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Clinical Pathological Approach to Polyps of the Colon

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Abstract

Elements of its lumen from the areas of the mucosa or submucosa are called colon polyps. Colon polyps major implications of malignancy. Multiple colorectal referrals are made for evaluation of polyp or polypoid evaluations. Detection excision is the most important step in the prevention of malignancy and histopathological evaluation of colon polyps. Colon polyps are divided into two groups as non-neoplastic and neoplastic. They include hyperplastic polyps as non-neoplastic polyps, while the majority of neoplastic polyps are adenomatous polyps. Adenomatopolyps are transitional as tubular-tubulevous-villi. The incidence is tubular (65-80%), tubulovillous (10-25%) and villous (5-15%) adenomas. This is on the right track of diagnoses. In this product, clinical disease limits are emphasized in polyps.

Keywords: Colon; Polyp; clinical follow-up.

Introduction

Gastrointestinal polyps originating from the mucosa and submucosa are mass-forming proliferative and neoplastic lesions [1]. Gastrointestinal system (GIS) polyps are more common in the colorectal region. Polyps detected as a result of colonoscopic examination may be stalked or sessile, and their sizes are variable [1]. Colorectal polyps are classified as non-neoplastic polyps [hyperplastic (metaplastic) polyps, hamartomatous polyps (juvenile polyposis, peutz jegher syndrome, Cronkhite-Canada syndrome, Cowden syndrome), inflammatory polyps], neoplastic polyps adenomas (tubular, vibullous) [2].

Adenomas can be in the form of mild, moderate or mild dysplasia.Tubular adenomas are usually small and show mild dysplasia [1,2]. Dysplasia increases with increasing polyp diameter and villous ones. 88% mild, 8% moderate, 4% severe dysplasia in tubular adenomas; 58% mild, 26% moderate, 16% severe dysplasia in tubulovillous adenomas; 41% mild, 38% moderate and 21% severe dysplasia are seen in villous adenomas [3]. Inflammatory polyps are polyps that develop in response to chronic inflammation and are seen in conditions such as inflammatory bowel diseases [3]. Most occur in the rectum, their diameter varies between 2-3 cm. Hyperplastic polyps are the most common nonneoplastic polyps [2,3]. Characteristically, they are sessile lesions smaller than 5 mm. Large polyps may be stalked. It is especially seen in the distal colon and rectum [4].

A significant number of colorectal biopsies are performed to evaluate polyps or polypoid lesions. Excision when detected is the most important step in the treatment of colon polyps in terms of prevention of malignancy and histopathological evaluation. Colon polyps are divided into two groups as non-neoplastic and neoplastic. Non-neoplastic polyps predominantly include hyperplastic polyps, while the majority of neoplastic polyps are adenomatous polyps. Adenomatous polyps are divided into tubular-tubulevillous-villi. The incidence is tubular (65-80%), tubulovillous (10-25%) and villous (5-15%) adenomas. Accurate identification of these lesions will encourage better patient care. It is necessary to review the pathology of major colon polyps and polypoid lesions and highlight the most useful diagnostic features and molecular biology. This review focuses on the basic diagnostic features that will enable the surgical pathologist, and especially trained pathology residents, to distinguish between polyp types and polypoid lesions.

Colon Polyps

Polyp is defined as the growth of the normally flat colonic mucosa into the lumen. Although polyps are usually asymptomatic, they can ulcerate and bleed, and if they are located in the rectal region, they can cause rectal pain and even obstruction if they are very large. Colon polyps are generally classified

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as non-neoplastic, hamartomatous, neoplastic, serrated and submucosal [5].

