Observational Study

# A study of incidence of gastric polyps in Upper GI Endoscopy, Histopathologic Features and Management options

**Asit Kumar Sethi[1], Pradipta Kumar Mohapatra[2]**

**In the era of minimal invasive procedure with the increasing use of endoscopy[13], visually discernible abnormalities, such as polyps in the gastrointestinal tract, are encountered more often. Gastric polyps most frequently originate in the mucosa but encompass a broad spectrum of pathologic conditions that may even be submucosal or extrinsic. Found in 6% of upper endoscopies[5], gastric polyps are a heterogeneous group of epithelial and subepithelial lesions that can vary in histology, neoplastic potential, and management. Even though most are asymptomatic (>90%), larger polyps may present with bleeding, anemia, obstruction, or abdominal pain. Most have no risk of cancer, but there are certain subsets of polyps with malignant potential, necessitating further endoscopic treatment and/or periodic surveillance. These polyps are typically identified histologically because they have no reliable distinguishing endoscopic features. As many gastric polyps have similar endoscopic appearances, their classification depends on the histologic compartments from which they arise (ie, epithelial, hamartomatous, or mesenchymal).**

[*J Indian Med Assoc* 2018; **116:** 20-2]

***Key words*** **: Submucosal or extrinsic, subepithelial, hamartomatous.**

## Histopathological Types of Gastric Polyp :

- **Epithelial Polyps :** Epithelial polyps are the most commonly encountered gastric polyps. They include fundic gland polyps (FGPs), hyperplastic polyps, and adenomatous polyps.
- **Fundic Gland Polyps :** FGPs are one of the most common polyps[3] found in the stomach (47%), observed in 0.8% to 23% of all endoscopies.
- **Familial Adenomatous Polyposis and Fundic Gland Polyps :** FAP is an autosomal dominant disorder characterized by numerous epithelial-derived polyps located throughout the gastrointestinal tract, most commonly in the colon. This condition is caused by a germline mutation of the adenomatous polyposis coli (APC) tumor suppressor gene.
- **Hyperplastic Polyps :** The hyperplastic polyp is the second most common gastric polyp after the FGP. A common misnomer for this polyp is inflammatory polyp, a term that should be discouraged because it can be confused with inflammatory fibroid polyp (IFP), which is managed much differently. Hyperplastic polyps are usually sessile or pedunculated, are less than 2 cm in diameter, and typically occur in the antrum, although they can arise anywhere.
- **Adenomatous Polyps :** Gastric adenomas, or gastric polypoid dysplasia, are true neoplasms and precursors to gastric cancer. Although commonly seen in countries with high gastric cancer rates (eg, Korea, Japan, and China), they also account for 6% to 10% of all gastric polyps in Western populations. Histologically, they are classified similarly to colon adenomas with tubular, villous, and tubulovillous distinctions. Frequently solitary, they are most commonly found in the antrum but can be located anywhere in the stomach. Endoscopically, they are often fat or sessile rather than pedunculated and can range in size from a few millimeters to centimetres.
- **Juvenile Polyps and Juvenile Polyposis Syndrome :** Juvenile polyps[2] are mucosal tumors that consist primarily of an excess of lamina propria and dilated cystic glands; therefore, they are classified as hamartomatous polyps. Occasionally, they are referred to as inflammatory or retention polyps due to the appearance of distended, mucus-filled glands, inflammatory cells, and edema. Juvenile polyps are typically solitary pedunculated lesions

Table 1 — *UGIE finding of Gastric Polyps*

| Site of Polyp | | Types of Polyp | | No of Cases |
|---|---|---|---|---|
| | | Sessile | Penduculated | |
| Fundus | Single | | 2 | 2 |
| | Multiple | 1 | 2 | 3 |
| Body | Single | 2 | 10 | 12 |
| | Multiple | 0 | 7 | 7 |
| Antrum | Single | 4 | 24 | 28 |
| | Multiple | 1 | 2 | 3 |
| D1 | Single | 0 | 1 | 1 |
| | Multiple | 1 | 5 | 6 |
| D2 | Single | 0 | 0 | 0 |
| | Multiple | 0 | 4 | 4 |

