CASE REPORT

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Appendiceal Orifice Inflammation in an 8-Year-Old Girl with Ulcerative Colitis Complicating Wilson's Disease

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Appendiceal orifice inflammation (AOI) may occur as a skipped lesion in ulcerative colitis (UC). Cases of ulcerative colitis complicated by Wilson's disease have also been reported. We report herein a case of AOI that occurred as a missed lesion in an 8-year-old girl with UC complicating Wilson's disease, which is rare in children. **(Gut Liver 2010;4:126-128)**

Key Words: Inflammatory bowel disease; Ulcerative colitis; Orifice of appendix; Child; Hepatolenticular degeneration

INTRODUCTION

Ulcerative colitis (UC) is a form of chronic inflammatory bowel disease that is universally recognized as a condition where diffuse lesions begin from the rectum and extend proximally without a break. However some previous reports have suggested that appendiceal orifice inflammation (AOI) may occur as a skipped lesion in UC.[1,2] Wilson's disease is a rare genetic disorder of copper metabolism. One adult case report of UC complicating Wilson's disease has appeared, and suggested a possible association of UC with Wilson's disease.[3] And 16-year-old woman was diagnosed by UC ninety months after transplantation for fulminant Wilson's disease in 1997.[4] We report on our experience with a pediatric UC patient diagnosed with complicating Wilson's disease and presenting with skipped AOI.

CASE REPORT

An 8-year-old girl visited the Asan Medical Center with a history of 2 weeks of hematochezia (2x/day) and loose stools (3x/day). When 10 months of age, she had been diagnosed Wilson's disease, being heterozygous for the ATP7B mutation of R776L (the other allele was not defined) with laboratory data (AST/ALT 274/556 IU/L, Copper, 24 hr urine 302 ug/day). She had been taking Trientine. She also complained of lower abdominal pain and weight loss (1 kg over 1 month). Physical examination showed no abnormality. Laboratory data yielded an, ESR of 9 mm/hr, CRP 0.5 mg/dL, leucocytes 6,100/mm^3, hemoglobin 13.2 g/dL, and platelets $324\times10^3/mm^3$. The pANCA test was negative. Colonoscopy revealed loss of vascularity, fine erosions, and mucus exudate on the far distal rectum and multiple erosions, erythema, and mucus exudates on the appendiceal orifice (Fig. 1). The mucosa between the distal rectum and the appendix was normal. Rectal biopsies showed chronic inflammation with lymphoid aggregates and focal cryptitis. An appendiceal biopsy yielded findings similar to those obtained from rectal examination.

Oral mesalazine (1,000 mg/day: 30 mg/kg/day) was started and continued for 1 month without improvement of hematochezia or diarrhea. Thereafter, we added a daily budesonide enema and increased the dose of mesalazine to 1,500 mg/day (45 mg/kg/day); the patient's symptoms improved. Three months later, our patient was in remission and the budesonide enema was gradually withdrawn. During withdrawal, we switched the patient

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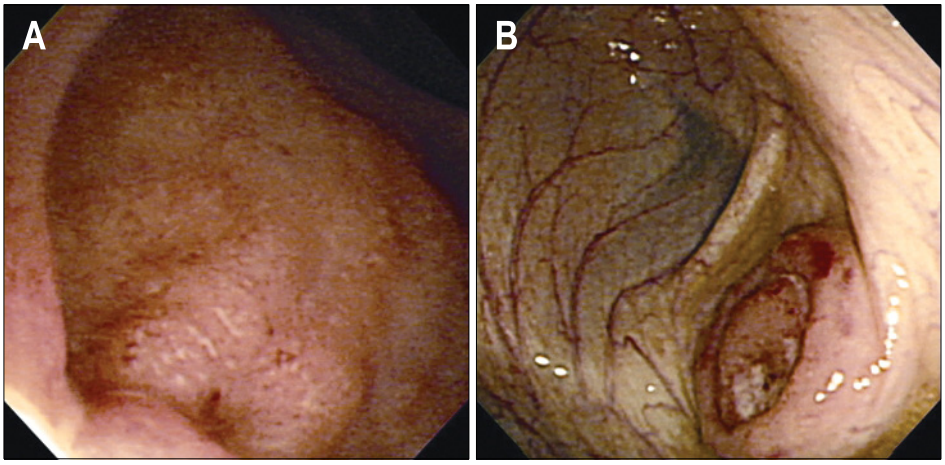

Fig. 1. Colonoscopic findings in our patient. (A) The far distal rectum shows loss of vascularity, fine erosions, and mucus exudates. (B) The mouth of the appendix exhibits erythema, mucus exudates, and erosions.

from Trientine to D-Penicillamine because of Trientine side effects, but recurrence of hematochezia was seen 7 months later. At that time, treatment with mesalazine rectal suppositories and oral mesalazine medication improved the hematochezia. Our patient, now on oral mesalazine only (she dislikes rectal suppositories) has had no hematochezia for the last 10 months.

DISCUSSION

UC is characterized by diffuse inflammation of the large intestine, of unknown etiology, and as a rule begins in the rectum and extends continuously in an oral direction. However, discontinuous lesions may be found, although rarely.

