

A Rare Case Of Colon Cancer With Metastases To The Bone With Review Of The Literature

J Rodrigues, A Ramani, N Mitta, P Joshi

Citation

J Rodrigues, A Ramani, N Mitta, P Joshi. *A Rare Case Of Colon Cancer With Metastases To The Bone With Review Of The Literature*. The Internet Journal of Oncology. 2012 Volume 8 Number 2.

Abstract

Distant metastases from colon cancer spread most frequently to the liver and the lung. Risk factors include positive lymph nodes and high grade tumors. Colorectal cancer is the 3rd leading cause of cancer related death in the world. Death is usually associated with recurrence and metastasis. Skeletal metastasis in primary colorectal carcinoma is an uncommon event. When such an event occurs it is usually a late manifestation of the disease. Isolated skeletal metastasis from primary colonic carcinoma is a rare event with incidence of 1.1% of all metastases from colonic cancers³. The most common presenting symptom of skull metastases is a visible, localized swelling of skull produced by growing tumor that erodes outer table. Metastasis to bone gives rise to osteolysis or mixed osteolysis – osteoblastic appearance on radiography.

CASE REPORT

The patient, a 62 year old female, presented to the Neurosurgery OPD with a swelling on her left forehead a year, measuring 5X6 cms for a year with no history of trauma or of any neurological deficit.

Trucut Biopsy of the swelling over the skull was suggestive of metastasis from adenocarcinoma. CT Scan of head and neck revealed an osteolytic lesion of left frontal bone and clavicular region. She was then referred to the Department of Surgery for the same.

On further inquiry, she gave history of altered bowel habits, and on examination had a non ballotable firm nontender mass in the right hypochondrium. She had history of any such lumps being operated in the past, nor had any family history of colonic carcinoma. She did not give any history of any addictions or risk factors for colonic cancers.

On colonoscopy a fleshy tumor was found in the right hepatic flexure (which was confirmed on CECT Abdomen) and on histopathology was proven to be as adenocarcinoma. CECT Abdomen and Thorax showed no evidence of any other metastases, especially neither in the Liver nor in Lung.

Her Complete blood count showed only anemia (Hb – 6.4) for which she was given adequate blood transfusions. Her renal and liver function tests were normal with no coagulopathy.

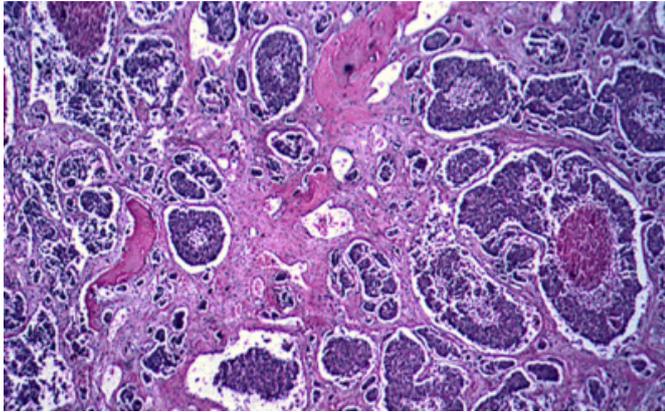
Figure 1

Figure 1 – Histopathology specimen of adenocarcinoma colon metastases to skull bone.



Figure 2

Figure 2- Gross specimen of the Right Colon showing a fleshy mass.



On exploration she was found to have Stage IIC colon cancer, and underwent Right Hemicolectomy. The final diagnosis of T3N0M0 adenocarcinoma with seven negative lymph nodes in the colon was made.

Figure 3

Figure 3- CT Scan of Abdomen showing colonic growth in the right side of abdomen



Figure 4

Figure 4- CT Scan of Skull showing isolated metastasis in the skull.



Figure 5

Figure 5- CT Scan of Thorax showing metastasis in Right side of Clavicle.



Post operatively, Patient has already, received 6 cycles of chemotherapy -- IV Oxaliplatin 80-100mg/sq m BSA and Oral Doxifluridine 200mg, BD for 14 days. However as there hasn't been any noticeable change in the size of the skeletal metastases after the chemotherapy, radiotherapy and/or craniectomy is being considered as a treatment option.

DISCUSSION

Bone metastasis often indicates advanced case of colon

cancer. Most commonly involved is spine (65%), hip/pelvis (34%), long bones (26%), other sites (17%). 5-year survival rate of colon cancer with bone metastasis is 8.1% and median survival rate less than 42.2 months.

Figure 6

Table 1: Colorectal cancer organ metastasis in certain criteria

Organ metastasis	Total metastasis	At initial diagnosis
Liver	30%	28%
Lung	25%	6.3%
Bone	5.5%	7.1%

Stage IIC colon cancers are associated with a fair five year survival rate and if metastases occur, they are likely to arise from local recurrence or follow lymphatic dissemination to the liver or lungs. Risk factors include high grade tumors and lymph node involvement. Isolated metastases to the appendicular skeleton are very rare, particularly in the absence of identifiable risk factors Isolated skeletal metastases are quite rare and are usually confined to the axial skeleton. We have not seen any case of an isolated multiple bone metastasis in a patient with node negative disease in literature.

