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Analysis of the Misdiagnosis of a Case of Rectal Lymphoid Polyp: a Case Report

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Case Report

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Abstract

Background: Lymphoid polyps are rare benign lesions, mainly in the intestinal tract. But misdiagnosis always happen, because it is difficult to distinguish lymphoid polyp and lymphoma and laterally spreading tumour (LST) solely relying on endoscopic examination. Generally speaking, pathology can help us make a correct diagnosis, but in few cases advanced methods is necessary for diagnosis, such as immunohistochemistry and gene rearrangement.

Case presentation: A 56-year-old female patient was admitted to the ward for endoscopic submucosal dissection (ESD) treatment. She was diagnosed with laterally spreading tumour (LST) in another hospital. Before ESD treatment, we performed a colonoscopy examination on the patient. The result pointed towards rectal lymphoma and did not support the diagnosis of LSTs of the rectum, so we did not perform ESD. Because of the possibility of missed diagnosis and misdiagnosis of common endoscopic biopsy, we performed endoscopic mucosal resection (EMR) biopsy. The results of postoperative pathology, immunohistochemistry and gene rearrangement supported the diagnosis of lymphoid polyps.

Conclusions: The diagnosis of lymphoid polyps always depends on endoscopic examination and pathology. If necessary, advanced methods such as immunohistochemistry and gene rearrangement may be helpful.

Background

Diagnosis is the basis of treatment, even for digestive tract diseases. With the continuous emergence of new endoscopy techniques, the function of endoscopy is becoming increasingly powerful. For experienced endoscopists, many digestive tract diseases can be correctly diagnosed under endoscopy, and some cases can be correctly diagnosed with the help of pathology, but there are still a few cases that cannot be diagnosed by only endoscopy and pathology. Therefore, it is important to combine clinical symptoms with other imaging examinations for diagnosis. If necessary, advanced methods such as immunohistochemistry and gene rearrangement should be used for diagnosis.

We report one case that was first misdiagnosed as LST without biopsy by an unexperienced endoscopist and then was definitively diagnosed as lymphoid polyp by pathology, immunohistochemistry and gene rearrangement.

Case Presentation

The patient, female, 56 years old, was hospitalized in the outpatient department of the external hospital on January 16, 2019, due to intermittent haematochezia for half a year. The first colonoscopy examination showed that a flat protuberance could be seen near the anal margin of the rectum, accounting for approximately 1/2 of the intestinal cavity, with a granular surface. Then, laterally spreading tumour (LST) of the rectum was diagnosed without biopsy, and the patient was admitted to the digestive ward of Nanjing Drum Tower Hospital for endoscopic submucosal dissection (ESD) treatment.

The stool occult blood test (immunoassay) was positive. The tumour markers were as follows: CA-199: 29.42 u/ml; CA-242: 16.32 u/ml. Routine blood and biochemical tests were normal. The second colonoscopy examination in gastroentorolgy department of Nanjing Drum Tower Hospital showed a large number of granular nodules near the anal margin of the rectum without an obvious boundary, the pit pattern was type II after indigo carmine staining, and a large number of dilated vessels could be seen in magnifying endoscopy (Figure. 1 A-D). We found that the possibility of diagnosing lymphoma is high. Considering that it was difficult to make a diagnosis by ordinary biopsy, we performed endoscopic mucosal resection (EMR) biopsy (Fig. 2).The pathological results showed that lymphoid tissue hyperplasia and lymphoid follicular formation in rectal mucosa, which was consistent with lymphoid polyps (Fig. 3). The immunohistochemistry results were as follows:CD3(+ +), CD20 (+ +), CD79a (+ +), Ki67 (approximately 95% +), CD21 (+), Cyclin D1 (-), and CD30 (+) (Fig. 4 A-F). The gene rearrangement detection results showed that no immunoglobulin clonal gene rearrangement was detected (detection sites: 1. IGH-FR1; 2. IGF-FR2; 3. IGH-DH; 4. IGK-VJ 5.IGK-V/in), which was consistent with lymphoid polyps. In conclusion, we made the correct diagnosis of lymphoid polyps. Finally,The patient did not receive ESD treatment, and the bleeding stopped after haemostasis. The patient agreed to regular endoscopy follow-ups, and no bleeding occurred.

