RESEARCH ARTICLE

Changing Trends of Colorectal Carcinoma in Nepalese Young Adults

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Abstract

  Introduction: Colorectal carcinoma (CRC) is the most common gastrointestinal malignancy in the older population, but it is also quite frequent among young adults in developing countries. The aim of this study was to update the trends of clinicopathological features of CRC in young Nepalese. Methods: A retrospective comparative study on the data retrieved from the surgical records of all patients between 20 to 39 years of age with CRC was carried out for periods of 5 years each from 1999 to 2003 (early) and 2004 to 2008 (recent), treated at Tribhuvan University Teaching Hospital, Kathmandu, Nepal. Results: The number of young adults with CRC increased from 28 to 34. However, the proportion of young patients in both groups was 28% of all CRC patients. The mean ages were 34±4.7 and 31.8±5.1 years in early and recent 5 years, respectively, and the male female ratio changed from 2:3 to 4:3. Abdominal pain as the most common presenting symptom was replaced by bleeding per rectum in recent years. The mean duration from onset of symptoms to seeking medical advice decreased from 7.8 months to 5.6 months in recent years. More patients (85.3%) were subjected to endoscopic examination in recent years than early years (60.7%) and right colonic cancer increased from 10.7% to 26.5%. However, the rectum was the commonest site in both early (71.4%) and recent (50%) groups. CRC was detected significantly at an earlier stage (7.1% vs 32.4%) in recent years with large proportion of modified Dukes B stage. Poorly differentiated adenocarcinoma was the predominant histology in both groups (50% vs 60.7%). Curative resection had risen in recent years (39.3% vs 73.6%). Conclusion: CRC among Nepalese young adults accounts for a high incidence (28%) of all CRC cases. Although right sided colonic cancer has been increasing, rectum is the commonest site. There is also an increasing trend for diagnosis at earlier stages of the disease which can be treated with curative intent.

Keywords: Age - colorectal cancer - gender - stage - Nepal

Introduction

Colorectal cancer (CRC) is one of the most common malignancies worldwide with comparatively lower incidence in south Asian countries in the past few decades (Moore et al., 2009). However, CRC has been increasing in economically developing countries recently (Jemal et al., 2011). It is one of the most common cancers in Nepal (Pradhananga et al., 2009). Although CRC occurs predominantly in older people, it does affect young adults with a high incidence up to 36% of all CRC including our own report (Soliman et al., 1997; Singh et al., 2002). For unknown reasons, the incidence of CRC among young adults is higher in Asia (Nath et al., 2009). Numerous reports have raised special concerns with respect to the unfavorable prognosis of this disease when it occurs in young adults (Marble et al., 1992; Yilmazlar et al., 1995). Rarity of this disease in the young leading to delay in diagnosis and more frequent occurrence of poorly differentiated and mucinous tumors in the young population may contribute to the poor outcome (Gupta et

al., 2010). However, in an Asian cohort of young colorectal cancer patients, there was better survival in comparison to older population (Chew et al., 2009). CRC in young adults poses special challenges. Survivors face unique psychological issues as they think about their future, fertility finishing school / college or starting career.

The time trends of CRC among young adults are changing due to lifestyle patterns even in low risk population and early detection initiatives are needed for this younger age groups (Bhurgri et al., 2011). The aim of this study was to update the clinicopathological features of CRC in young adults and to determine whether patterns of this disease had been changed over a period of time in a tertiary care university hospital of Nepal.

Materials and Methods

The surgical record files of all patients admitted to the Department of Surgery in Tribhuvan University Teaching Hospital, Kathmandu for the treatment of primary colorectal carcinoma during January 1999 to December

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2008 were obtained. The study population was defined as those patients between 20 to 39 years. Hospital record files, operating room records and histopathology reports were scrutinized to minimize the exclusion of patients from the study. The mode of presentation, diagnosis, site of tumor, staging, tumor histology and operation performed, were recorded. Subsites were categorized into right colon (cecum, ascending colon, hepatic flexure), left colon (descending colon and sigmoid colon) and rectum. Comparison was made between a period of 5 years each from 1999 to 2003 (early) and 2004 to 2008 (recent). Data were expressed as mean±SD unless stated otherwise. Comparison between the two groups was made using two-proportion Z test. A p value of <0.05 was considered statistically significant.