Department of Surgery, SCB Medical College, Cuttack 753001
[1]MS, FIAGES, FMAS, Assistant Professor
[2]MS, FIAGES, PG DMCH, Consultant Surgeon, Shanti Memorial Hospital, Cuttack 753001 and Corresponding author

in the antrum and range from 3 mm to 20 mm. **A:** Juvenile polyps are hamartomatous polyps and typically found in the antrum. Solitary polyps have hamartomatous or inflammatory components. **B:** Juvenile polyps are less specific in their histology than Peutz-Jeghers polyps and are sometimes.

- **Mesenchymal Polyps:** Mesenchymal lesions cover a broad spectrum of mesodermally derived tumors. These polyps can be mucosal or submucosal in location but are typically situated underneath the surface epithelium, imparting a more nodular than polypoid appearance. Given their deep location, these lesions should be further evaluated by endoscopic ultrasound (EUS)[14] and tissue acquisition. Select common mesenchymal polyps covered herein include IFPs, GISTs[11], leiomyomas, and granular cell tumors.

## Management of Gastric Polyps :

- **Fundic polyp :** The discovery of gastric polyps during an endoscopic[3] examination of the stomach is a relatively common occurrence for gastroenterologists[1]. In fact, a diverse array of polyps and polypoid lesions are found in the stomach. However, there is a paucity of specific analytic and practical clinical guidance for the management of such lesions.

**Management :** Larger polyps (>1 cm) should be removed endoscopically, and if the patient is taking a PPI, discontinuation of the PPI should be considered. Although no guidance is offered regarding optimal intervals for follow-up examinations, regular surveillance[6] by endoscopy is recommended.

***Key Point :*** When multiple fundic gland polyps are evident in younger patients[2], evaluation for familial polyposis should be considered.

- **Hyperplastic polyps :** Hyperplastic polyps are caused by an inflamed and often atrophic gastric mucosa. These polyps typically occur in the antrum and often in presentations of multiple lesions. They have a smooth, dome-shaped appearance. Hyperplastic polyps can be large in size, and patients may present with chronic blood loss or even gastric obstruction.

**Management :** Elimination of the underlying cause, such as H pylori infection, typically results in polyp regression. When encountered as isolated or polypoid lesions at gastrectomy sites, hyperplastic polyps have a low but defined neoplastic risk[7,9]. For this reason, large polyps must be completely excised[1]. In the absence of dysplasia, the optimal management of small polyps located at gastrectomy[17] sites was not defined.

***Key Point :*** The diagnosis of a hyperplastic polyp of any size requires a full set of gastric biopsies to determine gastric mucosal characteristics for purposes of topographic mapping. If H pylori infection is present, eradication is warranted, and follow-up endoscopy is appropriate to confirm cure of the H pylori infection as well as regression of the remaining polyps.

- **Adenomatous Polyps :** Adenomatous polyps occur sporadically or in association with familial polyposis. Typically, these polyps are circumscribed and can be pedunculated or sessile in form. In addition, they can have dysplastic epithelium that does not invade the lamina propria.

**Management :** Endoscopic resection is appropriate, and surveillance follow-up at 1 year is recommended. Gastric mapping is useful to determine whether there is atrophic gastric metaplasia, which would be an indication for surveillance.

***Key Point :*** A synchronous adenocarcinoma has been found in another area of the stomach in up to 30% of patients who have an adenomatous polyp. For this reason, careful inspection of the entire stomach is warranted when adenomatous polyps are identified.

- **Polyposis Syndromes :** Polyposis syndromes, which are characterized by the growth of multiple polyps, are rare and include juvenile polyposis, Cronkite-Canada syndrome, Peutz-Jeghers syndrome, and Cowden's disease. Hamartomatous polyps may be present in all of these syndromes. Adenomatous polyps[12], as mentioned, may be found in familial polyposis.