Discussion

Lymphoid polyps are more common in adolescents and children than in adults. Its incidence in males is slightly higher than that in females. It can be localized as multiple nodular hyperplasia or, to a lesser extent, a single polypoid mass [1]. Most polyps are sessile and found in the rectum, although they have sometimes been reported in the descending colon and caecum [2–4]. Histologically, lymphoid polyps show well differentiated lymphoid follicle tissue, which is limited to the submucosa and covered with normal mucosa. There are many well-defined lymphoid follicles in the mucosa and submucosa. The germinal centre is obviously enlarged. Eosinophils, lymphocytes, plasma cells and other cells are infiltrated between the follicles, and the boundary between the proliferating follicles and the surrounding tissue is clear. The main clinical manifestations of lymphoid polyps are abdominal pain, haematochezia or changes in defecation habits. A small number of patients may not have any clinical symptoms [4-6]. The aetiology of the disease is considered to be related to immune deficiency in the body. It has also been reported that flagellate and Helicobacter pylori infection are involved in the pathogenesis of the disease [7]. At present, most people believe that lymphoid polyps are a self-limited disease with a good prognosis, but some scholars believe that the disease has a tendency towards a low degree of malignant change. Because of the difficulty of preoperative diagnosis, if the malignant change cannot be excluded or repeated gastrointestinal bleeding is difficult to control, surgery is still recommended. In this case, after communication with the patient, she agreed to regular endoscopy follow-ups.

The concept of LST was first proposed by Professor Kudo Sinea in 1993. LSTs are generally defined as superficial lesions ≥10 mm in diameter that typically extend laterally rather than vertically along the colonic wall [8-11]. According to its surface morphology, it can be categorized into 2 subtypes: granular type and nongranular type. Among them, the endoscopic characteristics of the granular type are similar

to those of lymphoproliferative diseases, such as lymphoid polyps. Without careful observation, they are easily confused with each other, but the pathological results of biopsy are helpful for endoscopists to make correct diagnosis.

There are three types of morphological characteristics of lymphoma under endoscopy: diffuse type, polyp type and ulcer type. Among them, the polyp type is very similar to lymphoid polyp. In addition to histopathological detection, it is often necessary to use immunohistochemistry or even gene rearrangement technology to distinguish between the different types of lymphoma and lymphoid polyps [12]. In this case, we used colonoscopy (CF-HQ290/OLYMPUS) to carefully observe the lesions according to the sequence of conventional white light colonoscopy, chromoendoscopy, magnifying chromoendoscopy. We found that the possibility of diagnosing lymphoma is high. Considering that it is difficult to make a diagnosis by ordinary biopsy, we performed endoscopic mucosal resection (EMR) biopsy.The pathological results showed that lymphoid tissue hyperplasia and lymphoid follicular formation in rectal mucosa, which was consistent with lymphoid polyps. CD3 and CD20 immunostains showed the typical distribution of T-lymphocytes in the follicles and B-lymphocytes in the intervening zones between the follicles, respectively. However, high ki-67 proliferating indicated high degree of malignancy. Therefore, we perfected monoclonal immunoglobulin gene rearrangement further and the results showed that no immunoglobulin clonal gene rearrangement was detected, which was consistent with lymphoid polyps. In conclusion, we made the correct diagnosis of lymphoid polyps. Gene rearrangement is a normal process in the body. Normal lymphocytes are polyclonal during development, but lymphoma is a monoclonal rearrangement, showing a single pattern of rearrangement in genes; that is, all tumour cells have the same immunoglobulin or TCR gene rearrangement. Because of the high correlation between gene rearrangement analysis and traditional morphological diagnosis and classification, gene rearrangement has high specificity (99%) and appropriate sensitivity (83%) in the diagnosis of lymphoproliferative diseases [13]. No immunoglobulin clonal gene rearrangement was detected in this case, which supports the diagnosis of lymphoid polyps.