Results

Between 1998 and 2008, there were 234 patients with primary colorectal cancer admitted in the Department of Surgery. There were a total of 28 patients out of 99 in early group and 34 out of 120 patients in the recent group. However, 6 cases were excluded because the clinical records were inadequate for analysis. In both groups the proportion of young patients was 28% of all CRC cases. Mean age was 34.1±4.7 years in the early group which was slightly higher than the mean age for the recent group of 31.8±5.1 years. The number of younger young adults (20 to 29 years of age) increased from 28.6% to 35.3% recently. The male female ratio changed from 2:3 to 4:3 in recent 5 years. Abdominal pain (57.1%) as the most common presenting symptom was replaced by bleeding per rectum (70.6%) in recent years. The mean duration from onset of symptoms to seeking medical advice decreased from 7.8 months to 5.6 months in recent years (Table 1).

Endoscopic procedure in form of either sigmoidoscopy or colonoscopy as a diagnostic investigation was in an increasing trend (early 60.8% vs recent 85.3%). Although right colonic cancer increased from 10.7% to 26.5% recently, rectum was still the commonest site of primary tumor (71.4% vs 50%).Tumors were detected at an earlier stage with significant number diagnosed as Modified Dukes B stage (7.1% vs 32.2%). Poorly differentiated adenocarcinoma was the predominant histology in both groups (60.7% vs 50%) (Table 2).

Curative resection had risen in recent years (39.3% vs

Table 1. Comparison of Demographic Parameters and Symptomatology

Parameter	1999-2003	2004-2008	P value
Mean age	34.1±4.7	31.8±5.1	0.085
20-29 years	8 (28.6%)	12 (35.3%)	0.57
30-39 years	20 (71.4%)	22 (64.7%)	0.55
M:F	2:3	4:3	0.36
Symptoms			
Pain abdomen	16 (57.1%)	11 (32.4%)	0.001
Altered bowel habits	10 (35.7 %)	7 (20.6%)	0.211
Bleeding PR	9 (32.1%)	24 (70.6%)	0.005
Mean duration of symptoms			
	7.8 months	5.6 months	0.111

Table 2. Site of Primary Tumor, Stage and Histology

	1999-2003	2004-2008	P value
Site			
Rectum	20 (71.4%)	17 (50.0%)	0.08
Left colon	5 (17.9%)	8 (23.5%)	0.56
Right colon	3 (10.7%)	9 (26.5%)	0.07
Stage			
Dukes B	2 (7.1%)	11 (32.4%)	0.005
Dukes C	18 (64.3%)	16 (47.1%)	0.19
Dukes D	8 (28.6%)	7 (20.6%)	0.424
Histology			
Well differentiated	0	6 (17.6%)	0.02
Moderately differentiated	7 (25.0%)	10 (29.4%)	0.71
Poorly differentiated	17 (60.7%)	17 (50.0%)	0.395
Undifferentiated	4 (14.3%)	1 (3.0%)	0.08

Table 3. Surgical Management

Type of Surgery	1999-2003	2004-2008	P value
Palliative			
Colostomy	7 (25.0%)	4 (11.7%)	0.15
Resection	8 (28.6%)	1 (2.9%)	0.003
Curative			
APR	5 (17.9%)	9 (26.5%)	0.522
AR/LAR	2 (7.1%)	5[*] (14.7%)	0.317
Colectomy	4 (14.3%)	11[#] (32.4%)	0.071
No Surgery	2 (7.1%)	4 (11.8%)	0.53

[*]laparoscopic assisted, [#]laparoscopic assisted

73.6%). Palliative surgery was performed in 53.6% vs 14.6% (Table 3). One laparoscopic assisted low anterior resection and two laparoscopic assisted colectomies were successfully performed during recent years.

