

The Enlarged Ileocecal Valve.

Report of Cases*

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Introduction

THE PRESENCE of a filling defect in the cecum on a barium contrast examination of the colon is cause for concern. However, in many instances, this deformity represents an enlarged ileocecal valve.

There have been many reports pertaining to the pathologic aspects of an enlarged ileocecal valve¹ but there is no unanimity of opinion regarding the significance of this finding. Some authors state that an enlarged valve constitutes no abnormality.⁴ On the other hand, an enlarged valve has been responsible for rectal bleeding and in some instances has resulted in exsanguinating hemorrhage.³

Lasser and Rigler² endeavored to correlate the finding of an enlarged ileocecal valve with a specific symptom complex. Unfortunately this was solely a radiographic study, in which no surgery was performed.

It is the purpose of this presentation to attempt to clarify the current divergence of opinion and to appraise the diagnostic and clinical implications of an enlarged ileocecal valve.

Anatomy and Correlative Pathophysiology

The ileocecal valve consists of two lips, one superior and one inferior, constituting projections of terminal ileum into the posteromedial aspect of the cecum (Fig. 1). The lips give rise to two crescentic folds, the frenula, one on the ventral and the other on the dorsal aspect of the gut. They are directed transversely like the plicae cir-

culares, which they resemble. The serosa of the bowel does not take part in the formation of the ileocecal valve. The cecum and ascending colon occupy a relatively fixed position by the nature of their semiretroperitoneal location. Microscopically the ileocecal valve is composed of mucosa, submucosa and circular muscle fibers (Fig. 2).

Protrusion of the terminal portion of the ileum into the cecum, deficiency of a serosal covering and fixation of the cecum, make it relatively easy for a perpetuating chain of events to arise. Forceful, irregular peristaltic movements combine with a relatively loose submucosal stroma to initiate a type of intussusception, resulting in a stimulus to fatty deposition or inflammatory swelling of the ileocecal valve, or both. This occurrence may be repeated several times and produce mucosal ulceration and bleeding.

Complaints usually manifested are referred to the lower abdomen, especially the right lower quadrant, and consist of intermittent, crampy pain. These may be associated with diarrhea and rectal bleeding. Tenderness may be elicited over the enlarged valve. There is usually no fever or leukocytosis.

Roentgenologic Diagnosis

An enlarged ileocecal valve appears as a smooth, round filling defect in the cecum (Fig. 3). Frequently it has an increased radiolucency, making one suspect lipomatosis. In a direct "on end" view the valve has a rosette or slitlike appearance, depending on the phase of contraction. In profile it is somewhat triangular in shape with the apex pointing medially toward the ileum (Fig.

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FIG. 1. Anatomy of the ileocecal valve showing protrusion of the terminal ileum into the cecum.

4). The presence of a smooth border and stellate radiations attest to the competence and uninterrupted of the muscularis mucosae, indicating a benign lesion.

Classification

The following classification has been suggested to aid in evaluating the enlarged ileocecal valve:

Group I: Those cases in which an enlarged ileocecal valve is demonstrated radi-

ographically. Symptoms are referable to the lower abdomen.

Group II: Same as Group I but associated with rectal bleeding.

Group III: Those cases in which an enlarged ileocecal valve is an incidental finding. Usually the condition is discovered at surgery for appendicitis or diverticulitis or is demonstrated radiographically in an asymptomatic patient.



FIG. 3. "On end" view of the enlarged ileocecal valve showing a smooth outline and stellate radiations, indicating a benign lesion.



FIG. 2. Normal ileocecal valve demonstrating mucosal, submucosal, and muscular coat (basic components).

Report of Cases

The following ten cases were seen at The Brooklyn Hospital from 1953 to 1958. They have been reported previously, primarily from the pathologic view point,¹ and all had submucosal fatty infiltration of the ileocecal valve (Fig. 5).

Group I

Case 1: A 53-year-old white woman was admitted with a history of intermittent, crampy, right lower quadrant pain for three years, un-

relieved by appendectomy. Three years prior to admission a gastro-intestinal study was entirely negative. Roentgenologic examination after administration of a barium enema revealed a round filling defect in the cecum. The cecum was removed and an ileo-ascending colostomy was performed. The pathologic diagnosis was fatty infiltration of the ileocecal valve with chronic ileitis and ulceration.