The causes of misdiagnosis in the first colonoscopy were analysed as follows: **(i)** The initial endoscopist did not know enough about the disease of lymphoid polyps and did not pay enough attention in the examination process. This endoscopist made a wrong diagnosis because he/she saw only part of the lesion and did not perform a biopsy. **(ii)**The initial endoscopist did not use the staining or magnifying functions of the endoscope to observe the lesion in detail. The lessons are as follows: **(i)** Lesions of the rectum near the anus can be easily missed or misdiagnosed simply by direct endoscopic observation. The whole scope and real shape of the lesions should be observed by the combination of direct and reverse endoscopic observation. **(ii)**Endoscopists should place great emphasis on the pathological diagnosis of biopsy under the endoscope; it is necessary to take an accurate biopsy, repeated biopsy, EMR biopsy and diagnostic ESD for lesions that are difficult to diagnose. **(iii)**For diseases that are still difficult to diagnose by biopsy, clinical symptoms and other imaging examinations may be helpful. If necessary, advanced methods, such as immunohistochemistry and molecular biology technology, can be used for diagnosis. **(iv)** With the development of new endoscopy techniques, the function of endoscopy is

becoming increasingly powerful, and we should fully understand and make use of it to improve the diagnostic level of endoscopy.

Abbreviations

LST:Laterally spreading tumour; ESD:Endoscopic submucosal dissection;

EMR:Endoscopic mucosal resection.

Declarations

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Authors' contributions

Yong-Ting Lan and Hua-Shang contributed equally to the work.

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Availability of data and materials

The dataset supporting the findings and conclusions of this case report is included within this article.

Ethics approval and consent to participate

The study has been approved by the Ethics Committee of Nanjing Drum Tower Hospital in Prague in compliance with the Helsinki Declaration.

Consent for publication

Consent was obtained for the publication of this case report.

Competing interests

The authors declare that they have no competing interests.