Screening for colon cancer is an important factor in decreasing the morbidity and mortality of the disease, given the much higher survival rate for earlier stage tumors versus more advanced disease. Stage IIC colon cancer has a high five year survival rate of 85% as reported by the SEERS database².

Skeletal metastases with colon cancer occur in 5-10% of cases and usually after widespread metastatic disease³⁻⁷. The usual pattern of metastasis is through the liver and the lungs, thus making isolated skeletal metastases even more uncommon, at 1-2%^{3,5}. The most likely route for skeletal seeding is through Batson's plexus, a valveless system of veins draining to the vertebral column, making it the most common site for skeletal metastasis. Other rare sites that may accompany visceral metastasis, include the skull, pelvis, femur and humerus^{3, 8-10}

Disease-free survival from the time of diagnosis to the onset of skeletal metastases ranged from 10 to 5.309 days according to Kanthan et al¹¹. They also concluded that 38% with bone only vs. 16% with bone and visceral metastasis were alive at 5 years follow-up, although no statistical difference was found in the 10-year survival rate between the two groups. Also Nozue et al¹² reported a median interval

of 16.5 months from the initial diagnosis and operation to the onset of osseous metastases (range 0-108 months). The 1-year survival rate was 20% and the patients with solitary osseous metastasis (2 patients) survived more than 1 year.

For the early detection of osseous metastases the most effective method is considered to be bone scan. In plain radiography the lesions may be osteolytic or osteoblastic (less common). Although solitary bone metastases from colorectal cancer are rare, the evidence from the literature shows that we should consider osseous metastasis as a cause of bone pain in patients with colorectal cancer, even in the absence of visceral metastases. These patients, with multiple bone metastasis or/and visceral metastasis may be offered postoperatively palliative chemotherapy and radiotherapy.

CONCLUSION

Isolated multiple skeletal metastases without any other visceral metastasis, have rarely been reported in worldwide literature. This case is published as one of such rare patients having such a presentation. Other cases with skeletal metastases that are reported have always been associated with liver and/or lung metastasis.

References

r-0. Roth et al. BMC Cancer 2009 (9:274 doi:10.1186/1471-2407-9-274)
r-1. O'Connell JB, Maggard MA, Ko CY. Colon cancer survival rates with the new American joint committee on cancer sixth edition staging. J Natl Cancer Inst. 2004;96:1420–1425. doi: 10.1093/jnci/djh275.
r-2. Kanthan R, Loewy J, Kanthan SC. Skeletal metastases in colorectal carcinomas: a Saskatchewan profile. Dis Colon Rectum. 1999;42:1592–1597. doi: 10.1007/BF02236213.
r-3. Katoh M, Unakami M, Hara M, Fukuchi S. Bone metastasis from colorectal cancer in autopsy cases. J Gastroenterol. 1995;30:615–618. doi: 10.1007/BF02367787.
r-4. Besbeas S, Stearns MW Jr. Osseous metastases from carcinomas of the colon and rectum. Dis Colon Rectum. 1978;21:266–268. doi: 10.1007/BF02586701.
r-5. Nikolaidis D. Skeletal metastases from carcinoma of the colon. J Maine Med Assoc. 1968;5:155–158.
r-6. Abrams HL, Spiro R, Goldstein N. Metastases in carcinoma. Cancer. 1950;3:74–85. doi: 10.1002/1097-0142(1950)3:1<74::AID-CNCR2820030111>3.0.CO;2-7.
r-7. Patel NN, Shah PR, Wilson E, Haray PN. An unexpected supraclavicular swelling. World J Surg Oncol. 2007;5:90. doi: 10.1186/1477-7819-5-90.
r-8. Hoehn JL, Ousley JL, Avecilla CS. Occult carcinoma of the colon and rectum manifesting as osseous metastasis. Dis Colon Rectum. 1979;22:129–132. doi: 10.1007/BF02586779.
r-9. Ihle PM, McBeath AA. Bone metastasis from colonic carcinoma. J Bone and Joint Surg. 1973;55A:398–400.
r-10. Kanthan R, Loewy J, Kanthan SC. Skeletal metastases in colorectal carcinomas: a Saskatchewan profile. Dis Colon Rectum. 1999;42:1592–1597
r-11. Nozue M, Oshiro Y, Kurata M, Seino K, Koike N,

Kawamoto T, Taniguchi H, Todoroki T, Fukao K. Treatment and prognosis in colorectal cancer patients with bone metastasis. *Oncol Rep.* 2002;9:109–112.

Author Information

J Rodrigues

Director Professor, Department of Surgery, Goa Medical College

A Ramani

Assistant Professor, Department of Surgery, Goa Medical College

N Mitta

Senior Resident, Department of Surgery, Goa Medical College

P Joshi

Junior Resident, Department of Surgery, Goa Medical College