Planetary Polyp

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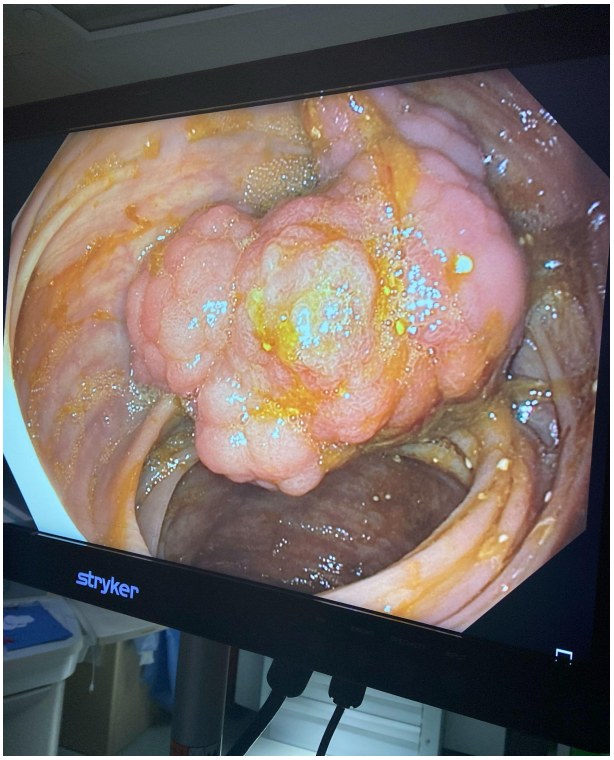

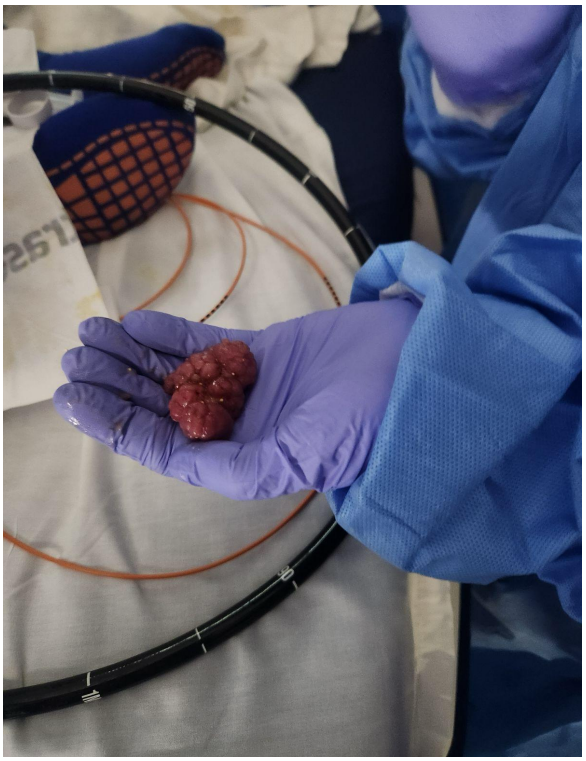

What is a polyp?

Colorectal polyps are abnormal tissue growths that protrude from the lining (mucosa) of the colon or rectum into the intestinal lumen. Polyps are classified morphologically based on their size, shape, color, and histopathology, particularly in relation to their malignancy potential and associated cancer risk [1]. Globally, colorectal polyps are the second leading cause of cancer-related mortality [2], with a rising incidence among males and individuals over the age of 45 [3].

The most commonly observed pathway for colorectal cancer (CRC) development involves genetic mutations that drive abnormal cell proliferation. This includes the adenoma-carcinoma sequence, characterized by mutations in the APC tumor suppressor gene, and the serrated polyp-carcinoma

sequence, involving MLH1 promoter hypermethylation that silences tumor suppressor genes [4]. Due to the potential for malignant transformation of various polyp types, colonoscopy with polypectomy remains the primary strategy for CRC prevention [5].

Types of Polyps:

Tubular adenomas, which include all non-serrated lesions, vary in risk depending on their size and histological features. Adenomas measuring at least 10 mm in diameter or exhibiting tubulo-villous or villous architecture, or high-grade dysplasia, are considered high-risk for neoplastic progression. In such cases, repeat colonoscopy is recommended within three years. In the absence of high-risk features, the recommended follow-up interval depends on the number of adenomas identified. For individuals with one to two tubular adenomas, a surveillance colonoscopy is advised after seven to ten years. For those with three to four adenomas, a follow-up interval of three to five years is recommended. When five to ten adenomas are present, the risk of neoplasia increases, warranting surveillance at three years. If more than ten adenomas are found, a hereditary polyposis syndrome is likely, and a repeat colonoscopy is advised within one year. One study reported that individuals with more than ten adenomas had approximately a 25% chance of developing advanced neoplasia within four years [6].