Case 2: A 53-year-old white woman was admitted with a chief complaint of right-sided abdominal pain. Physical examination revealed tenderness both in the right upper and right



FIG. 4. (Case 5.) Profile view of an enlarged valve with increased radiolucency suggesting the fatty nature of the process.

lower quadrants of the abdomen. An upper gastro-intestinal series was negative. X-ray of the colon after a barium enema revealed malposition of the proximal portion of the colon and a prominent ileocecal valve (Fig. 6). A lipoma of the ileocecal valve was removed (Fig. 7). The patient was discharged improved and has remained asymptomatic.

Case 3: A 58-year-old white woman was admitted with a history of intermittent right lower quadrant pain accompanied by flatulence and distention for two months. There was tenderness in the right lower quadrant. X-ray examination of the colon showed an enlarged ileo-

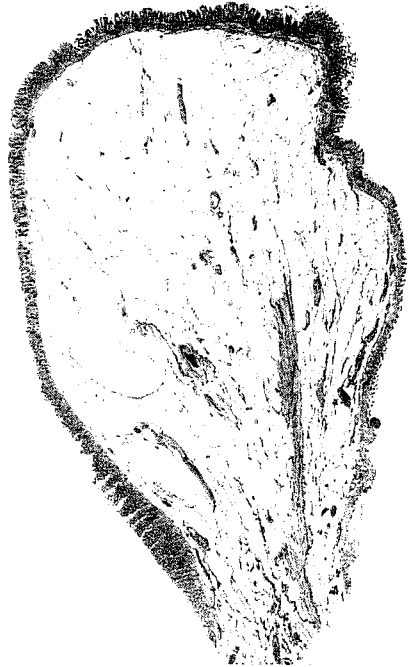


FIG. 5. Lipomatosis of the ileocecal valve with fatty accumulation in the submucosa. Note that the mucosa is intact.



FIG. 6. (Case 2.) Roentgenogram showing malposition of the proximal colon with an enlarged ileocecal valve situated on the posterolateral aspect of the cecum.



FIG. 7. (Case 2.) Lipoma of the ileocecal valve.
(This is the entire specimen.)

cecal valve. A right hemicolectomy was performed (Fig. 8). After an uncomplicated post-operative course she was discharged improved.

Case 4: A 49-year-old white woman gave a three-year history of diarrhea and cramps with occasional vomiting. X-ray of the colon after barium enema revealed an enlarged ileocecal valve (Fig. 9). The cecum was removed and



FIG. 8. (Case 3.) Specimen from Case 3 showing enlarged ileocecal valve with prolapse into the colon.

an ileo-ascending colostomy was performed. The patient was discharged improved.

Case 5: A 47-year-old white man was admitted with a chief complaint of pain and fullness in the lower abdomen associated with occasional "gas" pains for four months. X-ray examination of the colon showed prominence of the ileocecal valve (Fig. 4). The terminal portion of the ileum and the cecum were removed. The pathologic diagnosis was lipomatosis and prolapse of the ileocecal valve. The patient was discharged improved and has remained asymptomatic for four years.



FIG. 9. (Case 4.) X-ray of colon showing smooth symmetrical enlargement of the valve stellate radiations.

Group II

Case 6: A 43-year-old white woman complained of diarrhea for one year, with recent passage of dark and bright red blood in the stools. The patient had hemorrhoids with no signs of bleeding. Occult blood was present in the stools. The hemoglobin was 14.5 Gm. X-ray of the colon after barium enema revealed hypertrophy of the ileocecal valve. The cecum was removed and an ileo-ascending colostomy was performed. Pathologic examination showed lipomatosis of the valve with focal mucosal hemorrhages (Fig. 10). The patient was discharged improved.

Case 7: A 38-year-old white woman was admitted with a chief complaint of suprapubic pain with some nausea and vomiting. She had passed blood in the stool intermittently for several months. Physical examination revealed tenderness in the suprapubic area to the right of the midline. The hemoglobin was 12.8 Gm. X-ray of the colon demonstrated an enlarged ileocecal valve (Fig. 11). A lipoma of the valve was excised. Microscopically there were focal areas of hemorrhage in the mucosa (Fig. 12). The patient was discharged asymptomatic but was lost to follow up three months later.



FIG. 10. (Case 6.) Multiple mucosal hemorrhages account for bleeding.

Group III

Case 8: A 47-year-old white woman was admitted with a four-day history of right lower quadrant pain associated with nausea but no vomiting. The diagnosis on admission was acute appendicitis. The hemoglobin was 15 Gm. and the white blood cell count was 16,650 with a shift to the left. Exploratory laparotomy revealed acute diverticulitis of the cecum. A right hemicolectomy was performed. The pathologic diagnosis was acute cecal diverticulitis and lipomatosis of the ileocecal valve.