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Figures

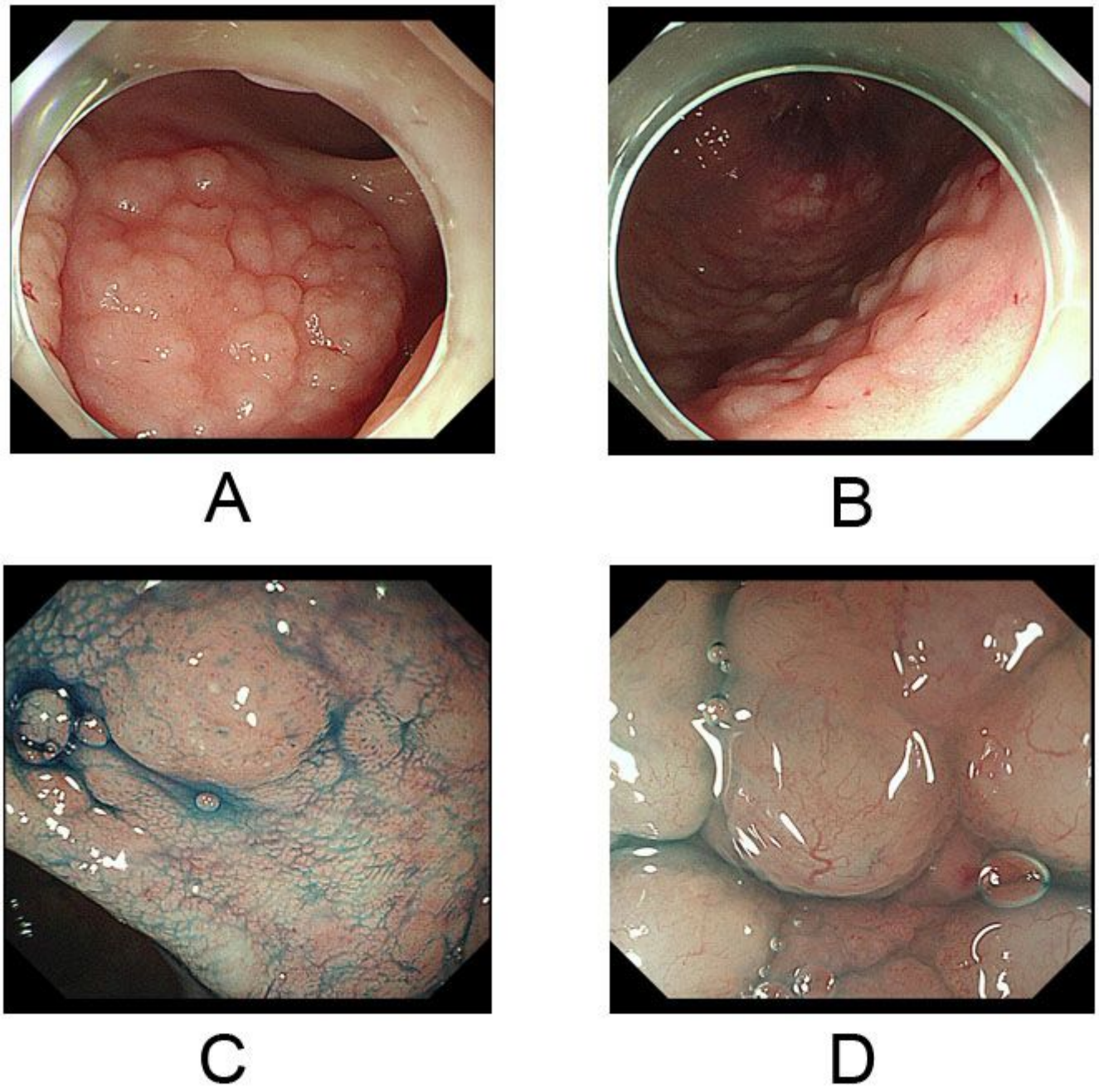

Figure 1

Endoscopic features of lesion. (A): Direct endoscopic observation with conventional white light colonoscopy showed that a flat protuberance could be seen near the anal margin of the rectum, accounting for approximately 1/2 of the intestinal cavity, with a granular surface. (B): Reverse endoscopic observation with conventional white light colonoscopy showed a large number of granular nodules near the anal margin of the rectum without an obvious boundary. (C): Chromoendoscopy showed the pit pattern was type II after indigo carmine staining. (D): Magnifying chromoendoscopy showed a large number of dilated vessels.

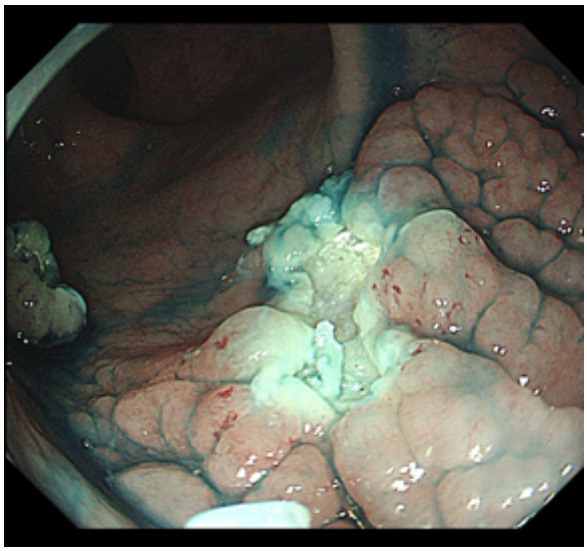

Figure 2

Endoscopic mucosal resection (EMR) was performed to get a more accurate endoscopic biopsy.

