DIVERTICULAR DISEASE OF THE COLON IN THAILAND : " INCIDENCE AND DISTRIBUTION "

Kamolwan JUNGMEECHOKE

ABSTRACT

Of a total 1051 barium enemas performed in Bumrungrad Hospital and Pramongkutklao Hospital in 1995-1996,13.5% showed colonic diverticulosis. Right colon was the most common site, 53.52%; while left colon was involved in 14.78% and bilateral involvement was 30.11%. This is different from western countries where the disease is predominantly on the left. Our study also showed that right sided colonic diverticulosis was more common in younger age group and more predominant in men.

INTRODUCTION

Colonic diverticulosis is common in western countries and is predominantly left sided.[1] In Thailand, there was only one study in 1980 done by Vajrabukka et al[2] which showed the incidence of 4.2% with predominance of right sided disease. The number of cases in the study was small and all were symptomatic. This together with cases of right sided diverticulitis we found more frequently, prompted us to do this study to determine the incidence and distribution of colonic diverticular disease in Thailand in a larger number of cases including both symptomatic and asymptomatic population.

PATIENTS AND METHODS

Prospective survey of colonic diverticular disease of the patients who had barium enema examination in Bumrungrad hospital from November 1995 to August 1996 and in Pramongkutklao hospital from November 1995 to June1996 were done. Foreigners were excluded from the study. The patients came from both Bangkok and urban areas.

All patients received barium enema examinations because of having one or more of the following symptoms: abdominal pain, change of bowel habit, bloody stool, positive occult blood test of feces, anemia, weight loss and suspected colonic malignancy, or for checking up.

Total number of barium enema examination in the study was 1051. There was one patient with diverticulosis but whose entire colon was not visualized from previous partial colectomy. This patient was not included in the table of "site of diverticular disease".

Diverticular disease was divided into three types: (1) right sided with diverticula at the cecum, ascending and proximal transverse colon; (2) left sided with diverticula at distal transverse, descending and sigmoid colon.;and (3) bilateral type.; the same as in the study of Nakada[3]

Department of Radiology, Pramongkutklao Hospital, Bangkok Thanit Singcharoen
Department of Radiology, Bumrungrad Hospital, Bangkok

RESULTS

INCIDENCE AND SEX

Among 1051 patients receiving barium enema examinations, colonic diverticular disease was found in 142 patients (13.51%), including 81 males (57.04%) and 61 females (42.96%).

AGE

The age range and mean age of patients with colonic diverticulosis were 26-92 years and 59.15 years respectively.

DISTRIBUTION OF THE DIVERTICULI (TABLE 1)

There were involvement of the right colon in 53.52% of the cases. The mean age of this group was 55.57 years.

Left-sided disease was found in 14.78% The mean age of this group was 63.7 years.

In the remaining 30.99%, there was bilateral type with mean age of 62.06years.

Our patients with right-sided disease were younger than the patients with left-sided disease by about 8 years.

Right-sided disease was more prevalent in men; while left-sided and bilateral types involved almost equal in male and female populations.

Table 1 Site of Diverticular Disease

	Right-sided	Left-sided	Bilateral
Total (n)	76	21	44
% of total	53.52	14.78	30.99
Age range	26-92	43-84	43-87
Mean age	55.57	63.7	62.06
Sex			
-male(%)	61	50	51
-female(%)	39	50	49

SINGLE DIVERTICULAR DISEASE (TABLE 2, 3)

Of 1,051 barium enema examinations performed, 21 cases (1.9%) revealed single diverticulum of the colon. This was 4% of all colonic diverticular disease. Age range and mean age of this group were 26-79 and 59.4 years. It was slightly more prevalent in men, and it was more common in the right-sided colon with roughly equal distribution at cecum ,ascending colon and at hepatic flexure.

Table 2 Site of Single Colonic Diverticulum

	Right-sided	Left-sided	Total
Number	16	5	21
Percent	76.19	23.81	100
Age range	26-79	46-65	26-79
Mean age	53.6	56.8	59.4
Sex F:M	7:8	2:3	9:11

Table 3 Site of Single Right-Sided Diverticulum

	Number	Percent
Cecum	6	37.5
Ascending colon	6	37.5
Hepatic flexure	4	25

Table 4 Distribution o f Diverticular Disease in Patients Younger Than 40 Years Old.

	Single	Multiple(Number)
Cecum	3	1(4)
Ascending colon	1	1(2)
Left-sided colon	0	0

COLONIC DIVERTICULAR DISEASE IN PATIENTS YOUNGER THAN 40 YEARS OLD (TABLE 4)

In our study, there were 6 patients with colonic diverticular disease who were younger than 40 years old. Male: female was 1:1. Age range was 26-39 years old. All of these six cases were right- sided disease; with single diverticulum in 4 cases and multiple ones in 2 cases.