We report a case in which skipped lesions at appendiceal orifice were endoscopically observed. In this patient, the appendiceal orifice was involved in the skipped lesion and the rectum showed a distal lesion. Remission was initially achieved with mesalazine and budesonide enema although the patient relapsed 2 months later.

Yang and colleagues have reported that AOI, presenting as a skipped lesion, was common in newly diagnosed UC adult patients with no history of medical treatment, suggesting that the distant skipped lesion was not caused by medical therapy.[5] The cause of AOI in UC patients is unclear, but some reports have suggested that the appendix plays an immune-regulatory role. Matsushita and coworkers studied immune-imbalances in the appendices of UC patients and reported that the appendix is a priming site for UC development, showing an enhanced CD4/CD8 cell ratio, and a prominent population of CD4+CD69+ T cells.[6] Yamagishi and colleagues explored the relationship between the continuous distal lesion of UC and the skipped periappendiceal lesion by observing colonoscopic changes in both lesions and reported that activity in the distal lesion correlated well with that in the skipped periappendiceal lesion.[7] Matsumoto and co-workers used colonoscopy to study two UC groups with or without AOI. The endoscopic remission rate at 12 months was higher in the AOI-positive group than in the AOI-negative group.[8,9] Recent studies reported that appendectomy reduces the risk of UC development and improves the course of disease.[10-12] In contrast, however, Byeon and colleagues reported that in patients with distal UC, AOI showed no prognostic implication in terms of remission, relapse or proximal disease extension.[13]

In adults, appendiceal involvement as a skipped lesion of UC is not uncommon, presenting in 15-86% of patients.[5] On the other hand, this condition is rare in children, for several reasons. One is bowel preparation difficulty in pediatric patients; large amount of feces remains in the cecum and interferes with clear imaging. Another is that UC was previously thought to be always continuous from the rectum and, therefore, insertion of an endoscope in the oral direction was discontinued in many cases when a normal region appeared after lesions were seen lower in the intestine. Also, because of the difficulties associated with colonoscopy in children, such examinations were often not performed.

Regarding a possible association between UC and Wilson's disease, Torisu and colleagues reported a case of UC with Wilson's disease similar our patient and strongly suggested that Wilson's disease was an exacerbating factor for UC, considering the potential role of copper in dealing with oxygen radicals and in other antioxidant defenses.[3] However association may have been isolated as no further report has appeared in the literature. In addition a 16-year-old Caucasian woman was diagnosed as UC following transplantation for fulminant Wilson's disease in 1997.

In conclusion, we report a skipped appendiceal lesion

in an 8-year-old girl with UC and Wilson's disease; this is rare in children. The findings suggest that AOI in pediatric UC patients needs to be evaluated. Also, further evaluation of a possible relationship between Wilson's disease and UC is warranted.

REFERENCES

1. Ladefoged K, Munck LK, Jorgensen F, Engel P. Skip inflammation of the appendiceal orifice: a prospective endoscopic study. Scand J Gastroenterol 2005;40:1192-1196.
2. Okawa K, Aoki T, Sano K, Harihara S, Kitano A, Kuroki T. Ulcerative colitis with skip lesions at the mouth of the appendix: a clinical study. Am J Gastroenterol 1998;93:2405-2410.
3. Torisu T, Esaki M, Matsumoto T, et al. A rare case of ulcerative colitis complicating Wilson's disease: possible association between the two diseases. J Clin Gastroenterol 2002;35:43-45.
4. Worns MA, Lohse AW, Neurath MF, et al. Five cases of de novo inflammatory bowel disease after orthotopic liver transplantation. Am J Gastroenterol 2006;101:1931-1937.
5. Yang SK, Jung HY, Kang GH, et al. Appendiceal orifice inflammation as a skip lesion in ulcerative colitis: an analysis in relation to medical therapy and disease extent. Gastrointest Endosc 1999;49:743-747.
6. Matsushita M, Takakuwa H, Matsubayashi Y, Nishio A, Ikehara S, Okazaki K. Appendix is a priming site in the development of ulcerative colitis. World J Gastroenterol 2005;11:4869-4874.
7. Yamagishi N, Iizuka B, Nakamura T, Suzuki S, Hayashi N. Clinical and colonoscopic investigation of skipped periappendiceal lesions in ulcerative colitis. Scand J Gastroenterol 2002;37:177-182.
8. Matsumoto T, Nakamura S, Shimizu M, Iida M. Significance of appendiceal involvement in patients with ulcerative colitis. Gastrointest Endosc 2002;55:180-185.
9. Matsushita M, Uchida K, Okazaki K. Role of the appendix in the pathogenesis of ulcerative colitis. Inflammopharmacology 2007;15:154-157.
10. Buergel N, Schulzke JD, Zeitz M. Appendectomy reduces the risk of development of ulcerative colitis. Chirurg 2002;73:805-808.
11. Okazaki K, Onodera H, Watanabe N, et al. A patient with improvement of ulcerative colitis after appendectomy. Gastroenterology 2000;119:502-506.
12. Scott IS, Sheaff M, Coumbe A, Feakins RM, Rampton DS. Appendiceal inflammation in ulcerative colitis. Histopathology 1998;33:168-173.
13. Byeon JS, Yang SK, Myung SJ, et al. Clinical course of distal ulcerative colitis in relation to appendiceal orifice inflammation status. Inflamm Bowel Dis 2005;11:366-371.