

Colonic Angiodysplasia: An Unusual Cause Of Unexplained Gastrointestinal Bleeding In A Child, Case Report

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Abstract

Angiodysplasia is a vascular anomaly in which the blood vessels are ectatic, tortuous with minimal muscular lining,

It can affect any segment of the gastrointestinal tract, with single or multiple lesions at different sites. In children, the left hemicolon is the most commonly affected area. The underlying pathophysiological mechanisms and epidemiology of the disease remain unknown.

The clinical manifestations of angiodysplasia vary widely, with bleeding of varying intensity that can initiate or recur at any life stage. Diagnosis typically involves the use of endoscopic and radiological tools. Treatment options encompass pharmacological, endoscopic, and surgical resection therapies.

This article presents the case of an 8-year-old girl who experienced recurrent rectal bleeding, necessitating an endoscopic investigation to identify the source of the bleeding.

Key words: Angiodysplasia; Digestive hemorrhage

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I. Introduction:

Angiodysplasia is a vascular malformation affecting the mucosal and/or submucosal layers of the gastrointestinal tract, with the potential for localization anywhere along its length. Despite its recognition as a significant cause of gastrointestinal (GI) bleeding in the elderly, angiodysplasia is an exceptionally rare diagnosis in younger adults, particularly in children. The precise pathogenesis of angiodysplasia remains unclear, and its etiology in pediatric cases is unknown.

While angiodysplasia can manifest with substantial gastrointestinal bleeding, it is most frequently found in the small intestine and the left side of the colon in children. The diagnostic tools commonly employed for detecting angiodysplastic lesions include CT angiography and endoscopic procedures, which also serve as optimal therapeutic options. This article details the case of a child with angiodysplastic lesions specifically localized in the colon.

II. Case:

An 8-year-old girl, previously well and healthy, was presented with rectal bleeding since the age of 7. There was no history of constipation, abdominal pain or other bleeding tendencies. Clinically, the patient was healthy, not pale or jaundiced, no skin lesions, and the abdomen was soft, with no tenderness, masses or organomegaly. There were also no anal fissures or hemorrhoids, and the other systems were normal.

Initial investigations revealed normal hemoglobin levels (14, 7 g/dl), mean corpuscular volume was 84.1 fL, mean corpuscular hemoglobin was 30, 9 pg/cell, a correct hemostasis panel and a slightly low ferritinemia at 19ug/l

Colonoscopy showed multiple recto-colonic angiodysplasia extending from the middle rectum to the cecum. No other pathological lesions were observed.

The evolution was marked by the cessation of rectal bleeding and the stability of the hemoglobin level, so we did not opt for endoscopic treatment, we kept him under surveillance.

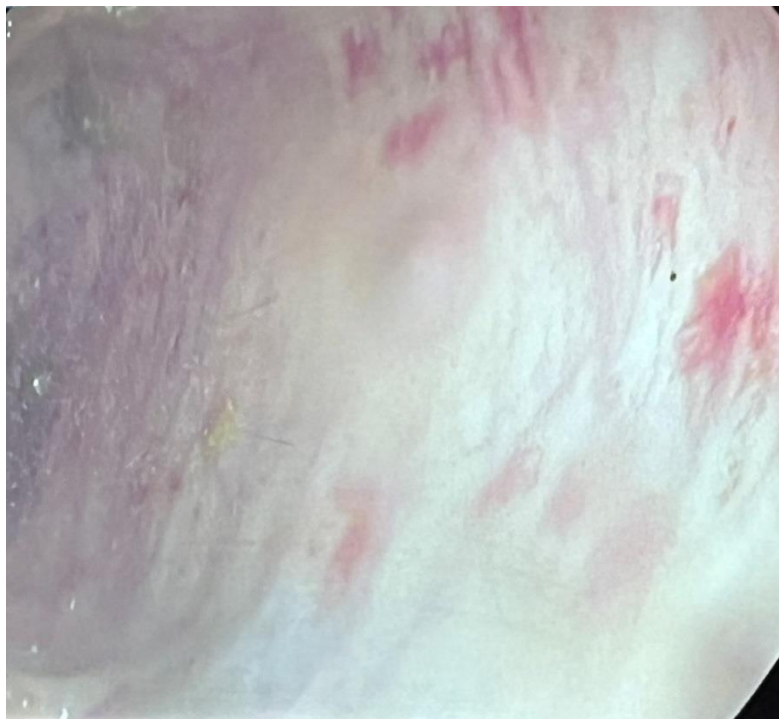


Figure 1 : Colonoscopy Of Angiodysplasia In The Sigmoid Colon



**Figure 2
Colonoscopy Of Another Angiodysplasia In The Right Colon**

III. Discussion:

GI angiodysplasia can be defined as the finding of abnormal, ectatic, dilated, tortuous and usually small (less than 10 mm) blood vessels observed between the mucous and submucosal layers in any part of the gastrointestinal tract. Histologically, the affected vessels are solely covered by endothelium, with minimal or no smooth muscle presence. [1]