DISCUSSION

The incidence of colonic diverticulosis in our study was 13.51 %. This is lower than in the United States[1] (30% in age over 50 and 50% in age over 70), and slightly lower than in Singapore[4,5](19-20%) and Japan[6](15.7%), developed countries of Asia but much higher than Vajrabukka's study[2]. The incidence of the colonic diverticulosis is highly suspected to depend on eating habits(usually found in societies with low fiber diets); as seen in the study of Nakada et.al[3], Stemmermann and Yatani[7]. Nakada et.al[3] showed that as lifestyle in Japan had changed, the incidence of this disease had been steadily increasing during the past ten years. Stemmermann and Yatani[7] showed that Japanese Hawaiians had higher incidence of the disease than Japanese.This may be the reason for our low incidence. However, with changing of eating habit and diet intake of more western food by the Thai population, the incidence of colonic diverticular diseases may increase in the future and further study is still needed.

Colonic diverticular disease in Thailand is predominantly right-sided type; the same as in Singapore,[4] Japan,[5] Hong Kong[8] and Korea.[9] On the contrary, it is predominantly left-sided in the United States,[1] European countries,[10] India[11] and Jordan.[10] Our study also showed that right- sided diverticulosis was more common in younger age group and more predominant in men; the same as in Japan and Singapore. These suggest that the race may have a role in determining predominant site, age and gender distributions of colonic diverticular disease.

About single colonic diverticulum, there are two possibilities.Some studies[12] believed that it was a separate entity from multiple diverticulosis because of different site and age distributions.That is it's predominantly involved right-sided colon especially the cecum[13] and usually found in younger age group, about ten years earlier than left-sided multiple colonic diverticulosis.[14] Pathologically it was true diverticulum, consisting of all layers of intestinal wall including the muscular layer. It was thought to be congenital in origin. While others[4,15] showed that it was false diverticulum, comprising only mucosa and submucosa herniating through the muscular wall, and was acquired, the same entity as multiple diverticulosis.This includes the study of Lee[4] from Singapore which pathologically showed that all of the single diverticuli in his study (39 cases) were false type. In our study, the incidence of single colonic diverticulum was 1.9%. and was predominantly right-sided with age distribution following the pattern of right-sided multiple colonic diverticular disease. Cecum was involved only about one-third of cases and there were both single and multiple types of colonic diverticulosis in patients younger than 40 years old. From these informations, it is more suggestive that single and multiple colonic diverticulosis are parts of the spectrum of the same disease rather than a separate entities.

Lastly because colonic diverticular disease in Thailand is more common to be right-sided and right-sided diverticulitis is not rare, right-sided diverticulitis should always be in the differential diagnosis of right lower quadrant abdominal pain.

REFERENCES:

1. Cheskin LJ, Bohlman M, Schuster MM. Diverticular disease in the elderly. Gastroenterology Clinic of North America 1990; 19:391-403.
2. Vajrabukka T, Sakornchai K, Jimakorn P. Diverticular disease of the colon in a far-eastern community. Dis Colon Rectum 1980;23:151-154.
3. Nakada I et al. Diverticular disease of the colon at a regional general hospital in Japan. Dis Colon Rectum 1995;38:755-759.
4. Lee VS. Diverticular disease of the large bowel in Singapore. An autopsy survey.Dis Colon Rectum1986;29:330-335
5. Chia JG,Wilde CC,Ngoi SS, Gok PM,Ong CL. Trends of diverticular disease of the large bowel in a newly developed country. Dis Colon Rectum1991;34:498-501.
6. Sugihara K, Muto T, Morioka Y, Asano A, Tamamoto T. Diverticular disease of the colon in Japan. A review of 615cases. Dis Colon Rectum 1984;27:531-537.
7. Stemmermann GN, Yatani R. Diverticulosis and polyps in the large intestine. A necropsy study of Hawaii Japanese. Cancer 1973;31:1260-1270.
8. Coode PE,Chan KW,Chai YT. Polyps and diverticula of the large intestine. A necropsy survey in Hong Kong. Gut 1985; 26:1045-1048.
9. Munakata A, Nakaji S, Yoshida Y, Han NC, Choi WK. Study on the diverticular disease of the colon in Korea. J Jap Soc Coloproct 1982;35:224-231.
10. Fatayer WT, A-Khalaf MM, Shalan KA, Toukan AU, Daker MR, Arnaout MA Diverticular disease of the colon in Jordan. Dis Colon Rectum1 983;26:247-249.
11. Kochhar R,Goenka MK, Nagi B, Bhasin DK, Mehta SK. The emergence of colonic diverticulosis in urbanished India. A report of 23 cases. Trop Georg Med 1989; 41:254-256.
12. Mariani G, Tedoli M, Dina R, Giacomini I. Solitary diverticulum of the cecum and right colon. Dis Colon Rectum 1987;30: 626-629.
13. Magness LJ, Sanfelippo PM, Hurden JA, Judd SS. Diverticular disease of the right colon. Surg Gynecol Obstret1975;140:30-31.
14. Sardi A, Gokli A, Singer JA. Diverticular disease of the cecum and ascending colon. A review of 881 cases. Am Surgeon 1987; 53: 41-45.
15. Hughes LE,Postmortem survey of diverticular disease of the colon. Gut 1969;10: 336-351.