**Management :** There is no defined guideline for the care of patients who have familial polyposis[1], but it is suggested that endoscopic surveillance be performed at 30 years of age and at 3-year intervals. Patients who have large numbers of polyps should undergo surveillance annually. Juvenile polyposis has a lifetime associated risk for gastric cancer[14] of 15% to 20%, and gastric surveillance[8] is recommended at 1- to 2-year intervals.

***Key Point :*** In Cowden's disease, there is no association with gastric malignancy. Instead, surveillance should focus on breast and thyroid cancer screening.

- **Inflammatory Fibroid Polyps :** Inflammatory fibroid polyps, also known as Vanek tumors[10], are rare, representing fewer than 1% of all gastric polyps. These tumors are rarely symptomatic but can be associated with bleeding or gastric outlet obstruction.

**Management :** Most inflammatory fibroid polyps are found incidentally and do not recur. No surveillance is recommended.

***Key Point :*** Inflammatory fibroid lesions typically have massive eosinophilic infiltrates and are occasionally --and incorrectly - called eosinophilic granulomas.

- **Gastrointestinal Stromal Tumor :** Gastrointestinal stromal tumors (GISTs) make up 1% to 3 % of gastric neoplasms and occur more frequently in men than in women. GISTs[11] are typically located in the fundus. Because these lesions are submucosal, mucosal biopsy proves inadequate as a diagnostic assay in that results are typically normal. Endoscopic ultrasonography-guided biopsy

with fine-needle aspiration provides the best tissue sample for diagnosis. GISTs are categorized as having malignant potential ranging from low risk to high risk on the basis of polyp size and level of mitotic activity.

**Management :** All GISTs should be regarded as having neoplastic potential. Up to 50% of patients have metastatic disease (typically hepatic) on presentation. Surgical resection[16] is recommended for lesions larger than 2 cm. Endoscopic[4,15] resection is an option for smaller GISTs.

***Key Point :*** GISTs have a unique immunostaining characteristic that allows a specific diagnosis: The stain for the KIT gene product CD117 is positive in 95% of cases. Endoscopic removal of GISTs is controversial because of reports of positive resection margins and tumor spillage.

- **Carcinoid Tumors :** There are 3 types of gastric carcinoid tumors. Type 1 carcinoid tumors account for 65% to 80% of all gastric carcinoids and are more common in women than in men. They are often associated with chronic autoimmune atrophic gastritis and pernicious anemia. Type 2 carcinoid tumors account for 3% to 15% of gastric carcinoids and are associated with Zollinger-Ellison syndrome and multiple endocrine neoplasia. Type 3 carcinoid tumors are sporadic, account for approximately 20% of gastric lesions, and occur more frequently in men than in women. Types 1 and 2 carcinoids are associated with the development of hypergastrinemia. These related carcinoids are typically multiple, broad-based, firm, yellowish lesions that are located in the fundus or gastric body. They tend to be smaller than 2 cm. In contrast, the sporadic type 3 carcinoids are typically single, prepyloric, and larger than 2 cm.

**Management :** The overall prognosis depends on the type of carcinoid encountered. Local excision[1] is recommended, if possible. Type 1 carcinoids rarely metastasize. However, antrectomy should be considered if multiple lesions are present. Type 2 carcinoids should be managed by endoscopic polypectomy followed by regular surveillance if the underlying gastrinoma cannot be removed. Type 3 lesions have a propensity for invasion and metastasis. Gastrectomy is the therapy of choice, although the 5-year survival rate is still less than 50%.

***Key Point :*** The carcinoid syndrome when associated with gastric carcinoids is present almost exclusively in patients with type 3 lesions.

## *Conclusion :*

Gastric polyps are a common finding during routine endoscopy. Despite the fact that more than 90% are asymptomatic and do not have malignant potential, a subset of gastric polyps require further intervention, and histologic evaluation is necessary to determine the type of polyp and the presence of dysplasia. The identification of such polyps requires histologic evaluation and may involve additional diagnostic investigative techniques, such as tandem biopsies, immunohistochemistry staining, EUS, and EUS-assisted tissue acquisition. Furthermore, it is essential for gastroenterologists to provide full endoscopic and clinical information to the pathologist to reach a proper diagnosis, as many conditions have similar histologic characteristics.

