Volume 3, Issue 2, February 2025 ISSN (E): 2938-3765

THE MORPHOLOGICAL FEATURES OF ADENOMA OF THE LARGE INTESTINE

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Abstract
Adenomas of the large intestine, also known as colorectal adenomas, are benign epithelial tumors characterized by dysplastic changes in the intestinal mucosa. They are considered precursors to colorectal carcinoma, making their identification and morphological characterization crucial for early detection and prevention of colorectal cancer (CRC) [1].

Keywords: Histology, adenoma, gland, intestine, mild, lesion.

Introduction

Types of Colorectal Adenomas

Adenomas of the large intestine are broadly classified based on their histological features and growth patterns:

1. Tubular Adenomas:
Tubular adenomas are the most common subtype, accounting for approximately 70–85% of all colorectal adenomas [2]. They are composed of closely packed tubular glands lined by dysplastic epithelial cells. Morphologically, these adenomas are often small (<1 cm) and pedunculated but can occasionally appear sessile.

2. Villous Adenomas:
Villous adenomas, comprising 5–15% of colorectal adenomas, are more likely to exhibit malignant transformation compared to tubular adenomas [3]. They have a finger-like villous architecture with dysplastic epithelial cells lining the surface. These lesions are often larger (>1 cm), sessile, and found in the rectum or sigmoid colon.

3. Tubulovillous Adenomas:
Representing a hybrid of the two previous types, tubulovillous adenomas contain both tubular and villous architectural features. They account for approximately 10–20% of adenomas and demonstrate an intermediate risk of malignancy [4].

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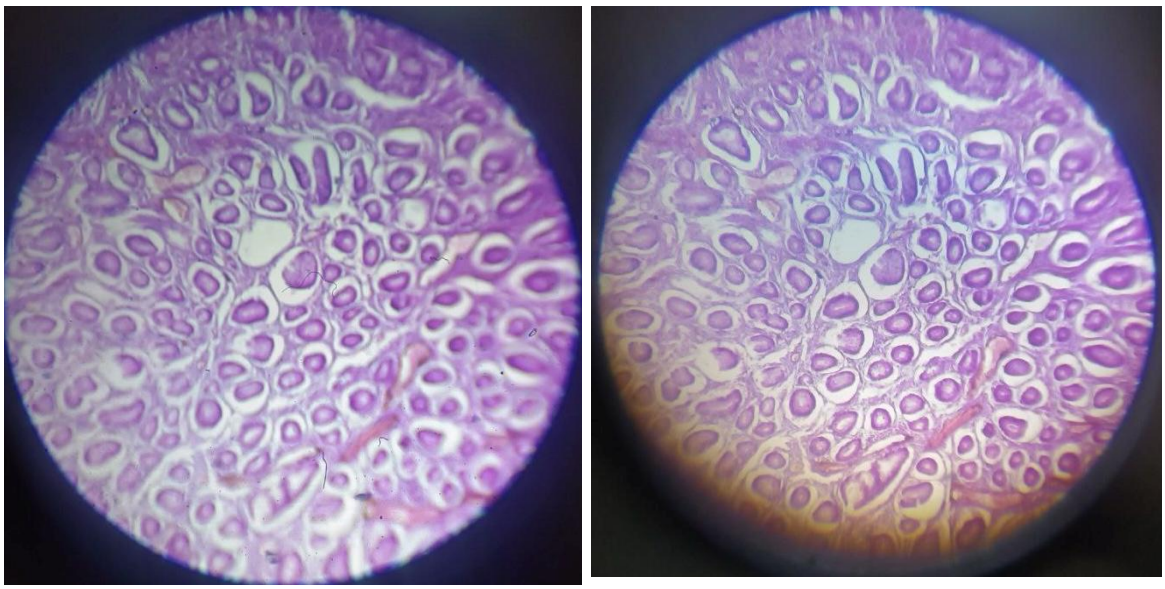
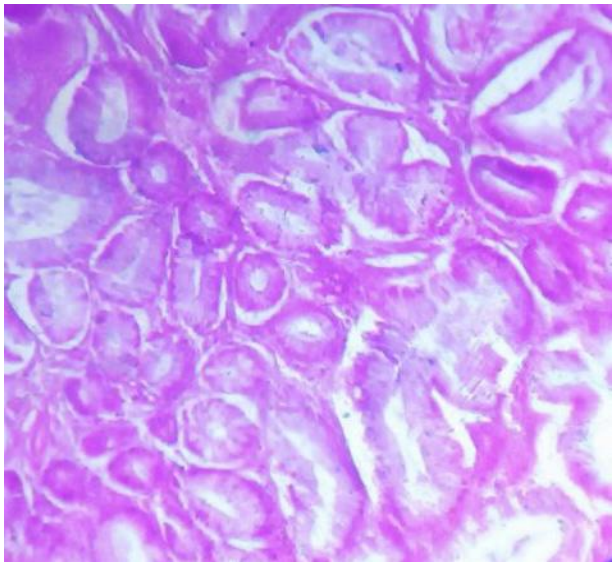
4. Serrated Adenomas:

Serrated adenomas, including sessile serrated lesions (SSLs) and traditional serrated adenomas (TSAs), are characterized by a saw-tooth glandular architecture. These adenomas have distinct molecular pathways and are strongly associated with microsatellite instability and CRC development [5].



