

Introduction

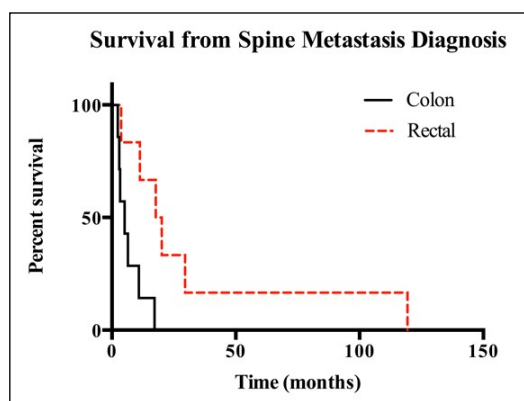
Colorectal cancer is the second and third most common cancer among men and women, respectively. The number of patients with advanced metastatic colorectal cancer is likely to substantially rise as the aging population continues to grow. Osseous metastasis is the third most common site of distant metastasis, with the spinal column most frequently involved. The median survival is particularly poor after spinal metastasis secondary to colorectal cancer, ranging from 4.1 to 15.3 months. Despite limited survival, palliative surgical treatment is frequently offered with the goal of providing pain relief, preserving neurologic function and maintaining mechanical stability. The location of the primary lesion within the rectum compared to the colon may influence survival.

Objective

To evaluate clinical outcomes of patients who underwent spine surgery for metastatic lesions secondary to colorectal cancer, and compare survival based on the location of their primary lesion either proximal (i.e. colon) or distal (i.e. rectal) to the rectosigmoid junction.

Methods

A retrospective review of patients who underwent spine surgery for metastatic colorectal cancer from 2005 to 2011 was performed. Preoperative, operative and postoperative factors; functional outcome as determined by change in Karnofsky Performance Status (KPS) and modified Rankin scale (mRS) during follow-up; and survival were recorded. A univariate analysis was performed, with patients stratified into two groups based on the position of the primary cancer either proximal or distal to the rectosigmoid junction.



Patient Characteristics

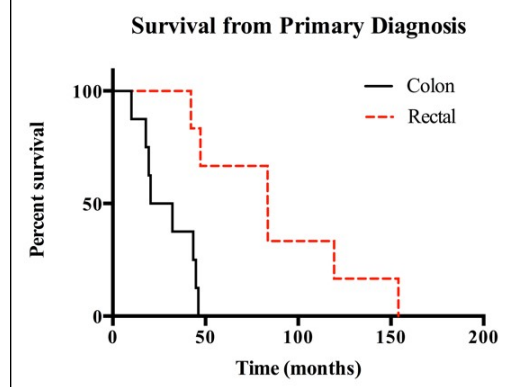
Table 1. Summary of patient characteristics

Baseline Characteristics	Colon Primary (N=8)	Rectal Primary (N=6)	p-value
Age, years (IQR)	64 (51-75)	51 (44-52)	0.04
Sex, female, n (%)	3 (33)	4 (67)	0.59
Location of Primary Lesion, n (%)			
Colon	8 (100)	0 (0)	
Rectum	0 (0)	6 (100)	
Comorbidities, n (%)	7 (88)	3 (50)	0.24
Time to spine met from primary diagnosis, years (IQR)	2 (1-3)	4 (3-5)	0.18
Anatomic location of met, n (%)			
Cervical	2 (25)	0 (0)	
Thoracic	4 (50)	1 (17)	
Lumbar	1 (13)	2 (33)	
Sacral	0 (0)	2 (33)	
Cervicothoracic	1 (13)	0 (0)	
Thoracolumbar	0 (0)	1 (17)	
Presenting symptoms, n (%)			
Pain	5 (63)	6 (100)	0.21
Motor weakness	5 (63)	3 (50)	1.00
Gait dysfunction	2 (25)	2 (33)	1.00
Sensory deficit	1 (13)	1 (17)	1.00
Presenting KPS, n (%)			
>70%	5 (63)	3 (50)	1.00
40-70%	0 (0)	2 (33)	0.16
<40%	2 (25)	1 (17)	1.00
Presenting mRS, median (IQR)	1 (1-3)	2 (1-4)	0.72

Peri-operative Characteristics

Table 3. Perioperative outcomes

Outcome Variables	All Cases (N=21)
Intraoperative complications, n (%)	0 (0)
Postoperative complications, n (%)	11 (52)
Wound infection	5 (24)
DVT	4 (19)
PE	2 (10)
Wound dehiscence	2 (10)
Pneumonia	2 (10)
Anemia	1 (5)
Revision required, n (%)	1 (7)



Outcomes

Table 4. Outcomes at last follow-up

Outcomes Variables	All Patients (N=14)
KPS at LFU, n (%)	
>70%	2 (14)
40-70%	7 (50)
<40%	3 (21)
mRS at LFU, median (IQR)	4 (3-4)
Change in KPS and mRS	
Stable	4 (29)
Improvement	2 (14)
Worsening	6 (43)
Unknown	2 (14)
Local recurrence of spine met/cord compression, n (%)	5 (36)
Time to recurrence, months (IQR)	3 (1-3)
Distant progression of primary cancer, n (%)	6 (43)
Median survival from primary diagnosis, months (IQR)	44 (23-75)
Median survival from spine met, months (IQR)	11 (4-18)
Median survival from surgery, months (IQR)	4 (3-6)

Conclusions

In this series, patients with spinal metastasis arising from the rectum display longer survival compared to colonic spinal metastasis.

In addition, surgery may be associated with a high incidence of perioperative complications.

Therefore, spine surgeons should consider these factors when assessing patient candidacy for operative management.

Data from large, retrospective studies and prospective randomized controlled trials are needed to further guide management in this high-risk patient population.