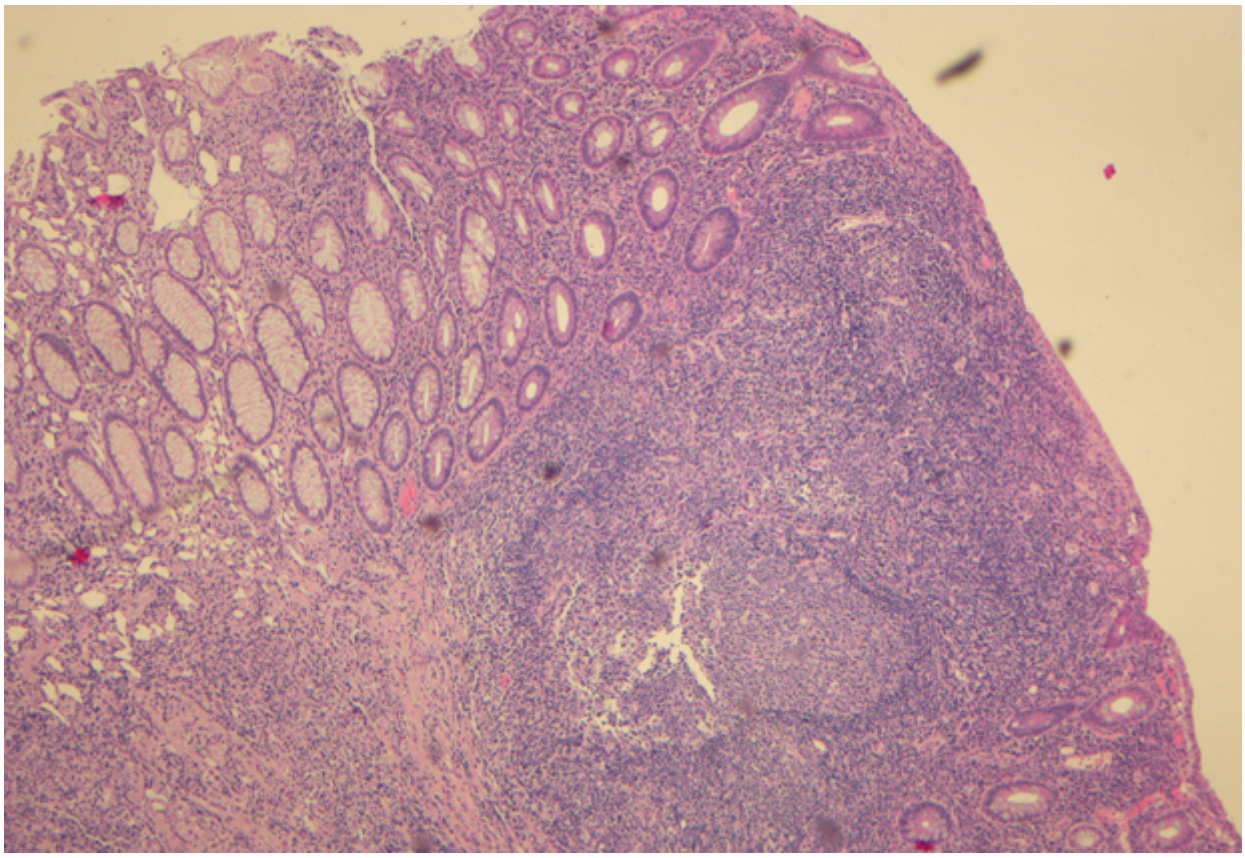

Figure 3

The pathological results of EMR biopsy showed that lymphoid tissue hyperplasia and lymphoid follicular formation in rectal mucosa.