1,2-Picture. Microscopical manifestation of large intestinal adenoma. Stained by hematoxylin-eosin method, 40 ob. x 10 oc.

Adenomas of the large intestine display characteristic epithelial dysplasia under the microscope. The cells exhibit elongated, darkly stained nuclei, loss of normal alignment, and crowding with pseudostratification. The architectural patterns differ based on the type: tubular adenomas consist of densely packed glands, villous adenomas feature finger-like projections, and tubulovillous adenomas blend elements of both. Dysplasia may vary in severity from low to high grade, with villous adenomas often showing more pronounced abnormalities.



3-Picture. Microscopical manifestation of large intestinal adenoma. Stained by hematoxylin-eosin method, 40 ob. x 10 oc.

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Morphological Features

1. Dysplasia:

Dysplasia in colorectal adenomas ranges from low-grade to high-grade. Low-grade dysplasia is marked by nuclear hyperchromasia, elongated nuclei, and increased mitotic activity. High-grade dysplasia exhibits more pronounced cellular atypia, loss of polarity, and increased architectural complexity [6].

2. Size and Growth Pattern:

The size of an adenoma is directly proportional to its risk of malignancy. Lesions larger than 2 cm, especially those with a villous or serrated architecture, are associated with a higher likelihood of progressing to invasive carcinoma [7]. Sessile adenomas pose a greater risk than pedunculated lesions due to their growth pattern and difficulty in complete resection.

3. Localization:

Colorectal adenomas are predominantly found in the rectum and sigmoid colon but can occur throughout the large intestine. Proximal adenomas, particularly serrated lesions, have been associated with distinct genetic pathways compared to distal adenomas [8].

4. Histological Characteristics:

The hallmark histological feature of adenomas is the presence of dysplastic epithelial cells. Tubular adenomas are characterized by uniform tubular structures, while villous adenomas exhibit elongated, finger-like projections. Serrated adenomas show crypt dilation, branching, and a serrated epithelial lining.

Clinical Significance

The progression from adenoma to carcinoma is described by the adenoma-carcinoma sequence, which involves a series of genetic mutations, including alterations in APC, KRAS, and TP53 genes [9]. Morphological evaluation of adenomas provides critical insights into their malignant potential and guides clinical decision-making. For instance, high-grade dysplasia, villous architecture, and large size warrant closer surveillance and complete resection [10].

Conclusion

The morphological features of adenomas of the large intestine are diverse and have significant clinical implications. Early detection and accurate morphological assessment of these lesions are essential to prevent progression to colorectal cancer. Further research into molecular pathways and genetic markers will enhance our understanding of adenoma behavior and improve risk stratification strategies.

References

1. Ferlay J, et al. Global cancer statistics. *CA Cancer J Clin*. 2020;70(1):7–30.
2. Morson BC. The polyp-cancer sequence in the large bowel. *Proc R Soc Med*. 1974;67(6):451–457.

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webofjournals.com/index.php/5

3. Winawer SJ, et al. Prevention of colorectal cancer by colonoscopic polypectomy. *N Engl J Med*. 1993;329(27):1977–1981.
4. O'Brien MJ, et al. The serrated pathway to colorectal neoplasia. *Am J Gastroenterol*. 2008;103(4):1001–1011.
5. Rex DK, et al. Serrated lesions of the colorectum. *Gastroenterology*. 2012;142(3):762–772.
6. Hamilton SR, et al. *WHO Classification of Tumors of the Digestive System*. IARC Press; 2019.
7. Gupta S, et al. Risk factors for colorectal cancer. *Clin Gastroenterol Hepatol*. 2020;18(12):2743–2751.
8. Lieberman DA, et al. Guidelines for colonoscopy surveillance after polypectomy. *Gastroenterology*. 2012;143(3):844–857.
9. Vogelstein B, et al. Genetic alterations during colorectal tumor development. *N Engl J Med*. 1988;319(9):525–532.
10. Fearon ER, Vogelstein B. A genetic model for colorectal tumorigenesis. *Cell*. 1990;61(5):759–767.

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