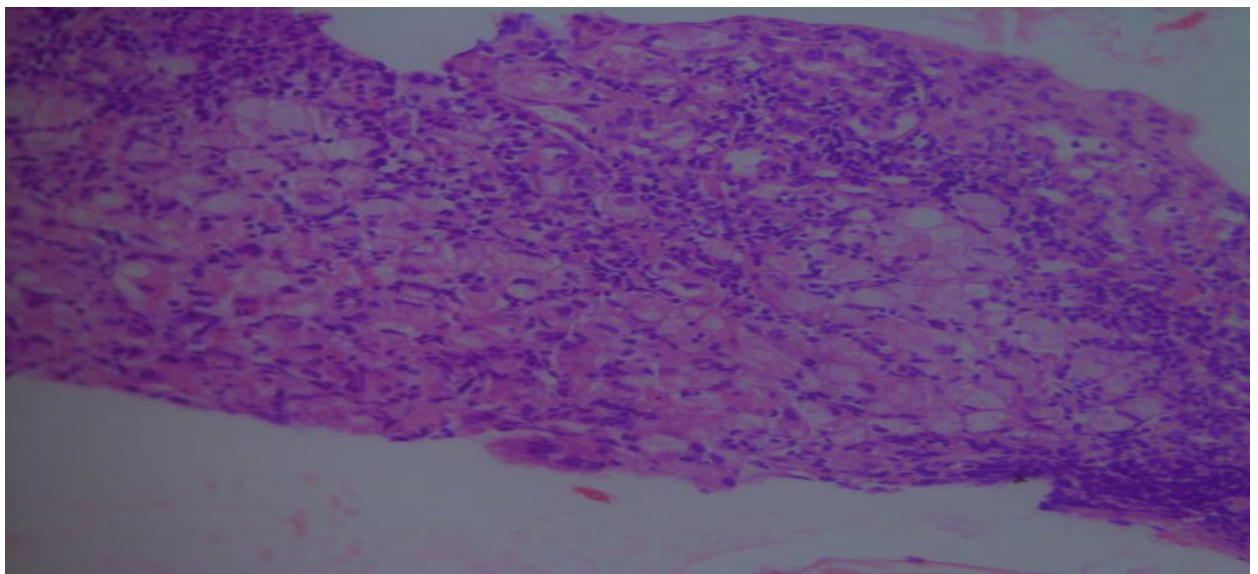


Figure 2: Photomicrograph showing Gastric Signet ring cell carcinoma composed predominantly of signet ring cells characterized by globoid droplet of cytoplasmic mucin with an eccentrically placed nucleus (H&E, 200X)