Sessile serrated polyps (SSPs) are considered high-risk when they are 10 mm or larger or demonstrate dysplasia, and in such cases, a three-year follow-up colonoscopy is recommended. When these features are absent, surveillance intervals vary based on polyp burden. For one to two SSPs, a five- to ten-year follow-up interval is advised. If three to four SSPs are detected, colonoscopy should be repeated in three to five years, while five to ten SSPs warrant surveillance within three years.

Traditional serrated adenomas (TSAs) carry a higher neoplastic risk than tubular adenomas. Due to their malignant potential, the recommended follow-up after identification is a repeat colonoscopy in three years.

Hyperplastic polyps, particularly those smaller than 10 mm, are generally benign and may be reported as part of a normal colonoscopy. However, if a hyperplastic polyp is 10 mm or larger, a three- to five-year follow-up colonoscopy is recommended due to the elevated neoplasia risk associated with large serrated lesions. The presence of more than 20 hyperplastic polyps may indicate serrated polyposis syndrome, a high-risk condition requiring individualized follow-up strategies. Conversely, individuals with fewer than 20 hyperplastic polyps, all smaller than 10 mm, are considered low risk for neoplasia [7].

For individuals with a high-risk family history, surveillance recommendations are more aggressive. Colonoscopy every five years is advised for those with either colorectal cancer or an advanced adenoma in two first-degree relatives diagnosed at any age, or in one first-degree relative diagnosed before the age of 60. Screening should begin at age 40, or ten years before the earliest diagnosis in the family—whichever occurs first. If a first-degree relative was diagnosed at age 60 or older, colonoscopy should commence at age 40, with follow-up according to average-risk screening protocols. In cases where a second-degree relative has been diagnosed with colorectal cancer or an advanced polyp, standard average-risk CRC screening recommendations should be followed.

Guidelines for Polyp Follow-Up:

Findings from a screening colonoscopy play a crucial role in determining an individual's future risk of colorectal cancer and guiding the timing of repeat examinations. The U.S. Multi-Society Task Force has established updated recommendations for surveillance intervals following initial screening colonoscopy in individuals at average risk. In the case of a normal colonoscopy, which may include the presence of hyperplastic polyps smaller than 10 mm but no other significant abnormalities, the Task Force recommends a follow-up colonoscopy in 10 years. Although direct evidence supporting this interval is limited, the recommendation is based on the low likelihood of progression to colorectal cancer in the absence of high-risk findings [8].

References:

1. Meseeha M, Attia M. Colon Polyps [Internet]. PubMed. Treasure Island (FL): StatPearls Publishing; 2020. Available from: https://www.ncbi.nlm.nih.gov/books/NBK430761/
2. Sullivan BA, Noujaim M, Roper J. Cause, Epidemiology, and Histology of Polyps and Pathways to Colorectal Cancer. Gastrointestinal Endoscopy Clinics of North America. 2022 Feb;32(2):177–94.8
3. Definition & Facts for Colon Polyps [Internet]. National Institute of Diabetes and Digestive and Kidney Diseases. NIDDK - National Institute of Diabetes and Digestive and Kidney Diseases; 2025 [cited 2025 Mar 31]. Available from: https://www.niddk.nih.gov/health-information/digestive-diseases/colon-polyps/definition-facts/?utm_source=chatgpt.com#what
4. Tang J, Lam GT, Brooks RD, Miles M, Useckaite Z, Johnson IRD, et al. Exploring the role of sporadic BRAF and KRAS mutations during colorectal cancer pathogenesis: A spotlight on the contribution of the endosome-lysosome system. Cancer Letters. 2024 Mar;585:216639.
5. Patel VV, Bechara R, Rai M. Dysplasia and Malignancy in Colonic Polyps: Preparing for a Resect and Discard Strategy in Canada. JGH Open. 2025 Mar;9(3).
6. Am Fam Physician. 2021;103(5):314-316
7. Gupta S, Lieberman D, Anderson JC, Burke CA, Dominitz JA, Kaltenbach T, Robertson DJ, Shaukat A, Syngal S, Rex DK. Recommendations for Follow-Up After Colonoscopy and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer. Am J Gastroenterol. 2020 Mar;115(3):415-434. doi: 10.14309/ajg.0000000000000544. PMID: 32039982; PMCID: PMC7393611.
8. Shaukat A, Kahi CJ, Burke CA, Rabeneck L, Sauer BG, Rex DK. ACG Clinical Guidelines: Colorectal Cancer Screening 2021. Am J Gastroenterol. 2021 Mar 1;116(3):458-479. doi: 10.14309/ajg.0000000000001122. PMID: 33657038.