

Management of Sigmoid Cancer In dr Cipto Mangunkusumo Hospital during 2008–2011

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Abstract

A retrospective analysis was performed to sigmoid cancer cases in the digestive surgery division of Cipto Mangunkusumo Hospital during the period of 2008–2011. Fifty-two cases were analyzed for metastases, stages and histopathology; mortality and morbidity were calculated for anastomotic leakage, 3-year survival, and incidence of local recurrence. Three-year survival analysis was performed using Kaplan–Meier based on staging and histopathology. The overall operative mortality was 1.9%, and the anastomotic leakage incidence was 8.1%. The incidence of local recurrence was 9.1%. The 3-year survival rates based on Dukes Staging were as follows: 100% survival for Dukes A, 95.5% for Dukes B and 61.1% for Dukes C and 0% for Dukes C. The 3-year survival rates in sigmoid cancer according to histopathology were 73.5% for well differentiated, 63.6% for moderately differentiated and 100% for poorly differentiated (sample size was one patient, could not be assessed), with 50% survival for mucinous histopathology. The overall survival in this sigmoid cancer study was 69.2%. (J I Bedah Indones. 2014;43:5–9).

Introduction

The incidence of colorectal cancer is increasing every year.^{1,2} Colorectal cancer is the third most prevalent malignancies in women and the fourth most prevalent in men worldwide.^{3,4} With 5-year mortality rate of 40%, the American Cancer Society (ACS) estimated that, approximately 141,210 people will be affected by colorectal cancer and 49,380 people will die from it in United States in 2011.^{5,6} During the period of 2000–2010, there were 662 cases of colorectal cancer reported in Cipto Mangunkusumo Hospital.⁷

Sigmoid colon is the most common location of cancer lesion compared to other segments of the colon.³ Two-thirds of colon cancers arise from the left colon and one-third from the right colon.^{5,6,8} The distribution of colon cancer include sigmoid colon (40%) and caecum or colon (25–35%). Generally, the incidence of sigmoid colon cancer increases by 1.2% each year in females and 2.5% in males since 2003.³ This increase is caused by the increased availability of supporting diagnostic measures, including endoscopy and imaging.

Methods

In a four year period of 2008–2011, a retrospective evaluation was conducted to patients who seek treatment to Cipto Mangunkusumo Hospital with the working diagnosis of sigmoid cancer and underwent surgical management by sigmoidectomy or colostomy, either by elective or emergency surgery. Sigmoid colon cancer is defined by colon tumor located 12 cm or more from the anocutaneous line based on rigid sigmoidoscopy to the descending colon. Cases with anterior resection surgery or pathologic specimen from the rectum were excluded from the study.

Results

During the period of 2008–2011, fifty-nine (59) patients with sigmoid cancer were reported in the digestive surgery division of dr Cipto Mangunkusumo Hospital. Seven patients were excluded because they underwent anterior resection surgery and pathologic findings showed rectal tissues. The remaining 52 patients were followed until they die or at least until 3 years since the surgery. The data was analyzed using Kaplan–Meier to assess patient's survival.

Table 1. Sigmoid cancer in Digestive Surgery Division during 2008–2011

The 3-year survival rates of sigmoid colon cancer based on Duke staging were as follows:

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100% survival for Dukes A, 95.5% for Dukes B and 61.1% for Dukes C and 0% for Dukes C.

Table 1. Sigmoid cancer in Digestive Surgery Division during 2008–2011

Characteristics	Number of subjects	Total	%
Gender			
Male	30	52	57,7
Female	22	52	42,3
Age :			
Range: 24 – 78 th			
Median: 55,5 th			
Mean: 52,9 th			
Chief complain:			
Hematoschezia	32	52	61,5
Mass	9	52	17,3
Obstruction	9	52	17,3
Sigmoid–vesical fistula	2	52	3,9
Surgical procedure:			
Sigmoidectomy	49	52	94,2
Colostomy	3	52	5,8
Timing of surgery:			
Elective	43	52	82,7
Emergency	9	52	17,3
Type of surgery:			
Curative	44	52	84,6
Paliative	8	52	15,4
Duke Staging:			
A	4	52	7,7
B	22	52	42,3
C	18	52	34,6
D	8	52	15,4
Histopathology :			
Adeno Ca	46	52	88,5
Well	34		
Moderately	11		
Poor	1		
Mucinous	6	52	11,5
Local recurrence	4	44	9,1
Anastomotic leakage	4	49	8,1
Mortality	1	52	1,9

