



## HISTOPATHOLOGICAL STUDY OF GASTRIC POLYPS

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**ABSTRACT**

**Background:** Polyps are common in stomach due to gastritis and chronic treatment with PPI (Proton Pump Inhibitors) as per review of literature. Morphological study of polyps helps us to know the incidence and malignant transformation of polyps. **Aims and Objectives :** To study the incidence and morphology of Gastric Polyps. **Materials and Methods :** Prospective study, 36 gastric polyps were reported which include both endoscopic biopsies (polypectomy) and resection specimens. **Observation and Results:** The commonest site of involvement was antrum and the commonest lesion was hyperplastic polyps. **Conclusion :** Hyperplastic polyps are more common in stomach and further study are required to know the malignant transformation.

**KEYWORDS :** Helicobacter Pylori, Familial Adenomatous Polyposis, Peutz-Jeghers Polyp, Proton Pump Inhibitors.

**INTRODUCTION :**

Gastric polyps are identified 3 to 5% of upper GI endoscopic procedures. Polyp may develop as a result of epithelial or stromal cell hyperplasia, inflammation, ectopia or neoplastic alteration. Anatomical location, endoscopic appearance, number of lesions and presence or absence of pathology in the surrounding gastric mucosa are critical to classify gastric polyps.

Hyperplastic polyps represent approximately 75% of all gastric polyps. This occurs on a background of chronic gastritis, as a consequence of an exaggerated mucosal response to tissue injury and inflammation. It is generally believed that gastritis initiates the process of injury and that mucosal healing response result in a stepwise progression through the phase of foveolar hyperplasia and polypoid foveolar hyperplasia and ultimately to the formation of a hyperplastic polyp. Conditions associated with the development of hyperplastic polyps include Helicobacter pylori gastritis, chronic non-H.pylori gastritis, chemical or reactive gastritis, including gastritis secondary to bile reflux and gastritis related to Bilroth II gastrectomy. The incidence of malignancy in hyperplastic polyps is reported to range from 1.5 to 4.5%<sup>11,12</sup>.

Adenomas arise in stomach due to atrophic gastritis with intestinal metaplasia<sup>5,6</sup>. They are usually solitary polyps, sessile or pedunculated<sup>7</sup> and prone for malignancy.

Inflammatory fibroid polyps are seen in association with hypochlorhydria or achlorhydria and they are most common at antrum. Fundic gland polyps occur sporadically or occur with Familial Adenomatous Polyposis. They are usually multiple, glassy, transparent and sessile. Microscopically, the polyp shows cystically dilated glands lined by fundic epithelium admixed with normal glands.

Gastric adenocarcinomas present as polypoidal lesion, it may be fungating, ulcerating or diffusely infiltrating pattern. Polypoid growths are more common in greater curvature.

FAP is an Autosomal dominant disorder in which patient develop numerous colorectal adenoma as teenagers<sup>13</sup>. At least 100 polyps are necessary for a diagnosis of classic FAP. Colorectal adenocarcinoma develops in 100% of untreated FAP patient, often before age 30<sup>14</sup>. It is caused by APC gene mutation. Certain APC and MUTYH mutations are associated with AFAP<sup>4</sup>

**AIMS AND OBJECTIVES**

1. To study the incidence and morphology of Gastric polyps from

specimens received at Sree Balaji Medical College and Hospital, Chennai.

2. To analyze the proportion of malignancies associated with polyps.

**MATERIALS AND METHODS**

This prospective study conducted at Sree Balaji Medical College and Hospital, Department of Pathology during the period from February 2014 to February 2015. A total of 36 specimens which were identified as polyps in the stomach were studied which includes both endoscopic biopsies (polypectomy) and gastric resection specimens.

The specimens were collected along with relevant clinical details including age, sex, clinical presentation and family history of polyposis or GI cancers. The specimens were fixed using 10% Neutral Buffered Formalin and processed as for routine histopathological studies. H&E stain was applied.

