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## Histological and molecular classification of gastrointestinal polyps



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### ABSTRACT

Endoscopic diagnosis and treatment for gastrointestinal polyps became widely available within the last decades. Exact terminology is important for further therapeutic steps, follow up or treatment. Gastroenterologists, Oncologists, Surgeons and Pathologists need to be aware of the most recent terminology to ensure proper risk assessment and subsequent treatment if necessary. This manuscript aims to list the variety of gastrointestinal polyps and the molecular background where appropriate.

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**1. Introduction**

Despite the recent confusion over terminology the adenoma-carcinoma-sequence in the luminal gastro-intestinal tract from the stomach to the supraanal rectum is still valid. There is no doubt that the majority of adenocarcinomas still develops along this classical pathway [1–5]. A few follow a more recently described serrated pathway [6]. Adenomas are benign tumors of gastrointestinal mucosa. Since being unequivocal precursors complete endoscopic removal is recommended. The colon and rectum are more affected than the stomach or small bowel. Classical adenomas (Fig. 1) and serrated lesions (Fig. 2) are subclassified according to their histological type (Table 1) [7,8].

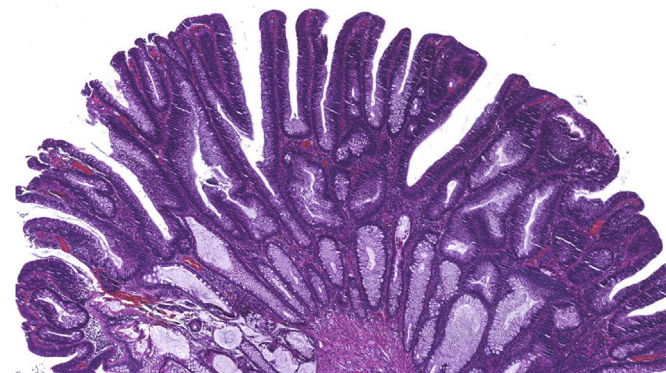
All of the above are defined as low grade dysplastic lesions or can develop low grade dysplasia within time and may progress to high grade dysplasia and carcinoma. In the stomach villous adenomas are often referred to as papillary adenoma.

Noteworthy is that only a complete polypectomy allows proper histological typing and staging. Thus polyps should always be removed completely, as national and international guidelines call for. Partial polypectomies should be avoided. Especially in the colon besides hyperplastic polyps the vast majority of polyps are unequivocally neoplastic and thus should always be removed completely (Table 2). In the stomach around 80% of all polyps are non-neoplastic and thus a biopsy (biopsies) seems to be the diagnostic method of choice to allow a histological diagnosis and plan further therapeutic or diagnostic steps. Generally, also gastric polyps should always be removed to allow proper histological work-up (Fig. 3).

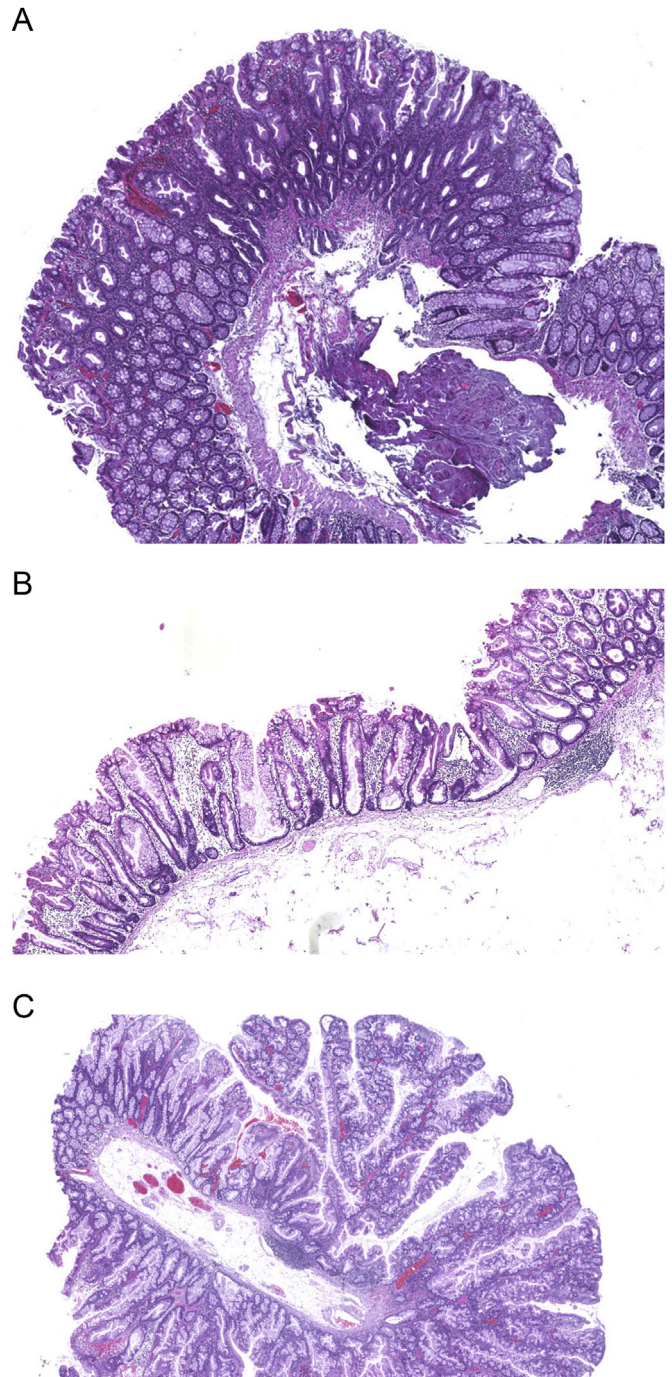
**2. Stomach**

*2.1. Non-neoplastic gastric polyps*

As already stated the vast majority of gastric polyps consist of non-neoplastic lesions. Extremely helpful in the stomach are 2 biopsies from antrum and corpus each to determine the status of the surrounding gastric mucosa since this may ensure the correct



**Fig. 1.** Classical colon adenoma with elongated hyperchromatic palisading nuclei.



**Fig. 2.** A: Overview of a hyperplastic polyp with saw tooth serrated morphology confined to the upper half of the mucosa. B: Sessile serrated adenoma with T- and L-shaped glands at the base of the mucosa and complex hyperserration in the upper half of the mucosa. C: Traditional serrated adenoma with low grade dysplasia, hyperchromatic, elongated palisading nuclei and so called microacini (ectopic crypts).

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