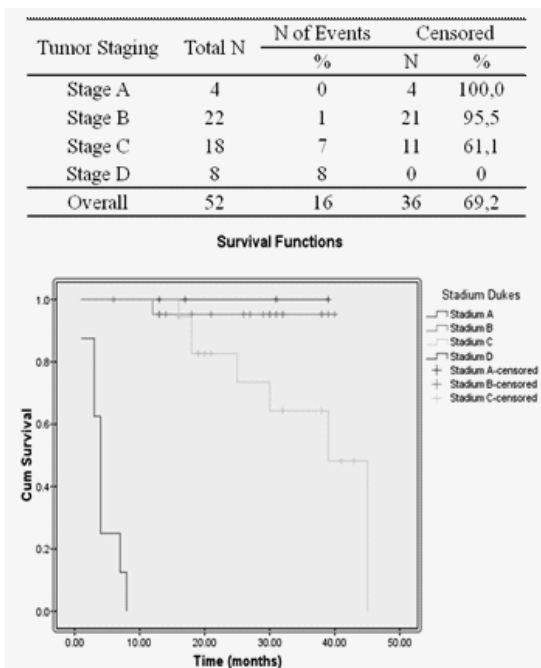


Figure 1. Kaplan Meier, Stage-based

The 3-year survival rates in sigmoid cancer according to histopathology were 73.5% for well differentiated, 63.6% for moderately differentiated and 100% for poorly differentiated (sample size was one patient, could not be assessed), with 50% survival for mucinous histopathology.

Histopathology	N		%	
	N	%	N	%
Well differentiated Adeno Ca	34	9	25	73,5
Moderately differentiated Adeno Ca	11	4	7	63,6
Poorly differentiated Adeno Ca	1	0	1	100,0
Mucinous Adeno Ca	6	3	3	50,0
Overall	52	16	36	69,2

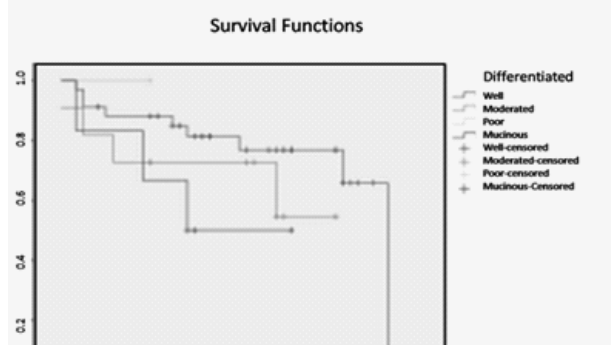


Figure 2. Kaplan-Meier, Survival based on histopathology

Discussion

Sigmoid colon is the most common site of malignancy compared to other colon segments.³ The distribution of cancer in the sigmoid between males and females is comparable. During 2005–2009, the incidences of sigmoid cancer in Europe were 166 cases, consisted of 63 (38%) females and 103 (62%) males. In Japan, the management of patients with sigmoid cancer was performed to 133 patients during the period of 2007–2010, including 78 (56.6%) female patients and 55 (41.4%) male patients. In this study, 52 cases of sigmoid cancer were observed, including 30(57.5%) female patients and 22(42.3%) male patients.

Sigmoid cancer most commonly affects people aged > 40 years old, although the tendency of its occurrence in younger ages has also began to be reported. The mean age of occurrence is 70–75 years old. In this study, the most common age of presentation was old age (>60 years old), which represented 42.3% of the cases. Cases in younger age (<40 years old) also showed increasing incidence of 21.2%. This finding is in agreement with the tendency that colorectal cancer is starting to be observed in younger age.⁹

In his study in Cipto Mangunkusumo Hospital during the period of 2000–2010, Yusak observed the following staging distribution of colon cancer: 2.6% in stage I, 18.7% in stage II, 39.1% in stage III, and 30.36% in stage IV. In Ireland, 31% patients with sigmoid cancer who seek medical treatment to the hospital presented in stages I–II, while 50% presented in stages III–IV. As a comparison, the distribution of colorectal cancer based on its staging in Singapore showed that Dukes A,B,C and D stages represent 10% 22%, 32% and 36% of the patients, respectively.¹⁰ In this study, patients with sigmoid cancer who seek treatment in Cipto Mangunkusumo Hospital comprised of 22 (42.3%) patients in Dukes B, 18 (34.6%) in Dukes C, 8 (15.4%) in Dukes D and 4 (7.7%) in Dukes A stages.