Non-Neoplastic Polyps

Non-neoplastic polyps are classified as hyperplastic, hamartomatous, inflammatory, mucosal and submucosal. Hyperplastic polyps constitute the most common type of polyp in this group. Mucosal polyps are a subtype of polyps that are usually smaller than 5 mm, have the same histopathological structure as the surrounding mucosal tissue, and have no clinical significance. Inflammatory pseudopolyps, on the other hand, are residual mucosal areas with irregular borders, which occur with ulceration and subsequent healing, especially in inflammatory bowel diseases. Their most prominent features are usually multiple and irregular borders. They can be in a separate position in healthy areas, especially in newly healed areas, with peduncle appearance. Many submucosal lesions, such as lymphoid aggregates, lipomas, leiomyomas, hemangiomas, fibromas, carcinoids, and metastatic lesions, form submucosal polyps.

Hamartomatous polyps are polyps that have the characteristics of the tissues in the region where they are normally found, but are seen in a disorganized structure. Although hamartomaous polyps are defined as non-neoplastic, it is also known that they have the risk of becoming cancerous by developing dysplasia. Juvenile polyps, PeutzJeghers polyps, and polyps appearing in Cronkhite Canada syndrome, a rare non-familial disease of unknown etiology, are examples of hamartomatous polyps. Juvenile polyps are hamartomatous polyps containing lamina propria and dilated cystic glands, which are important because they are usually prone to bleeding. Although these types of polyps are seen in all age groups, they are more common in childhood. Other members of non-neoplastic polyps are perineuromas consisting of perineural cells and fibroblastic polyps, another histologically similar group [6].

Neoplastic Polyps

The most common neoplastic polyps are serrated and adenomatous polyps. Serrated polyps are formed by a heterogeneous group with different cancerization possibilities [7]. Hyperplastic polyps, conventional serrated adenomas and sessile serrated adenomas are defined within this group. Although hyperplastic polyps are the most common type of non-neoplastic polyps, they are small nodules and polypoid lesions that are usually indistinguishable from adenomas. They are polyps with normal cellular components and no dysplasia, showing a classical tooth pattern. Proliferation usually occurs from the base of hyperplastic crypts, and this allows differentiation of adenomas and hyperplastic polyps with hematoxylin-eosin dye [8]. These types of polyps are usually located in the rectosigmoid region and are smaller than 5 mm in size [9].

Although distal small hyperplastic polyps are very rare, they have the potential to become cancerous. Many studies show an increased risk of proximal neoplasia in patients with distal hyperplastic polyps. For example, in a meta-analysis evaluating 18 studies, it was shown that proximal neoplasia develops in 21-25% of patients with distal hyperplastic polyps [10].

Sessile Serrated Polyps (SSP) are polyps usually in the proximal colon and classically free of dysplasia. Demonstration of the classical cytological dysplasia area in SSPs shows that this type of polyps may progress to cancer. Traditional serrated polyps are usually found in the rectosigmoid region and contain moderate cytological dysplasia. There is still no consensus on the histological classification and cancerous potential of these polyps [11]. The clinical approach to SSP should be similar to the approach to adenomatous polyps. Adenomas that make up about 2/3 of colon polyps are neoplastic polyps. Although almost all colorectal cancers develop from the background of adenoma, only a few of the adenomas turn into colon cancer.

As a result of studies investigating the timing of adenomatous polyps and colon cancers, the time of cancer development from adenoma is estimated to be between 7-10 years, it is known that this progression is faster in advanced adenomas [12]. Advanced adenoma; The adenoma is defined as containing high-grade dysplasia, being larger than 10 mm, and containing a villous component. The frequency of adenomatous polyps is highly variable. Age is very important in terms of frequency, autopsy studies have shown that adenomatous polyps are detected in 50% of 70-year-old patients. High body mass index is another risk factor for this type of polyps. Evaluating many studies, Ben Q. et al. In a meta-analysis performed by him, it was shown that the risk of colorectal adenoma increases by approximately 19% for every 5-unit increase in body mass index [12].

