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Comparison of Dysplasia and Regenerative Atypia in Endoscopic Gastric Biopsies

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Abstract - *Gastric cancer remains the second most common cause of cancer related deaths worldwide. In tumor progression model of intestinal type of gastric carcinoma, the cellular changes progress from initial inflammation and chronic gastritis to metaplasia, dysplasia and adenocarcinoma. Distinguishing regenerative atypia from dysplasia and carcinoma is the most daunting challenge for a pathologist. Focusing on cytological features can provide an opportunity for early diagnosis and may improve patient's survival.*

Key Words: (**Gastric Cancer**), (**Endoscopic Biopsies**), (**Dysplasia**)

1. INTRODUCTION

Gastric epithelial dysplasia is a non-invasive neoplastic lesion, associated with increased risk of gastric adenocarcinoma. It can arise either in metaplastic mucosa (intestinal metaplasia) or in native mucosa.

The histologic diagnosis of gastric dysplasia can be diagnostic challenge to pathologists all over the world due to multiple causes including

I. Interobserver variation

II. Specimen orientation

III. Sampling issues

IV. Difficulty in distinguishing dysplasia from reactive atypia.

2. MATERIALS AND METHODS

2.1 Study settings

This study was conducted in the Department of Pathology, Kasturba Medical College and Hospital, Manipal. Gastric biopsy samples reported in the department in the period between JAN 2011 –DEC 2012 were included in the study as per the inclusion and exclusion criteria.

2.2 Study design

Cross sectional study

2.3 Study Procedure

A detailed case proforma was prepared before the start of the study. A total of 400 gastric biopsies were included as per the inclusion and exclusion criteria. The endoscopic findings of all these gastric biopsy samples were also recorded in the case proforma sheet.

The following are the histological parameters for,

2.4 Inclusion Criteria

Foveolar hyperplasia, Gastric polyp, Gastric ulcer, Chronic gastritis associated with or without regenerative atypia, Presence or absence of Helicobacter pylori, Gastric atrophy, Intestinal metaplasia, Low grade dysplasia, High grade dysplasia.

2.5 Exclusion Criteria

Normal biopsies and those with frank invasive malignancies.

All gastric biopsy specimens obtained from endoscopy were fixed in 10% formalin, embedded in paraffin and sectioned at 5µ thickness.

Table -1: ASSOCIATION BETWEEN SEX & CASES OF REGENERATIVE ATYPIA AND DYSPLASIA(N=66)

DIAGNOSIS	Sex		Total
	Female	Male	
DYSPLASIA	4	15	19
REGENERATIVE ATYPIA	11	36	47
Total	15	51	66

3. RESULTS AND ANALYSIS

In the present study a total of 400 gastric biopsies were studied after excluding normal biopsies and biopsies with malignancies. Out of 400 biopsies, 66 cases showed cellular atypia.

SITE OF BIOPSY:

All Endoscopic biopsies were taken from antrum and body of stomach.

AGE AND SEX DISTRIBUTION:

The age and sex distribution of the patients is shown (Table - 1). In general, there was a male preponderance.

CELLULAR ATYPIA:

In cases with cellular atypia, regenerative atypia cases were 47(71.21 %) and dysplasia cases were 19(28.79%). The criteria given by Lewin & Goldstein was used to separate regenerative atypia from dysplasia.

Following are the types & percentile of cases of individual category which were encountered in cases with cellular atypia in this study (Chart -1)

Chart -1: Cases with Cellular Atypia (N=66)

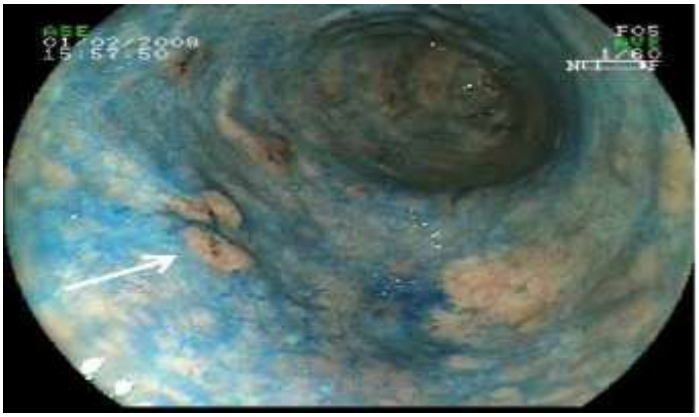

Fig -1:Endoscopic Picture Of Low Grade Dysplasia Case.

4. CONCLUSIONS

The present study attempted to evaluate the histopathological parameters to define dysplasia and regenerative hyperplasia and their association with other conditions in gastric biopsies.

2) A total of 400 gastric endoscopic biopsies reported in the department of Pathology, Kasturba Medical College and Hospital, Manipal in the period between Jan 2011 – Dec 2012 were included in the study as per the inclusion and exclusion criteria.

3) All endoscopic biopsies studied were taken from antrum and body of stomach.

4) Out of 400 biopsies, 66 cases showed cellular atypia. In cases with cellular atypia, regenerative atypia were 47(71.21 %) and dysplasia were 19(28.79%).

5) Most of them (83%) presented with abdominal symptoms like nausea, vomiting, abdominal pain, diarrhoea, and melaena.

6) Among 19 case of dysplasia, 15 were males and 4 were females. Dysplasia was more common in the age group from 40 to 70 years (mean:55).

7) On endoscopy of the 47 cases of regenerative atypia, 24 cases were normal study, 8 cases showed gastric ulcer, and 6 cases showed duodenal ulcer; and out of 19 cases of dysplasia, 9 showed gastric ulcer, and 5 showed normal study.

8) Among the type of associated inflammation, chronic inflammation was the commonest (47/66 cases).

9) Foveolar hyperplasia was seen in 19/47 cases of regenerative atypia and 10/19 cases of dysplasia.

10) Helicobacter pylori was present in 28/47 cases of the regenerative atypia and 7/19 cases of dysplasia.

11) Intestinal metaplasia was present in 11/47 cases of regenerative atypia and 15/19 cases of dysplasia. Association of intestinal metaplasia with dysplasia had statistical significance ($p<0.05$).

12) Gastric atrophy was present in 4/47 cases of regenerative atypia and 2/19 cases of dysplasia.

13) Gastric polyp was present in 4/47 cases of regenerative atypia and 2/19 cases of dysplasia. Among the two cases of polyp with dysplasia, one case was associated with high grade dysplasia.

14) Most of the cases with regenerative atypia showed maturation at mucosal surface, mitosis restricted to base of glands / pits, uniform nuclear size and chromatin, basal location of nucleus, regular nucleoli and non-uniform accentuation of histological change near area of inflammation (statistical significance ($p<0.05$).

15) Most of the cases with dysplasia showed absence of maturation at mucosal surface, mitosis at surface of glands / pits, irregular nuclear size, irregular clumping of nuclear

chromatin, nuclear stratification, irregular macronucleoli and regionally uniform histological change (statistical significance ($p<0.05$).

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