The use of Dukes staging in this study was considered due to its applicability compared to AJCC 7th edition staging. One of the difficulties of the application of AJCC 7th edition is the counting of lymph nodes in the excised tumor mass tissues, where lymph nodes counting should be performed by a surgeon and

pathologist.^{4,10,11,12,13,14}

The most common histopathology type in sigmoid cancer is adenocarcinoma.^{4,12,13} In the literature, it was reported that adenocarcinoma represents 93% of sigmoid cancer, while the rest is represented by mucinous and neuro-endocrine tumors. In a study regarding histological characteristics of colorectal cancer in 1998–2001 in United States, which included 522,630 cases of colorectal cancer cases, adenocarcinoma was reported as the histopathology characteristic in 96% of the cases, while 2% was other carcinomas (including carcinoid tumor), 0.4% was epidermoid carcinoma, an 0.08% was sarcomas. In a study performed in dr Cipto Mangunkusumo Hospital in 2000–2010, Yusak reported colorectal cancer to consist of adenocarcinoma (71.6%), adenocarcinoma musinosum (9.1%), other types (5.7%), while in the remaining 13.6% of the cases, histopathology results could not be obtained. In our study, the most common type of sigmoid cancer was adenocarcinoma, which was found in 46 (88.5%) patients, and mucinous adenocarcinoma in 6 patients (11.5%).

The surgical management of sigmoid cancer is en bloc sigmoid resection for curative therapy. In the past, literatures also reported left hemicolectomy as the management of sigmoid colon cancer. However, Cataldo et al. reported in their study that left hemicolectomy was the ideal therapy for sigmoid cancer, while sigmoidectomy was reported to be sufficiently safe.⁸

Meanwhile, Ouchi A et al reported that sigmoid colon resection in sigmoid cancer should be accompanied with lymph node dissection.^{15,19,20,21} The standard operating procedure (SOP) of digestive surgery division for the surgical management of sigmoid cancer is en-bloc sigmoid resection, either by open or laparoscopic surgery. In this study, 49 (94.2%) patients underwent sigmoid resection and 3 (5.8%) patients only underwent colostomy.

The initial post-operative complication of sigmoid resection is leakage. Several factors that influence the occurrence of leakage include the general conditions of the patient and local factors. The general conditions include age, nutritional status and coexisting diseases; while local factors include anastomosis

techniques, utilized materials, vascularization and certainly the skill of the surgeon. According to literature, the rate of leakage ranges from 2 to 19%. Ogiso-Satso reported 0% rate of leakage in laparoscopic sigmoid resection. This number is possibly caused by a good pre-operative patient selection.¹⁶ Rudinskaite Giedre¹⁷ reported 7.4% rate of anastomotic leakage in sigmoid resection, which is in agreement with our study with 4 (7.7%) patients reported to have anastomotic leakage as post-operative complication.

Staging is the most important prognostic factor to predict the 5-year survival. The 5-year-survival for colorectal cancer if diagnosed in its early stages and the lesion is localized is 90%. However, only 39% of the patients were diagnosed in early stages.¹³ If the tumor has spread to other organs and lymph nodes, the 5-year survival rate is decreased to 70%; and if distant metastases are present, the rate decrease even more to 12%.¹² According to staging, the 5-year survival rates for colon cancer are 85–95% (stage I), 60–80% (stage II), 30–60% (stage III) and 6% (stage IV).

In Scotland, the 5-year survival rates for Dukes A,B,C and D are 81%, 50%, 33% and 0%, respectively.²² TKTi showed the 5-year survival rates for colorectal cancers for Dukes A,B, C, and D are 100%, 50%, 33% and 0%, respectively. The 3-year survival rates for Dukes A,B, C, and D for sigmoid cancer in this study are 100%, 95.5%, 61.1% and 0%, respectively. In spite of staging, the histological grading also significantly influences the survival rates. Patients with well differentiated carcinoma (grades 1 and 2) have a better 5-year survival than those with poorly differentiated carcinoma (grades 3 and 4). Based on tumor grading, the 5-year survival rates of colon cancer are 59–93% (grade I), 33–75% (grade II) and 11–56% (grade III).

The 3-year survival rates in sigmoid cancer according to histopathology were 73.5% for well differentiated, 63.6% for moderately differentiated and 100% for poorly differentiated (sample size was one patient, could not be assessed), with 50% survival for mucinous histopathology.

The morbidity and mortality in surgeries performed during emergency situations are higher than the ones

performed in elective basis. The mortality rate of elective surgery is less than 2%, while for emergency surgery the number reaches 20%.^{12,13} The perioperative mortality observed in our study was 1.9% in elective surgery and no mortality was observed in emergency surgeries.

The overall survival of patients with sigmoid cancer in this study is 69.2%. The number found in this study is far from perfect, taking into account the small number of samples, the short evaluation time of only 3 years and the use of different staging system. Improvements in the number of cases included in the study, period of evaluation and staging based on the 7th edition of AJCC should be pursued in future studies.

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