Discussion

Although CRC is usually a disease of the older population, there has been an observed increase in the incidence of colon cancer in the young (O'Connell et al., 2003). The reported incidence, however, has been quite varied due to different inclusion criteria used in these studies. In our study, though the total number of patients with colorectal carcinoma was higher (120 vs 99 patients), the proportion of younger patients remained the same (28%). In contrast, there is a trend of decreasing incidence of colorectal carcinoma worldwide, the proportion of younger age groups is on an increase (Nelson et al., 1999; Fisher et al., 2010). This declining trend of CRC has largely been associated with an increase in screening rates in 50 yrs or older age groups. However, CRC rates are increasing among adults under 50 years, for whom screening is not recommended (Siegel et al., 2009).

CRC in young adults is more frequently reported from developing countries, in which the incidence is much higher from that reported in developed countries. The reasons for this trend may include risk factors modification and improvements in medical intervention which are lacking in our setup compared to the developed world. Rise in incidence of colorectal cancer among young females as reported by few series is not evident in the present study (Fisher et al., 2010) The predominant symptom

was bleeding per rectum compared to pain abdomen which was the most frequent symptom of the earlier time period. Bleeding per rectum, alteration of bowel habits and pain abdomen were the common modes of presentation in other series too (Fante et al., 1997; Fletcher, 2009). Delay in diagnosis is a subject of interest because this may provide an explanation as to why younger people present with later-stage tumors. One possible explanation is an accelerated carcinogenic pathway due to influence of environmental influences or a genetically determined susceptibility.(Hall et al., 1994) However, the definition of "delay" is difficult to standardize as this may be due to delay in presentation on the part of the patient, lack of access, or misdiagnosis on the part of the physician. The average delay in presentation in most series was 6.2 months which was comparable with the present study. (O'Connell et al., 2003) Sigmoidoscopy or colonoscopy was the investigation yielding the diagnosis in most cases in both the time intervals (Kiran et al., 2002). Barium enema was the most frequent diagnostic investigation in other series. Endoscopic examination is one method which also helps in obtaining the histology. Hence, in our practice, barium enema is the second investigation if lower GI endoscopy is not possible or incomplete.

Rectum was still the commonest site of primary tumor though the proportion seemed to be decreasing which has also been reported by others. This emphasizes the fact that digital rectal examination should be a part of clinical examination in patients presenting with above mentioned symptoms (Kiran et al., 2002). The proportion of right sided colonic cancer in the present study has increased though statistically not significant. This rightward shift in the distribution of colonic colonic distribution of cancer has also been reported by others (Cucino et al., 2002; Larsen et al., 2010). Possible explanation for this phenomenon is the decrease in left sided lesions leading to relative increase in right sided tumors (Toyoda et al., 2009). The disproportionate decrease in left sided tumors have also been attributed to preference of use of sigmoidoscopy over colonoscopy because of its cost and simplicity. Due to increased use of sigmoidoscopy, majority of adenomatous polyps from the left colon are removed prior to their malignant transformation (Saltzstein et al., 2007). There seems to be an increasing trend of detection of these malignancies at an earlier stage, especially with increase in detection of Modified Duke's B. The increased use of sigmoidoscopy and colonoscopy may be a reason of detection at an earlier stage (Chu et al., 1994) However, worldwide there still seems to be detection of colorectal malignancy in late stages. Poorly differentiated histological predominance is also supported by other series (Behbehani et al., 1985; Parry et al., 1995). The proportion of colorectal resections with curative intent is increasing in the present study. Laparoscopic assisted resection though already established in many centers, is just being started in our setup (Braga et al., 2005; Liang et al., 2008).

In conclusion, CRC among Nepalese young adults accounts for a high incidence (28%) among all CRC cases. Colorectal carcinoma in young adults has shown a slight gender changes with male preponderance. Although right sided colonic cancer has been increasing, rectum is the commonest site. There is also an increasing trend of detection of these tumors at an earlier stage (Modified Dukes B) and hence improving the prognosis.

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