Adenomatous polyps are more common in men. The incidence of advanced colon adenomas, which have a higher risk of cancer, is 3.8% in those younger than 65 years of age; it is defined as 8.2% in older patients, and it is less than adenomatous polyps [9]. Adenomatous polyps morphologically; Sessile polyps with a base on the colonic mucosa, pedunculated polyps containing a connection between the polyp and the colon wall, flat polyps with a size less than half of its diameter, and depressed polyps that appear collapsed from the ground and have a high risk of cancer are defined. All of the adenomas were dysplastic, and two different dysplasia grades were made as high and low. The definitions of carcinoma in situ or intramucosal carcinoma are also included in the definition of high-grade dysplasia [13].

Tubular adenoma accounts for 80% of colon adenomas. For an adenoma to be classified as tubular, the tubular component must be at least 75%. Villous adenoma constitutes 5-15% of colon adenomas and is recognized by its glands extending from the surface to the center of the polyp. For an adenoma to be classified as villous, the villous component must be at least 75%. Tubulovillous adenomas constitute 5-15% of adenomas and contain a villous component between 26-75% [14].

Adenomas occur during colon screening programs because they are usually asymptomatic. Small adenomas usually do not bleed, so they do not show any findings in the stool occult blood test, but advanced adenomas may reveal bleeding [15]. Villous histology and increase in polyp size are risk factors for

adenomas to turn into cancer. Polyp size greater than 1 cm is an independent risk factor for the development of colorectal cancer and metachronous cancer [11,12].

Villous histology over 25% in adenomatous polyps causes an increased risk of colorectal cancer 1-2% in polyps smaller than 5 mm, 7-12% in polyps 5-10 mm in size, and 20-30% in large adenomas [14]. The number of polyps detected in colonoscopy is another risk factor for metachronous cancers. The risk of re-detection of polyps or cancer in the colonoscopy performed 6 months after the polyp or cancer shown in the first colonoscopy shows a positive correlation with the number of polyps detected in the first colonoscopy. In a meta-analysis, it has been shown that having 1, 2, 3, 4, 5, and more than 5 polyps increases the risk of detecting metachronous advanced adenoma by 9, 13, 15, 20, and 24%, respectively [13].

Colonoscopy is known to be the most appropriate diagnostic method in the evaluation of polyps, since it also provides simultaneous treatment. Although it has been shown to be more specific in diminitive and flat polyps compared to double-contrast barium enema and CT colonoscopy, it is also known that it cannot show most of the small polyps. In the National Polyp Survey, endoscopic removal of adenomas has been shown to reduce the risk of cancer between 76-90%, although it varies according to polyp histological subgroups [14].

In some studies evaluating follow-up in patients with adenoma, there are also studies reporting that it does not provide any risk reduction in terms of colorectal cancer in patients in the average risk group. Cold biopsy forceps, hot biopsy forceps, standard monopolar cautery, endoscopic submucosal dissection, etc. are used to remove polyps detected during colonoscopy. Although there are many different methods such as snare removal, snare removal is the most commonly used method for polyps larger than 5 mm in terms of removing the entire adenomatous tissue. In diminutive lesions, biopsy is removed with forceps and snare in the same way. However, residual tissue may remain after these procedures. For example, studies have shown that 17% residual tissue remains with hot biopsy and 29% with cold biopsy [15].

Polyp detection and follow-up are as important as treatment. In a meta-analysis of eight studies, patients with colorectal adenoma were found to have a 12% risk of developing colorectal cancer in a mean follow-up of 4 years [14,15].

Conclusion

In conclusion, elements of its lumen from the areas of the mucosa or submucosa are called colon polyps. Colon polyps major implications of malignancy. Multiple colorectal referrals are made for evaluation of polyp or polypoid evaluations. Detection excision is the most important step in the prevention of malignancy and histopathological evaluation of colon polyps. Colon polyps are divided into two groups as non-neoplastic and neoplastic. They include hyperplastic polyps as non-neoplastic polyps, while the majority of neoplastic polyps are adenomatous polyps. Adenomatopolyps are transitional as tubular-tubulevous-villi. The incidence is tubular (65-80%), tubulovillous (10-25%) and villous (5-15%) adenomas. This is on the right track of diagnoses. In this product, clinical disease limits are emphasized in polyps.

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