ANGIODYSPLASIA OF THE SMALL AND LARGE INTESTINE: A REPORT OF THREE CASES

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ABSTRACT

INTRODUCTION: Angiodysplasia is a rare lesion (0.82% prevalence) characterised by enlarged, abnormally dilated blood vessels in the mucous or submucous sheath of the gastrointestinal tract. This condition clinically manifests with acute or chronic bleeding from the gastrointestinal tract. Typically the diagnosis is based on endoscopic findings and histological characteristics of the distorted vascular structures. Angiodysplasia is quite a common finding in elderly patients. However, the reasons for the anomaly observed with advancing age are yet to be revealed.

CASE REPORT: The aim of this report is to highlight three cases of intestinal angiodysplasia histologically confirmed in patients at 47, 60 and 66 years of age. Histological examination using light microscopy revealed different in size and shape dilated, filled with blood vessels surrounded by oedematous, inflamed stroma in the mucosal and submucosal layer of the intestine.

CONCLUSION: Angiodysplasia is considered to be the second most common cause of gastrointestinal bleeding. This makes an adequate histologically confirmed diagnosis of this anomaly crucial for a patient's quality of life.

Keywords: *gastrointestinal tract, gastrointestinal bleeding, angiodysplasia*

INTRODUCTION

Angiodysplasia, also called vascular ectasia or arteriovenous malformation, is a rare lesion characterized by enlarged, abnormally dilated blood vessels in the mucous or submucous layers of the gastrointestinal tract (1-4). Usually the lesions of angio-

dysplasia develop in the caecum or ascending colon and are less common in the small intestine or upper gastrointestinal tract (3,5,6). Typically the diagnosis is based on endoscopic and histological findings of numerous fragile, distorted blood vessels beneath the epithelial covering. This condition clinically manifests with acute or chronic bleeding from the gastrointestinal tract accounting for 5-6% of all lower gastrointestinal bleedings. Usually the haemorrhagic episodes tend to be occult and random in nature. In 90% of cases the bleeding stops spontaneously and the patients present with iron deficiency anaemia as a result of chronic blood loss (6).

Angiodysplasia is quite a common finding in elderly patients. However, the aetiology and pathogenesis of this anomaly and its correlation with advancing age is yet to be fully revealed (6,7). The aim

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Received: April 7, 2016

Accepted: November 8, 2017

of this report is to highlight three cases of histologically confirmed intestinal angiodysplasia.

CASE REPORTS

The aim of this report is to highlight three cases of intestinal angiodysplasia histologically confirmed in patients at 47, 60 and 66 years of age. We report two cases of patients without reported bleeding from the gastrointestinal tract and one case with melena. All three patients however appeared to have laboratory data consistent with iron deficiency anaemia.

Biopsy tissue samples were routinely fixed, embedded in paraffin and stained with Haematoxylin and Eosin. Histological examination revealed different in size and shape dilated, filled with blood vessels surrounded by oedematous, inflamed stroma.

Data of all three patients are presented in Table 1. Patient number 3 will be discussed in little more detail for the demonstration of the classical clinical course.

Fig. 1. Patient 1: abnormal, dilated, undulating veins, venules and capillaries crowded in the mucosa and submucosa of the small intestine (H&E, orig.m. x 400).

ation, approximately 40 cm from Bauhin's valve, a small angiodysplastic lesion was found. The gross examination of surgical resectate from the small intestine and colon showed signs of haemorrhages. His-

Table 1. Clinical features of the patients

Variable	Patient 1	Patient 2	Patient 3
Age/Sex	64/female	58/female	47/male
Presentation	Anaemia	Anaemia	Anaemia and recurrent melena
Affected site	Small intestine	Small intestine	Small intestine and colon
Method of detection	During surgery	During surgery	During surgery
Outcome	Lost to follow-up	Lost to follow-up	Fatal termination of the disease

Patient 1 and Patient 2: In the first two cases, during gross examination of the resected specimen, no vascular lesions or haemorrhages were observed. Therefore the microscopic analysis was needed to determine angiodysplastic lesions. Histological examination revealed abnormal, dilated, undulating veins, venules and capillaries crowded in the mucosa and submucosa of the small intestine (Fig. 1 and Fig. 2).

Patient 3: A 47-year-old man presented to St. Marina University Hospital, Varna, with melena, abdominal pain and anaemia. After the source of bleeding was not found during the fibrocolonoscopy, the patient underwent surgery. During the oper-

Fig. 2. Patient 2: abnormal, dilated, undulating veins, venules and capillaries crowded in the mucosa and submucosa of the small intestine (H&E, orig.m. x 400).

tological analysis revealed multiple, tortuous blood vessels with thickened walls and significantly dilated lumens in the submucosa surrounded by oedematous stroma (Fig. 3 and Fig. 4).

Fig. 3. Patient 3: multiple, tortuous blood vessels with thickened walls and significantly dilated lumens in submucosa surrounded by edematous stroma of the small intestine (H&E, orig.m. x 400)

Fig. 4. Patient 3: multiple, tortuous blood vessels with thickened walls and significantly dilated lumens in submucosa surrounded by edematous stroma of the colon (H&E, orig.m. x 400)

DISCUSSION

The incidence of angiodysplasia is only 0.82% in healthy patients older than 50 years who have undergone screening colonoscopy in the population of the United States. Unfortunately, no studies were conducted to determine the incidence of this anomaly worldwide, but it is presumably similar to that in the United States (6, 7).

Furthermore, angiodysplasias are quite difficult to identify at endoscopic operation as these lesions are typically non-palpable and very small (2-

5mm). This makes the histological evaluation essential for the diagnosis of these lesions (1,5).

Up to 77% of angiodysplasias are located in the proximal colon and 15% in the small intestine, while lesions distributed in any other part of the alimentary tract account only for the remaining 8% (1). These lesions are believed to be one of the most common cause of gastrointestinal bleeding (5,6,8,9). However, it is quite typical for bleedings caused by angiodysplastic lesions to remain asymptomatic or present only with iron deficiency anaemia at a later time (5-7).

Angiodysplasia is a frequent finding in patients older than 50 years of age and is believed to be associated with degeneration of the blood vessels in the gastrointestinal tract. However, the aetiology of intestinal angiodysplasia remains unknown (6,7). It was reported that angiodysplastic lesions are not related to tumours of the gastrointestinal tract or other diseases of the blood vessels. Still there are some conditions that favour the development of these lesions. In particular, in Heyde's syndrome, gastrointestinal angiodysplastic lesions follow aortic valve stenosis with the involvement of Von Willebrand factor. In addition, chronic renal failure and Von Willebrand disease are also associated with intestinal angiodysplasia (7,10,11). All mentioned above conditions are believed to affect the microcirculation of the gastrointestinal tract limiting further blood supply and, as a consequence, mucosal oxygenation. This makes the hypoxemia and hypoxia of the intestinal wall to be a pathogenetic mechanism of angiodysplasias and proves the degenerative nature of these rare anomalies (5,6).

CONCLUSION

Although it is a rare lesion, angiodysplasia is considered to be the second most common cause of intestinal bleeding. It should be also suspected in cases of unexplained chronic anaemia. An adequate histologically confirmed diagnosis of this anomaly could improve not only the patients' quality of life but even their life itself.

Conflict of Interest

The authors declare no conflict of interest

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