Value of colonoscopy with high Fecal Calprotectin, A case of Juvenile polyp

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Introduction

Fecal calprotectin (FC) can be used as a non-invasive biomarker of gut inflammation for diagnosis and monitoring of underlying IBD. We are presenting a case of a 6-year-old with rectal bleeding and elevated fecal calprotectin identified as having a juvenile polyp.

Case Description

A 6-year-old male was evaluated for hematochezia. Abdominal pain has been ongoing for at least one month. He had at least one bowel movement daily with bright red blood clots. His abdominal pain was intermittent, diffuse, did not radiate to the back or shoulder, and had not awakened him from sleep. On further investigation, his fecal calprotectin was elevated at 1140 µg/g. Family history for gastrointestinal disorders was not significant. As there was a concern for colitis, a colonoscopy was performed, and a 50 mm pedunculated polyp was found in the sigmoid colon [A], which was removed with a hot snare; the rest of the colon and ileum was normal. Histopathology of that polyp showed numerous cystically dilated crypts, ulcerated surface and negative for dysplasia [B,C], findings consistent with Juvenile/retention polyp.
After removing that polyp, the patient's hematochezia resolved.

Discussion

Calprotectin is a calcium and zinc-binding protein of the S-100 family mainly found in neutrophils but also in monocytes and macrophages. The presence of calprotectin in feces indicates bowel inflammation, and it can be measured with an ELISA and its stable up to 7 days in feces. For adults and children over 4 years, a 50 µg/g cut-off level has been well established for diagnostic purposes. However, calprotectin values over 500 to 600 µg/g are highly predictive of IBD or food infections. FC is a valuable biomarker for diagnosis, follow-up, and evaluation of response to therapy for several pediatric gastrointestinal diseases, including inflammatory bowel disease, nonspecific colitis (infectious or allergic) and necrotizing enterocolitis. Elevated levels of FC may indicate juvenile polyps in children as juvenile polyps are composed of inflammatory cells, including many neutrophils, and the mucosal surface is often very friable. According to a study that included 266 children, Juvenile polyps were detected in 12 (4.5%) children[1]. Examination with colonoscopy is almost always warranted in the pediatric population with elevated levels of fecal calprotectin. In the case of Juvenile polyps, FC levels are expected to trend down after polypectomy

Fig 1- A. Colonoscopy showing a pedunculated polyp in sigmoid colon.

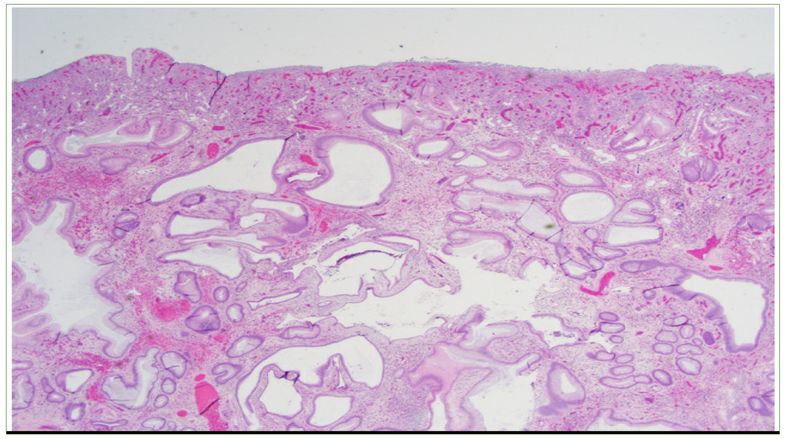

Fig 1-B. Histopathology of polyp showing numerous cystically dilated crypts, ulcerated surface and negative for dysplasia

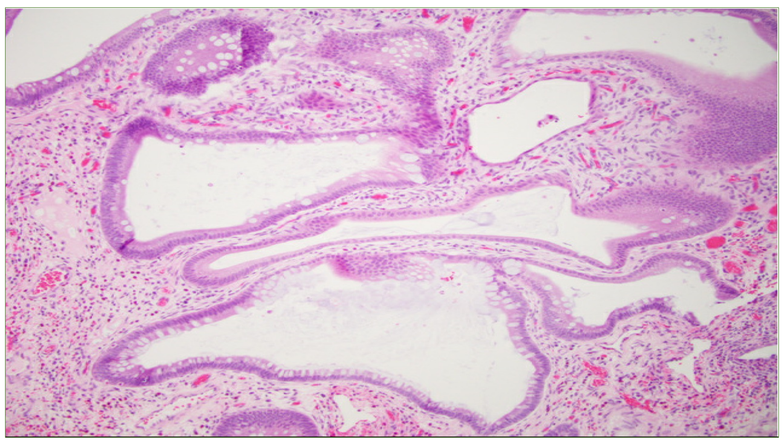

Fig 1- C. Intermediate power magnification

References

1. Olafsdottir I, N.A, L.E, T.E, A.D. Value of Fecal Calprotectin as a Biomarker for Juvenile Polyps in Children Investigated With Colonoscopy. doi: 10.1097/MPG.0000000000000893. PMID: 26147630.