Angiodysplasia of the Colon: A Cause of Rectal Bleeding

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Abstract. Colonic angiodysplasia is a vascular lesion of the colon that may become the source of low grade chronic or intermittently massive rectal bleeding.

It is a lesion of the elderly, almost always found in the cecum and the ascending colon. Etiology and pathogenesis are unknown. The diagnosis can be made with angiography based on the demonstration of a vascular tuft and early opacification of draining veins. Right hemicolectomy is the mode of therapy. The lesions are minute, and in resected specimens they can be found only with special vessel injection techniques. Histologically, the lesions represent clusters of dilated vessels, mostly veins, in the mucosa and submucosa of the cecum and ascending colon.

Key words: Colonic angiodysplasia — Rectal hemorrhage — Hemicolectomy — Vessel injection techniques.

The purpose of this article is to present new information and current views on colonic angiodysplasia. On the basis of studies published [2-4, 6, 7, 9-13, 15-19, 29, 31, 34, 38, 41] and from points of agreement among those interested in colonic angiodysplasia we conclude the following:

1. It is a vascular lesion that may become the source of rectal hemorrhage.
2. It is a lesion of the elderly, predominantly seen in patients beyond the age of 55 years.
3. It is not associated with cutaneous vascular lesions or lesions of other viscera.
4. It is almost always located in the cecum and/or the ascending colon.
5. It has a specific angiographic appearance which makes the diagnosis feasible.
6. It is too small to be seen or palpated by the surgeon during exploration. Right hemicolectomy based on angiographic findings proves to be curative in a substantial number of patients.
7. In resected specimens the lesion can be best seen and confirmed with special vessel injection techniques.

We will now attempt to justify the above conclusions. But first, let us consider the historical developments and the varied, often confusing, terminology.

Terminology and Review of the Literature

Angiodysplasia of the cecum and ascending colon has been referred to in the past under a variety of terms including: “arteriovenous malformation” [23, 25, 34], “telangiectasia” [38], “angioma” [15], “vascular malformation” [26, 28], or “hemangioma” [29, 31]. The inclusion of this lesion among vascular tumors involving other areas of the digestive tract has further obscured the issue [23, 25, 28].

In 1960, Margulis et al. [32] reported the first cecal arteriovenous malformation demonstrated with arteriography. Twelve years later Genant [27] and Ranniger reviewed the literature and collected 22 cases of vascular malformations localized in the cecum and the ascending colon. To these they added two of their own cases. They referred to this lesion as “vascular dysplasia” with the connotation that it was of congenital origin.

Baum, who pioneered the angiographic investigation of gastrointestinal bleeding was intrigued by the angiographic appearance of “colonic telangiectasia” and its location predominantly in the right colon. In 1972 he and his associates reported on the “ac-
quired vascular ectasia of the cecum and right colon as a cause of chronic gastrointestinal bleeding” [8]. The lesion had been angiographically demonstrated in 22 patients. The average age of these patients was 65 years, with a range from 55 to 90. The possibility that the lesion is acquired rather than congenital was raised.

As a result of the above reports and with the spreading use of selective angiography, special attention was paid to the detection of colonic angiodysplasia among patients with unexplained gastrointestinal blood loss. Multiple reports have since appeared referring to the same lesion always found in elderly patients [2, 6, 9-11, 13]. “vascular malformation”, “vascular ectasia” and “angiodysplasia” have been the terms most commonly used.

“Malformation” (faulty formation) has the connotation that the lesion may be congenital. Since the available evidence points to the fact that the lesion is acquired, this term should be abandoned.

“Vascular ectasia” is a rather unfortunate combination of Latin and incorrect Greek (vascular is Latin, ectasis and not ectasia is Greek meaning stretching). To satisfy the purists, this term should be abandoned or substituted with the etymologically correct term of “angiectasis.” Further, since in the majority of cases studied histologically by our group some of the component vessels are not dilated but in fact are narrowed, even this term is not ideal.

The term “angiodysplasia” was introduced by Galdabini in 1974. It has been used at the Massachusetts General Hospital because of its consistently Greek derivation (angos or angeion = “vessel”; dys = “ill” or “badly”; plasis = “a fashioning” or “molding”) and its lack of a strong connotation of congenital origin. Although “dysplasia” can refer to congenital conditions such as congenital epiphyseal dysplasia of the hip it is also commonly used to designate acquired conditions such as fibrous dysplasia of bone or cytological dysplasia of epithelial surfaces, e.g., the uterine cervix.

Incidence

The incidence of colonic angiodysplasia is not known. According to reports published prior to 1972, this lesion was a rare cause of rectal bleeding. More recent experience has shown that the lesion is indeed more common. Three arguments serve to support the latter statement. First, in patients operated for gastrointestinal bleeding of obscure origin there are no findings in 53% of these patients and indeterminate findings in an additional 19% [35]. Since angiodysplasia can be neither seen nor palpated by the surgeon it may be responsible for bleeding in many of these patients. Second, “cecal erosions and benign ulcers of the cecum” have often been diagnosed as sources of unexplained bleeding in the past. However, specimen vessel injections have not been employed, and the microscopic studies have not been adequate to exclude underlying angiodysplasia [24, 49]. Third, with the wide application of mesenteric angiography and improved methodology (magnification, specimen vessel injection), colonic angiodysplasia is now diagnosed frequently and confirmed histologically as attested to by multiple reports published since 1972 [2=4, 6, 7, 9-13, 15, 17-19, 34, 41].

Another issue that remains unresolved is the incidence of bleeding associated with angiodysplasia. The lesion has been observed on angiograms of patients who were studied for various reasons other than rectal bleeding (own unpublished data). Boley [18] has reported a 20% incidence of mucosal lesions (vascular ectasia is the term preferred by this author) and a 53% incidence of ectatic submucosal veins in 15 colons resected for colonic carcinoma. These 15 patients were older than 55 years and none had a history of gastrointestinal bleeding. It is probable, therefore, that the lesion may be present in a substantial number of elderly people and is not always associated with bleeding.

Clinical Manifestations

Bleeding from colonic angiodysplasia may be manifested either as low grade chronic blood loss requiring iron replacement therapy and an occasional blood transfusion, or in the form of massive rectal hemorrhage [12, 18]. Hypotension and collapse may accompany the major episodes of bleeding. The association of bleeding colonic angiodysplasia and cardiac valvular disease will be discussed later in this report.

Methods

Barium Roentgen Studies of the Digestive Tract

Colonic angiodysplasia cannot be detected with barium studies of the colon. Its diagnosis defies the most meticulous double air contrast examination because the lesions are minute and produce no elevation of the mucosa. A small mucosal erosion may be present in actively bleeding lesions, but deep ulceration or spasm of the affected area has not been observed.

However, because angiodysplasia may coexist with other lesions, such as colonic neoplasms, that could be the source of bleeding, meticulous barium contrast examinations of the colon and the stomach with small bowel follow-through should be performed.