**RESULTS :**

The study conducted at Sree Balaji Medical College & Hospital in the department of Pathology during a period of 12 Months from February 2014 to February 2015. Total of 36 cases of Gastric Polyps were studied.

**Table 1: Gastric Polyps Distribution As Per Age And Gender**

<b>Age Range</b>	17 - 77 Years
<b>Mean Age</b>	44 Years
<b>No. of Male Patients</b>	15
<b>No. of Female Patients</b>	21
<b>Male : Female Ratio</b>	0.7 : 1

**Table 2: Non-Neoplastic And Neoplastic Polyps**

Non-Neoplastic Polyps	STOMACH	
		%
Hyperplastic Polyp	17	59%
Inflammatory polyps	6	21%
Peutz-Jeghers polyp	1	3%
Juvenile Polyp	0	0%
Fibro Epithelial Polyp	0	0%

Fundic gland polyps	5	17%
Brunner Gland Adenoma	0	0%
<b>Total</b>	<b>29</b>	<b>100%</b>

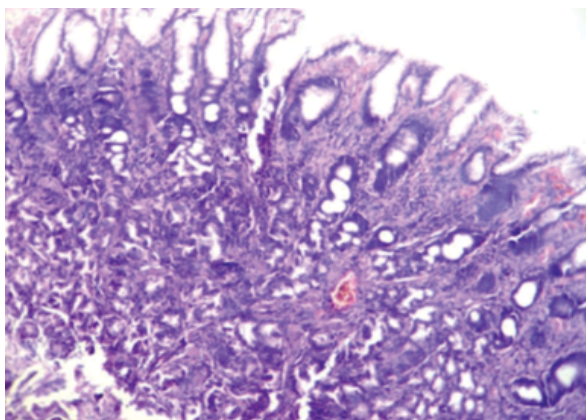
**Table 3: Neoplastic And Neoplastic Polyps**

Neoplastic Polyps	STOMACH	%
Tubular adenoma	2	29%
Villous Adenoma	2	29%
Tubulo Villous Adenoma	1	14%
Familial adenomatous polyp	1	14%
Adenomatous polyp with adenocarcinoma	1	14%
<b>Total</b>	<b>7</b>	<b>100%</b>

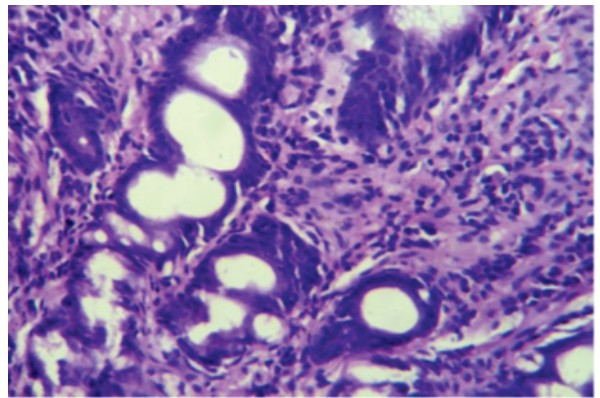
**Table 4: Distribution Of Polyps In Stomach Based On Site And Histological Type**

POLYPS	OGJ & Cardia	Fundus	Body	Antrum	Pylorus	No. OF CASES
Hyperplastic polyps		3	3	7	4	17
Fundic gland polyps	1	4				5
Inflammatory polyps		2	3		1	6
Adenomatous polyp			1	2	2	5
Peutz-Jeghers polyp				1		1
Familial adenomatous polyp					1	1
Adenocarcinoma with adenomatous polyp				1		1
<b>TOTAL</b>						<b>36</b>

**HYPERPLASTIC POLYP**



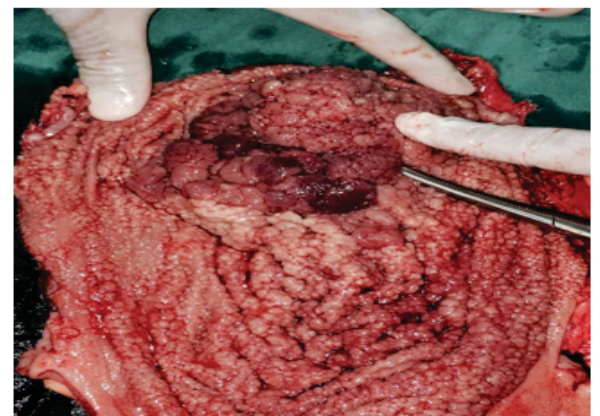
Elongated dilated and serrated crypt architecture. H & E. 10x and 40x



