Management of gastric polyps

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Definition of gastric polyps

Sessile or pedunculated lesions that originate in the gastric epithelium or submucosa and protrude in the stomach lumen
Clinical relevance of gastric polyps

1. They may have **malignant potential** and are **precursors of early gastric cancer**
2. They may indicate an **increased risk of intestinal malignancy**
3. They may indicate an **increased risk of extraintestinal malignancy**
Classification of gastric polyps

1. Origin

- epithelial: fundic gland, hyperplastic, adenomatous, hamartomatous, polyposis syndromes
- non-mucosal, intramural: GIST, leimyoma, fibroma/fibromyoma, inflammatory fibroid, lipoma, ectopic pancreas, neuroendocrine, neurogenic and vascular

2. Malignant potential

- non-neoplastic/low: fundic gland polyps, hyperplastic, inflammatory fibroid, hamartomatous and developmental
- Neoplastic/high: adenoma, carcinoid, GIST
- polypoid growth pattern: xanthelesma, lymphoid hyperplasia, mesenchymal stroma tumours, vascular tumours
The most common types of benign gastric polyps are

- Hyperplastic polyps 30-93%
- Fundic gland polyps 16-51%
- Adenomatous polyps 3-26%
Hyperplastic polyps

<2 cm, smooth, dome-shaped/pedunculated
Typical localization: antrum
Prevalence of dysplasia: 2-20%
Genetic background: p53, MSI

• Strong association with
  chronic gastritis,
  H.pylori-associated gastritis,
  pernicious anaemia/atrophic mucosa,
  sites of gastroenterostomies
Management of hyperplastic polyps

• Test for H. pylori and eradicate if present (70% regression)

• Biopsy/excision of the polyp + examination of the whole stomach for mucosal abnormalities with „gastric mapping“

• Follow-up endoscopy in max. 1 year to test:
  – Recurrence/regression of remaining polyp
  – Cure of the infection
  – In case of atrophy and/or metaplasia individual surveillance plan for gastric cancer
Fundic gland polyps

Two distinct clinicopathological patterns of fundic gland polyps are:

- 1. sporadic (middle-aged males)
- 2. FAP-associated

<table>
<thead>
<tr>
<th></th>
<th>Size</th>
<th>Localization</th>
<th>Dysplasia</th>
<th>Genetics</th>
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</thead>
<tbody>
<tr>
<td>Sporadic</td>
<td>1-5 mm</td>
<td>fundus+body</td>
<td>&lt;1%</td>
<td>β-catenin</td>
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<tr>
<td>FAP-associated</td>
<td></td>
<td>body</td>
<td></td>
<td>APC</td>
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Fundic gland polyps

Factors to be considered in the management of FGPs

- Ongoing PPI-therapy
- Size
- Number

Ongoing PPI-Therapy:

→ **sporadic**,  
<10 mm PPI is not discontinued  
>10 mm PPI is discontinued, if clinically appropriate

Size:  
>10 mm: **Dysplasia** ↑  → **polypectomy**

Number:  
Patients under 40 yrs of age with multiple FGP and/or dysplasia  
→ **consider FAP, screening colonoscopy**
Adenomatous polyps

<2 cm, solitary lesions

Histology: dysplastic epithelium w/o invasion of the lamina propria

Typical localization: antrum

Conditions which favour the development of adenomatous polyps are:

chronic, atrophic gastritis
intestinal metaplasia
Adenomatous polyps

Clinical relevance of gastric adenomas:

- **True neoplasms** and precursor of gastric cancer

- **Strong association** between gastric adenoma and synchronous/metachronous adenocarcinoma (in up to 30% of patients with adenoma)

Probability of neoplastic progression is greater if

- **size >2 cm** (>50% focus of adenocarcinoma)
- **villous type** (28-40% vs. 5% tubular)
Management of gastric adenomas

• Complete removal!

• Examination of the whole stomach for mucosal abnormalities and take biopsy if found

• Endoscopic follow-up (ASGE guideline)
  in complete resection/high grade dysplasia: in 6 mo
  in 1 yr
Polyposis syndromes

- Adenomatous polyposis: FAP
- Hamartomatous polyposis: Juvenile polyposis
  Peutz-Jeghers` syndrome
  Cronkite-Canada syndrome
  Cowden disease
FAP

AD-inherited numerous colorectal adenomas with 100% chance of malignant progression (APC-gene 5q21)

Proportion of FAP-patients affected by familial gastric polyposis?

30-100%

Types of gastric polyps:  
1. Fundic gland polyps (95%)
2. Adenomas (5%)

Surveillance:  
1. OGD every 2 yrs after age 18, every 5 yrs after age 50
2. Biopsy >5 polyps
3. Remove polyps >10 mm
4. Look for duodenal/periampullary adenomas (in 50-90% of patients)
Hamartomatous gastric polyps

- Juvenile polyposis
- Peutz-Jeghers` syndrome
- Cronkite-Canada syndrome
- Cowden disease

What does hamartomatous tumour means?