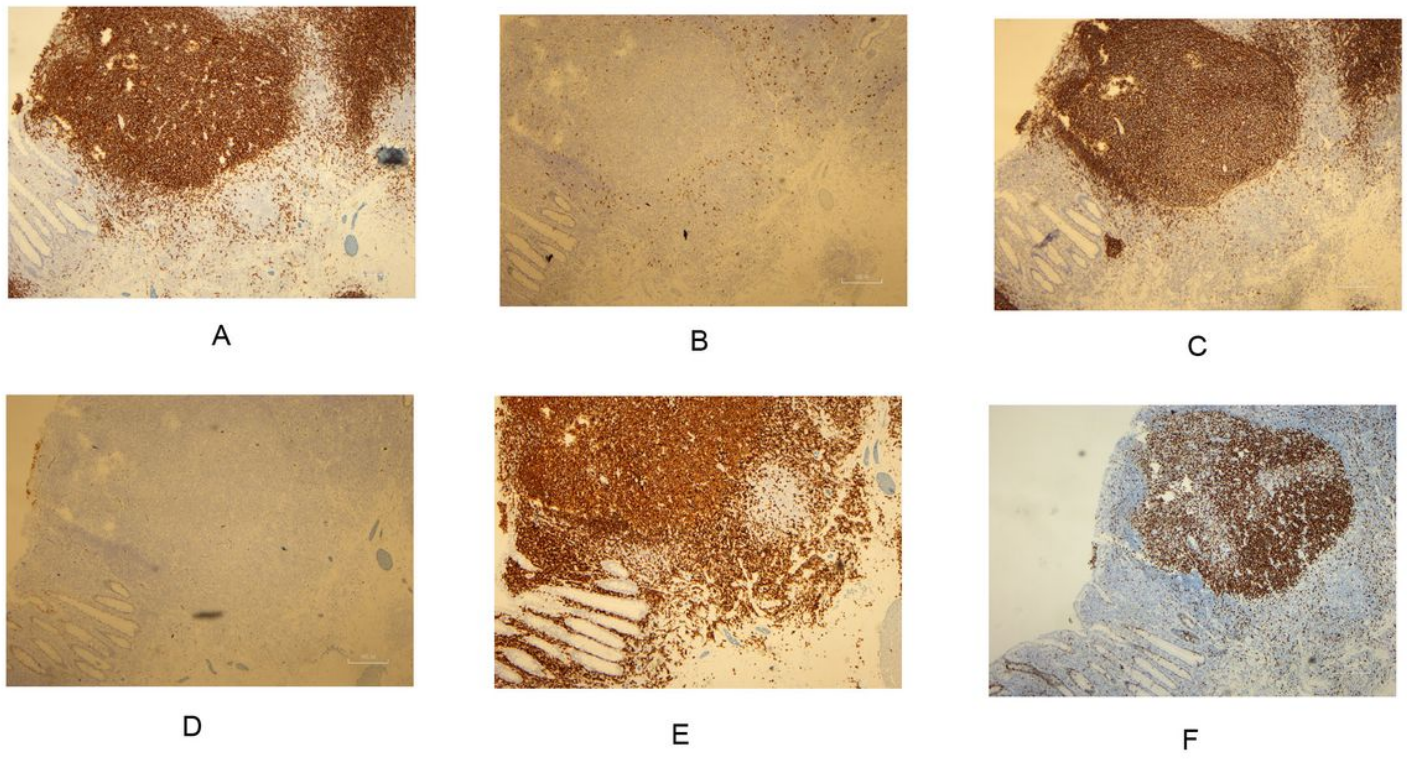

Figure 4

The immunohistochemistry results of EMR biopsy. (A): CD20(++□(B): CD30(+) (C):CD21(+) (D):CyclinD1(-) (E):CD79a(++) (F):ki67(□95%+).

Supplementary Files

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