**FAMILIAL ADENOMATOUS POLYPS OF STOMACH**

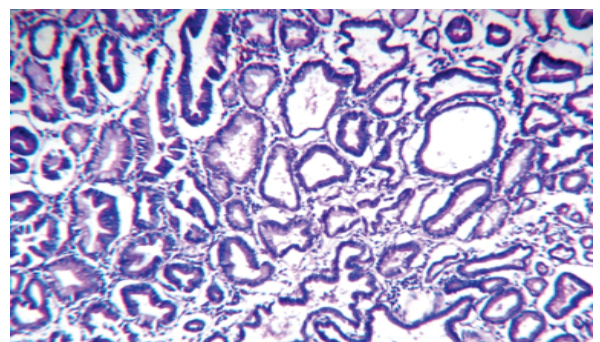


**Fundus – Pedunculated and Sessile polyps(Endoscopic Picture)**



Gross - Total gastrectomy specimen shows numerous sessile polyps ranging from less than 0.2 cm to 1.2 cm in diameter and one polypoidal mass measuring 8x4cm present in funds of stomach.

**FAMILIAL ADENOMATOUS POLYPS OF STOMACH**



Multiple polyps and one focus showing increased stratification of lining epithelium, infiltration into muscle (malignant transformation) H&E 10x

## DISCUSSION

In stomach, 36 cases were reported, it includes non-neoplastic polyps (81%) and Neo-Plastic polyps (19%). Hyperplastic polyps 17, Fundic gland polyps 5, Inflammatory polyps 6, Adenomatous polyps 7, Peutz-jeghers polyp one, Familial adenomatous polyp one and Adenomatous polyp with adenocarcinoma one.

Hyperplastic polyps are commonly seen in the antrum. In my study out of 17 hyperplastic polyps 11 were located in antrum, which correlates with the study by T Hattori<sup>9</sup>.

Inflammatory polyps consists of fibrous tissue and granulation tissue with fibroblasts present around blood vessels. Study from LiVolsi VA et al<sup>3</sup> has reported four cases of inflammatory polyp which mimic as leiomyoma by gross and radiographic picture.

Adenomas arise in stomach due to atrophic gastritis with intestinal metaplastia<sup>5,6</sup>. They are usually solitary polyps, sessile or pedunculated<sup>7</sup> and prone for malignancy. In my study 7 cases of Adenomatous polyps were reported and it correlates with the study by Laxen et al<sup>8</sup>.

Peutz-jeghers polyps may be sporadic or syndromic, with sporadic cases reported in various sites such as duodenum<sup>17</sup>, stomach<sup>18</sup>, jejunum and rectum. In my study one sporadic peutz-jeghers polyp reported. Cohet<sup>10</sup> et al have described two cases of metastasizing gastrointestinal carcinomas arising from hamartomatous polyps and showed extensive metastasis.

Attenuated familial adenomatous polyposis (AFAP) is associated with mutation of APC and MUTYH<sup>15</sup> gene. It is characterized by delayed polyp development more than 100 adenomas, delayed appearance of colon cancer often ages of 50 and above<sup>16</sup>. In my study one case was reported with more than 1000 polyps in stomach and less than 50 polyps in colon, reported as AFAP.

## CONCLUSION

This study finds a high incidence of hyperplastic polyps 17 out of 36 cases. Adenomatous polyps were located in antral region and were associated with carcinoma. Genetic studies are needed to predict malignant transformation of hyperplastic polyps. Further studies are required to analyse the cause of hyperplastic polyps like use of proton pump inhibitor for long time, HP infection.

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