A benign tumor-like malformation
- resulting from faulty development in an organ
- composed of an overgrowth of mature cells and tissues normally present in the affected part
- but with disorganization (not likely to compress adjacent tissue)
- often with one element predominating.
Hamartomatous gastric polyps

Juvenile polyps occur in two forms:

Solitary
- Typically pedunculated
- Localized in the antrum
- Hamartomatous and/or inflammatory components

Multiple
- WHO criteria of juvenile polyposis syndrome:
  1. More than five juvenile polyps in the colon or rectum or
  2. Juvenile polyps throughout the GI tract or
  3. Any number of juvenile polyps in a person with pos. family history

Major difference in clinical relevance?

No neoplastic potential  Lifetime risk of malignancy >50%
Hamartomatous gastric polyps

Peutz-Jeghers`syndrome

Clinical characteristics and relevance?

AD-inherited hamartomatous polyps
1. with mucocutaneous pigmentation (lip, buccal mucosa and digits),
2. association with extraintestinal malformations (breast, endometrial, pancreatic, lung)
3. with life-time gastric cancer risk of ~30% and general malignancy risk of >50%
Hamartomatous gastric polyps

Peutz-Jeghers`syndrome

Management and surveillance?

Biopsy > 5 polyps
Polypectomy >1 cm
OGD every 2-3 yrs after age 18
Annual screening of susceptible organs
Hamartomatous gastric polyps

Cowden`s syndrome

Clinical characteristics?

AD-inherited hamartomatous GI polyps
+orocutaneous hamartomas: abnormal skin and mucous membranes
+breast, thyroid and genitourinary abnormalities/cancers

Management?

Eradicate H. pylori
Screening for breast and thyroid cancer
What is it?

Well-circumscribed lesion
typically in the antrum and the prepyloric region (in 80% of cases)
covered with normal mucosa but have central depression, ulceration or white cap

Inflammatory fibroid polyp

Submucosal tumour
Most commonly in the 5th and 6th decades in females
Associated with chronic atrophic gastritis
Clinical characteristics of inflammatory fibroid polyps?

- Asymptomatic for long time
- Can cause gastric obstruction, since have propensity to enlarge
- Forceps biopsy may be negative (due to extension to deeper layers)

Management of inflammatory fibroid polyps?

Excision (no recurrence)
No surveillance is needed
Non-mucosal gastric polypoid lesions

- Inflammatory fibroid polyp
- Gastrointestinal stromal tumours (GIST)
- Carcinoid
Gastronintestinal stromal tumour in the stomach

How many percent of GISTs arise in the stomach?

60-70%

Where are GISTs typically localized in the stomach?

Fundus

How is a representative tissue best obtained?

Endosonographic FNA
Gastronintestinal stromal tumour in the stomach

In case of histologically proven GIST in the stomach, what is the next step in diagnosis?

CT scan and EUS to evaluate the degree of local and metastatic spread

Is an endoscopic therapy feasible?

No. Surgical resection is needed. If the tumour is unresectable and/or metastases are present: imatinib-therapy
Gastric carcinoid

How would you diagnose gastric NET?

Biopsy (lesion and surrounding area) and Measurement of fasting serum gastrin level

Why are these factors essential in the diagnosis?

- Type I: 65-80%, associated with autoimmune atrophic gastritis, pernicious anaemia, hypergastrinaemia
- Type II: 3-15%, associated with Zollinger-Ellison syndrome, as part of MEN1
- Type III: 15-20% sporadic, not associated with hypergastrinaemia
Gastric carcinoid

How does the type of carcinoid affect the prognosis?

Type I: >95% 5-yr-survival  
Type II: almost 100%  
Type III: <50% 5-yr-survival

How does the type of carcinoid affect the management?

Type I: Polypectomy (if lesion <1 cm)/surgery  
Type II: Surgical therapy of gastrinoma  
Type III: Surgical resection only
Summary

Which types of gastric polyps should be sampled?

   All types

Which types of gastric polyps should be removed?

   All polyps with dysplasia or symptoms
   Adenomatous polyps

When should be performed a follow-up endoscopy in high risk polyps?

   At 1 year
Summary

For which polyp types is the biopsy of the intervening gastric mucosa recommended?

Hyperplastic polyps
Adenomatous polyps

For which polyp types is eradication of H. pylori (if detected) recommended?

Hyperplastic polyps
Adenomatous polyps
BENIGN TUMOURS AND TUMOUR-LIKE LESIONS OF STOMACH

Fundic gland polyp

Tubulo-villous adenoma
Villous adenoma
Tubular adenoma
Hyperplastic polyp
Gastritis cystica polyposa
Inflammatory fibroid polyp

Polyps in Cowden’s disease
Gastric Peutz-Jeghers polyp
Cronchite-Canada syndrome polyp
Juvenile polyp
Pancreatic heterotopia