Colonic Diverticulosis in India: The Changing Scene

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Abstract

Background: The prevalence of colonic diverticulosis has a wide geographic and ethnic variation and has been considered to be quite low in India. This study was aimed at determining the prevalence of colonic diverticulosis in northern India based on barium enema examination in symptomatic patients.

Methods: All barium enema examinations performed between January 1985 and December 1991 were reviewed for the presence of colonic diverticulosis. Clinical data of such patients were retrieved.

Results: 51 (3.2%) of 1610 barium enema studies showed colonic diverticulosis. The frequency of diverticulosis in barium studies increased from 0.3% among subjects in the third decade to 32.4% in patients above 60 years. Most patients were city dwellers, vegetarians and belonged to the upper socio-economic stratum. Twenty patients (39.2%) presented with a complication; the spectrum of such patients was no different from that reported from the West. While the sigmoid colon was the commonest site of diverticuli, there was a relative preponderance of right sided diverticuli as compared to the Western experience. Seven patients with complications required surgical treatment, while the rest were managed conservatively.

Conclusion: Colonic diverticulosis and its complications are not rare in India and should be considered in the differential diagnosis of abdominal disorders.

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Key words: Colonic disease, colonic diverticulitis.

Introduction

The prevalence of colonic diverticulosis shows a wide geographic and ethnic variation. While the existence of the disease in India was recognized nearly two decades ago, colonic diverticula are still considered uncommon in the Indian sub-continent. The present study was aimed at finding the prevalence of colonic diverticulosis in northern India based on barium enema examinations in symptomatic patients referred to the gastroenterology clinic of our institute.

Methods

All the barium enema examinations performed in the Radiology section of the Department of Gastroenterology during the period January 1985 to December 1991 were reviewed; clinical records of all the cases having colonic diverticuli were retrieved and analyzed. Abdominal ultrasonography, CT scan and colonoscopy were performed wherever required to further evaluate the disease and assess the complications. Details such as age, sex, dietary habits, socio-economic status, clinical features, radiological findings including site and number of diverticuli, as well as associated changes and complications were recorded.

Results

A total of 1610 barium enema studies were reviewed; of those, 51 (3.2%) studies, belonging to 31 men and 20 women with ages 27-85 (mean 58.8±12.1) years, showed colonic diverticuli (Fig). The frequency of diverticulosis increased with each decade, being 0.3% in the third decade and 32.4% in patients above the age of 60 years (Table 1). All the patients were of Indian origin except for one English lady. All the patients had been residing in India, though two of them had stayed in Europe for over a decade. All were city dwellers; 46 belonged to the upper socio-economic stratum and were consuming a
Table 1: Age-wise distribution of colonic diverticulosis in relation to number of barium enema examinations performed

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>No. of barium enema examinations</th>
<th>No. (%) of the patients with diverticuli</th>
</tr>
</thead>
<tbody>
<tr>
<td>00-10</td>
<td>341</td>
<td>0</td>
</tr>
<tr>
<td>11-20</td>
<td>315</td>
<td>0</td>
</tr>
<tr>
<td>21-30</td>
<td>374</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>31-40</td>
<td>259</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>41-50</td>
<td>140</td>
<td>9 (6.4)</td>
</tr>
<tr>
<td>51-60</td>
<td>110</td>
<td>17 (15.4)</td>
</tr>
<tr>
<td>&gt; 60</td>
<td>71</td>
<td>23 (32.4)</td>
</tr>
<tr>
<td>Total</td>
<td>1610</td>
<td>51 (3.2)</td>
</tr>
</tbody>
</table>

Table 2: Distribution of colonic diverticulosis

<table>
<thead>
<tr>
<th>Site</th>
<th>No. of patients (n=51)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sigmoid colon</td>
<td>43</td>
</tr>
<tr>
<td>Alone</td>
<td>15</td>
</tr>
<tr>
<td>With other sites</td>
<td>28</td>
</tr>
<tr>
<td>Descending colon</td>
<td>21</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>14</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>13</td>
</tr>
<tr>
<td>Cecum</td>
<td>8</td>
</tr>
<tr>
<td>Rectum</td>
<td>1</td>
</tr>
</tbody>
</table>

relatively refined diet though 40 of them were obligate vegetarians.