## References


1 Carmack SW, Genta RM, Graham DY, Lauwers GY — Management of gastric polyps: a pathology-based guide for gastroenterologists. *Nat Rev Gastroenterol Hepatol* 2009; **6:** 331-41.

2 Stolte M, Sticht T, Eidt S, Ebert D, Finkenzeller G — Frequency, location, and age and sex distribution of various types of gastric polyp. *Endoscopy* 1994; **26:** 659-65.

3 Weston BR, Helper DJ, Rex DK — Positive predictive value of endoscopic features deemed typical of gastric fundic gland polyps. *J Clin Gastroenterol* 2003; **36:** 399-402.

4 Chandrasekhara V, Ginsberg GG — Endoscopic management of gastrointestinal stromal tumors. *Curr Gastroenterol Rep* 2011; **13:** 532-9.

5 Stolte M. Clinical consequences of the endoscopic diagnosis of gastric polyps. *Endoscopy* 1995; **27:** 32-7. Discussion 59-60.

6 Dickey W, Kenny BD, McConnell JB — Prevalence of fundic gland polyps in a western European population. *J Clin Gastroenterol* 1996; **23:** 73-5.

7 Dirschmid K, Platz-Baudin C, Stolte M — Why is the hyperplastic polyp a marker for the precancerous condition of the gastric mucosa? *Virchows Arch* 2006; **448:** 80-4.

8 Ginsberg GG, Al-Kawas FH, Fleischer DE, Reilly HF, Benjamin SB — Gastric polyps: relationship of size and histology to cancer risk. Am J Gastroenterol 1996; **91:** 714-7.

9 Hizawa K, Fuchigami T, Iida M — Possible neoplastic transformation within gastric hyperplastic polyp. Application of endoscopic polypectomy. *Surg Endosc* 1995; **9:** 714-8.

10 Rossi P, Montuori M, Balassone V — Inflammatory fibroid polyp. A case report and review of the literature. *Ann Ital Chir* 2012; **83:** 347-51.

11 Fletcher CD, Berman JJ, Corless C — Diagnosis of gastrointestinal stromal tumors: a consensus approach. *Hum Pathol* 2002; **33:** 459-65.

12 Caletti G, Deviere J, Fockens P — Guidelines of the European Society of Gastrointestinal Endoscopy (ESGE) Part II: Retroperitoneum and large bowel, training. The European Endosonography Club Working Party. *Endoscopy* 1996; **28:** 626-8.

13 Van Dam J, Brady PG, Freeman M — Guidelines for training in electronic ultrasound: guidelines for clinical application. From the ASGE. American Society for Gastrointestinal Endoscopy. *Gastrointest Endosc* 1999; **49:** 829-33.

14 Lee IL, Lin PY, Tung SY, Shen CH, Wei KL, Wu CS — Endoscopic submucosal dissection for the treatment of intraluminal gastric subepithelial tumors originating from the muscularis propria layer. *Endoscopy* 2006; **38:** 1024-8.

15 Sun S, Ge N, Wang C, Wang M, Lu Q — Endoscopic band ligation of small gastric stromal tumors and follow-up by endoscopic ultrasonography. *Surg Endosc* 2007; **21:** 574-8.

16 Ledo-Rodriguez A, Ulla-Rocha JL, Baltar-Arias R — Endoscopic resection of rectal gastrointestinal stromal tumor (GIST) using band ligation. *Rev Esp Enferm Dig* 2009; **101:** 870-1.

17 Zhou PH, Yao LQ, Qin XY — Endoscopic full-thickness resection without laparoscopic assistance for gastric submucosal tumors originated from the muscularis propria. *Surg Endosc* 2011; **25:** 2926-31.