Case 9: A 52-year-old white man was admitted with a history of right lower quadrant



FIG. 11. (Case 7.) Smooth radiolucent defect in the ileocecal area, indicating fatty deposition.

pain and nausea for one week. There was tenderness and "rebound" in the right lower quadrant. Exploratory laparotomy revealed diffuse inflammatory change in the cecal and peri-appendiceal region. The patient was treated with chemotherapeutic agents and six weeks later the ileum and cecum were removed. The pathologic diagnosis was diverticulitis, subacute and acute, and fatty infiltration of the ileocecal valve.



FIG. 12. (Case 7.) Mucosal hemorrhages in specimen removed from ileocecal valve.



FIG. 13. (Case 10.) Postevacuation study of the colon reveals several diverticula in the cecum and ascending colon. Exploration was indicated to rule out a neoplasm of the proximal portion of the colon. Note prominence of the ileocecal valve.

Case 10: A 58-year-old white woman was admitted because of a severe anemia with a hemoglobin of 4.8 Gm. She had occasional diarrhea for a year but no history of rectal bleeding. Occult blood was present in the stool on several occasions. Contrast x-ray examination of the colon revealed diverticulosis of the cecum and a filling defect in the ileocecal region (Fig. 13). A right hemicolectomy was performed for diverticulosis and diverticulitis of the cecum. There was lipomatosis of the ileocecal valve without evidence of mucosal ulceration. No other cause for the patient's anemia could be

Discussion

DR. NORMAN D. NIGRO (Detroit, Michigan): Interpretation of radiographic findings in the cecum is often difficult and lesions, especially when small, are frequently overlooked in this part of the bowel. There are a number of reasons for this, one of which is the shadow in

determined. She was discharged with a hemoglobin of 11.5 Gm.

Summary

It is not the purpose of this presentation to prove that all prominent ileocecal valves should be removed or that enlargement of the ileocecal valve is a normal condition and should be studiously ignored. It is rather intended to assure that the enlarged ileocecal valve be evaluated in the light of clinical findings and the need for surgery be determined by a complete examination of the patient.

It is noteworthy that this condition may cause rectal bleeding. This phenomenon may be explained by the very nature of the described sequence of events in the development of the enlarged valve.

Ten cases of enlargement of the ileocecal valve seen at The Brooklyn Hospital between 1953 and 1958 have been presented.

An anatomic and physiologic explanation of the development of enlarged ileocecal valve has been presented and correlated with a symptom complex. It is noteworthy that this condition may cause rectal bleeding.

References

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roentgenograms of the ileocecal valve. Apparently this valve closes by combining sphincteric and valvular action. The valvular effect results from a common anatomic principle, sometimes called the principle of oblique passage. The ileum enters the cecum obliquely and in consequence there is a difference in the size of the two lips of the valve. There is also considerable

variation in the degree of obliqueness in different patients. Therefore, a great deal of experience and care is necessary in order to interpret properly the radiologic appearance of the valve in different phases of its function, as well as its appearance in different patients. The problem is best resolved by consultation with a radiologist like Dr. Marsh who has a special interest in colon diseases.

I would like to mention three patients to illustrate what I believe are important features. The first patient had no symptoms but, in the course of a routine examination, roentgenologic studies showed what appeared to be a polyp in the cecum near the ileocecal valve. At operation no polyp was found. One lip of the ileocecal valve was prominent, especially when the ileum was compressed or contracted. The shadow, then, proved to be caused by a large lip of the valve. We shall not again perform exploratory operations on patients with large valves when they do not have symptoms.

The second patient had three episodes of bleeding from the bowel. Repeated roentgenologic studies of the colon revealed no abnormality. However, at operation we found a small ulcerating cancer involving the ileocecal valve.

Following this experience, we saw a patient with a profound anemia but with no bowel symptoms. Repeated x-ray studies of the colon were inconclusive. Two radiologists felt that there was a lesion of the ileocecal valve and two did not. At operation we found a small carcinoma in the ileocecal valve area.

These cases illustrate the point that small lesions in the cecum are difficult to diagnose because of variability of the shadow produced by the ileocecal valve. Variations of the shadows of normal valves are great and it is hard to say whether a prominent shadow represents a prolapse of normal ileum into the cecum, hypertrophy of the valve due to fat infiltration or a small neoplasm in the valve area.

The problem is best resolved, I believe, by combining a careful study of the radiologic evidence, and the clinical picture. If a patient has signs or symptoms which could be caused by disease in the right colon, then I would consult a good radiologist like Dr. Marsh and, if there is any doubt in his mind, I would perform an exploratory operation on patients who have symptoms, especially bleeding. I am opposed to exploration of patients with enlarged valves who have no symptoms.