It is recognized as one of the contributors to gastrointestinal bleeding, occurring more commonly in adults, whereas it represents a rare pathology in children. [2] To date, there are no studies of prevalence in the

child population. Cases have been documented in children ranging from the neonatal period to adolescence, with a higher occurrence in males and an average age of diagnosis at 7.1 years [3]

The pathophysiology of angiodysplasia in children remains unclear, but it is believed to have a distinct origin compared to adults. In the case of adults, the widely accepted pathophysiological theory involves partial, intermittent, and gradual obstruction (Boley's theory) at the point where submucosal veins intersect with the muscular layer, leading to dilation and tortuosity in the veins, venules, and capillaries of the mucosa and submucosa. This occurs due to increased pressure resulting from repetitive spasmodic contractions. [4]

One of the prevailing clinical manifestations is gastrointestinal bleeding, which can initiate at any point in life, displaying a recurring pattern and varying in intensity. In certain individuals, these episodes may give rise to anemic symptoms (observed in 94.4% of cases), necessitating transfusions in 61.1% of children. Alternatively, the diagnosis may be incidental in some cases. Additionally, abdominal pain (55.6%) and hematochezia/melena (50%) may manifest [2, 5].

Diagnostic methods utilized in cases of angiodysplasia encompass colonoscopy, selective visceral angiography, and operative angiography, each demonstrating variable success rates. The pivotal investigation for angiodysplasia diagnosis is angiography or arteriography, which locates and delineates the lesion. [2], in children, the most common site is the left hemi-colon (rectosigmoid), while in adults, it tends to affect the cecum and right colon [3]. Recent evidence indicates that up to 10% of patients undergoing evaluation through endoscopy, endoscopic capsule, and colonoscopy may exhibit angiodysplastic lesions in the small intestine, distributed as follows: 50% in the duodenum, 37% in the jejunum, and 15% in the ileum. Additionally, angiodysplastic lesions are observed in 50% of cases in the stomach [6]

There is currently no established treatment protocol, and decisions related to this matter rely on past experiences and information gleaned from case reports. Various treatment modalities are employed, including endoscopic therapy involving techniques such as coagulation with argon plasma, application of mechanical clips, multipolar electrocoagulation, and laser photocoagulation. Although endoscopic therapy is deemed effective, the recurrence rates of bleeding are notably high, particularly in cases situated in the small intestine [1]

Superselective transcatheter embolization has demonstrated effectiveness in 80-90% of patients, and it holds the advantage of being applicable in cases of recurrent bleeding. Complications associated with this treatment encompass hematomas, intestinal infarction, arterial dissection, thrombosis, and pseudoaneurysms. These complications may occur in up to 9% of patients, with serious complications being less than 2% [3]

Additional treatment options involve somatostatin analogs, which exert their effects through various mechanisms. These mechanisms include the inhibition of angiogenesis, reduction of splanchnic and duodenal blood flow, elevation of vascular resistance, enhancement of platelet aggregation, and decreased mesenteric and portal blood flow. [7]

Ultimately, surgical resection, considered a curative option, is directed at the areas affected by angiodysplasia. This approach is reserved for cases of bleeding where other alternatives prove ineffective, as seen in the instance of the first patient [8]

IV. Conclusion:

Gastrointestinal (GI) angiodysplasia is an uncommon cause of gastrointestinal bleeding in children. Nevertheless, it is crucial to consider it in the differential diagnosis, especially when a child experiences recurrent bleeding. This anomaly can affect various segments of the digestive tract simultaneously. While in adults, it is viewed as a pathology associated with aging, its origin in children remains unclear. Diagnosis often experiences delays, and although there is no gold standard test, endoscopic and radiological studies can aid in the diagnostic process.

Regarding therapeutic options, there are several choices, including endoscopic therapy, transcatheter embolization, surgery, and certain medications such as somatostatin analogues. However, the selection of the appropriate treatment depends on the patient's clinical condition, the availability of therapies, and the expertise of the multidisciplinary treatment team.

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