All the 51 patients had pain in the lower abdomen and 23 had constipation. Twenty (39.2%) patients presented with a complication, i.e., hemorrhage (12) or diverticulitis (8). Six of the latter eight manifested as intra-abdominal abscess (3), colonic obstruction (1) or fistula (acrocolic and colocolonic - one each).

The distribution of diverticuli in various segments of the colon is shown in Table 2. While the sigmoid colon was the commonest site involved (43, 82.4%), the cecum and/or ascending colon alone (without involvement of the left colon) was the site of diverticula in 6 (11.9%) patients. Twenty-three patients (45.9%) had diverticuli proximal to the splenic flexure. The size of the diverticular sac was 0.2-1 cm in all patients except one who had multiple diverticula of 1-4 cm. Colonoscopy showed diverticular openings in 5 of 10 patients in whom it was performed.

Seven patients with complications (abscess 3, fistula 2, diverticulitis 1, obstruction 1) were treated surgically, with resection of the involved segment in all seven and closure of fistula in two. The remaining patients were treated conservatively with high-fiber diet and antispasmodics (in uncomplicated cases), antibiotics (in patients with diverticulitis) and blood transfusion (in patients with hemorrhage).

Discussion

Diverticulosis of the colon had been considered to be rare in India. Painter and Burkitt (1975) in a review of literature could not find any reported case from India and based on personal communication with major Indian medical centers estimated that colonic diverticula were observed in fewer than 0.3% of subjects undergoing barium enema examinations. Studies conducted in Singapore and Fiji also revealed a 25-30 fold higher prevalence of colonic diverticulosis in European migrants compared to the local Indian population. In contrast to these reports, Antia and Desai (1976) in their study from Bombay noted the disease to be almost as frequent as in the West. The present report of 51 symptomatic patients seen over a 7-year period emphasizes that colonic diverticulosis is not uncommon in India.

As is well known, and as seen in the present study also, the prevalence of colonic diverticulosis correlates directly with the age of the subject. This has been attributed to a decrease in colonic wall strength with aging. The earlier reported rarity of the disease in India may be due to younger age of the study population as a result of shorter life expectancy in the Indian population as well as because of the pattern of hospital admissions in India, as suggested by Antia and Desai. Contrary to experience from other developing countries, where colonic diverticulosis occurs at a relatively younger age, the age-wise distribution of patients in the present series is similar to that reported from Western countries. Customary intake of a high-fiber diet has been postulated as another cause of the relative rarity of colonic diverticula in countries such as India. Detection of colonic diverticulosis in predominantly urbanized Indians supports the hypothesis that the emergence of this disease could at least partly be related to adoption of Westernized eating habits by this sub-population. The recent emergence of diverticular disease in urban South African and Hawaiian Japanese populations has also been attributed to changes in their lifestyle.

While all 51 patients with colonic diverticulosis in the present hospital-based series were symptomatic, with a majority having abdominal pain and/or bowel disturbances, the exact relationship of these symptoms to the presence of diverticula remains uncertain. We encountered complications due to diverticulosis in 39.2% of cases, which is higher than the 20-25% incidence of complications in symptomatic diverticular disease.

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reported from the West. The spectrum of complications was no different from that seen in the Western world.

While the overall spatial distribution of diverticular disease was similar to that in the Western world, with the sigmoid colon being involved in 82.4% of cases, right-sided diverticulosis was somewhat more common. Diverticula were present proximal to the splenic flexure in 45.9% of cases, compared to the 11.9% incidence reported from the West. A higher incidence of right-sided diverticulosis has been noticed in almost all reports from developing countries.

Most diverticula in our patients were < 1 cm in size. Only one patient had giant diverticula which, unlike the common type, were present on both mesenteric and anti-mesenteric borders of the colon. Contrary to the previous belief, right-sided diverticula and giant diverticula, are now thought to be pseudodiverticula, as are the usual colonic diverticula.

We conclude that colonic diverticulosis with all its complications is not a rarity in India. It should be considered in the differential diagnosis of abdominal disorders particularly among urbanized elderly patients.

References