

## Rectal Carcinoma with Osteosclerotic Metastases-A Rare Occurrence

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### Abstract

Colorectal carcinoma is one of the most deadly cancers worldwide. Osseous metastases are unusual until late in the disease and usually follow hepatic & pulmonary metastases. Osseous metastases in rectal carcinoma are usually osteolytic or mixed with a minor proportion presenting solely as osteosclerotic metastases. In this article, we present a rare case of rectal carcinoma showing pure, multifocal, osteosclerotic metastases at first diagnosis without any pulmonary/hepatic metastases emphasizing the role of osseous evaluation in all patients whether early or late in the disease.

**Keywords:** Rectal; Carcinoma; Osteosclerotic; Metastases

### Introduction

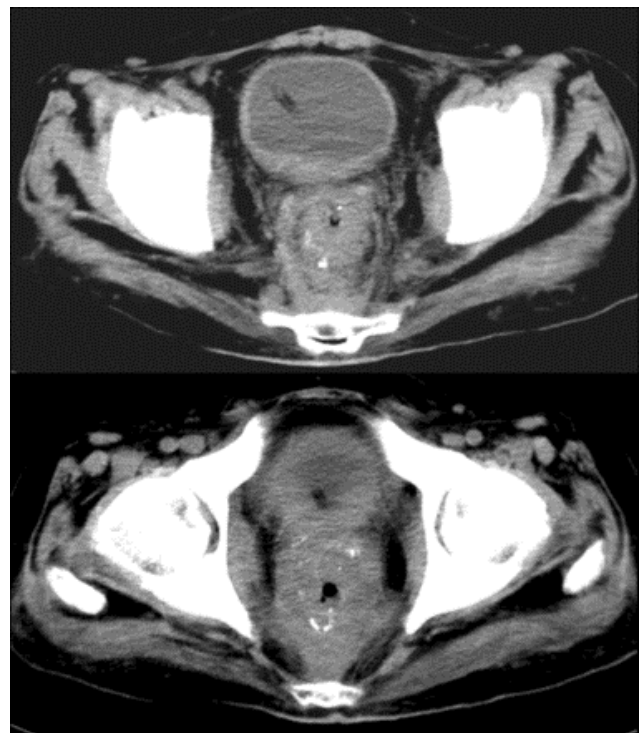
Colorectal carcinoma ranks third among the cancer-related deaths which are primarily related to recurrence and metastases [1]. Osseous metastases from colorectal carcinoma are rare and usually occur in the late stage of the disease with vast majority following pulmonary or hepatic metastases [2,3]. Very few cases of rectal carcinoma with osseous metastases escaping pulmonary/hepatic circulation have been reported in the literature [4,5]. Osteolytic metastases is commonest followed by mixed (osteolytic & osteosclerotic) and osteosclerotic metastases in the decreasing order of frequency [6].

### Case Report

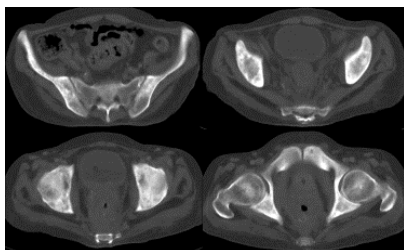
A forty-year old male presented with history of off & on, bright-red, partially-mixed blood in stools since last 3-4 months associated with weakness, anorexia and weight loss. Clinical examination revealed signs of anemia and fixed annular mass on digital per rectal examination causing luminal stenoses that bled on touch. Routine laboratory tests revealed raised ESR (40 mm) and reduced total RBC count with microcytosis and hypochromia signifying iron deficiency anemia. Serum CEA levels were within normal limits.

Posteroanterior radiograph of the chest was unremarkable while ultrasonography revealed rectal mass without obvious retroperitoneal adenopathy & hepatic parenchymal lesions. Contrast-enhanced computed tomography of the patient was then performed which revealed significant circumferential mural thickening in rectum showing focal ulceration and multifocal, punctate calcifications causing luminal stenoses associated with involvement of external sphincter; few small perirectal nodes and invasion of perirectal and presacral fat/fasciae without obvious pelvic/retroperitoneal adenopathy (Figure 1). Note was also made of multifocal, ill-defined, sclerotic lesions in the iliac bone on both sides of midline without obvious hepatic or pulmonary parenchymal metastases (Figure 2). Based on the radiological findings, high suspicious of rectal mucinous adenocarcinoma with osteosclerotic pelvic metastases was suggested.

Histopathological examination of the rectal and pelvic bone biopsy specimen revealed moderately differentiated mucinous adenocarcinoma with bone metastases confirming the radiological diagnosis. The patient was then referred to a dedicated cancer hospital for further management.



**Figure 1:** Transaxial CECT images show rectal mass with ulceration in posterior wall on right side of midline causing luminal stenosis and invasion of external sphincter along with perirectal/presacral fat & fasciae.



**Figure 2:** Transaxial CECT images in bone window settings show osteosclerotic pelvic bone metastases.

## Discussion

Osseous metastases from colorectal carcinoma are rare with higher rarity in absence of pulmonary or hepatic metastases [4,7]. As the postulated route of spread is direct invasion of paravertebral venous plexus of Batson, the common sites of metastases are vertebrae followed by pelvic bones, sacrum, skull and long bones in the decreasing order of frequency.

Nozue et al. reported very low overall incidence of skeletal metastases in colorectal cancers i.e. 1.3% with majority of them being coexistent with hepatic/ pulmonary metastases and 0.32% incidence of isolated skeletal metastases with majority associated with rectosigmoid carcinoma [8,9]. Roth et al. also concluded in their study that bone metastases in colorectal cancers in the absence of visceral metastases are extremely rare [3]. Prognosis of patients with skeletal metastases is poor but better than when associated with visceral metastases [3,8,10]. Solitary bone metastasis is however associated with better prognosis than multifocal metastases [11].

Osseous metastases from colorectal carcinoma are predominantly osteolytic with osteoblastic or mixed type being very rare [6] making our index case rare because it was predominantly osteosclerotic in the absence of visceral metastatic lesions. Very few cases have been reported in the medical literature as ours [4,5,12]. Osteolytic lesions may demonstrate reactive bone formation in pre or post-chemotherapy states, at times mimicking primary bone tumor known as pseudo-sarcomatous change [7,13].

Diagnosis can be suspected by radiography in disseminated disease and by computed tomography or magnetic resonance imaging in radiographically occult disease. Though nonspecific yet bone scintigraphy using Tc-99 is the most sensitive method of detecting osseous metastases in the entire body. Final confirmation requires tissue biopsy.

Median survival of patients with skeletal metastases has been described to be around 10 months [2,8] but can be increased to up to 32 months with multimodality treatment including surgical excision, chemotherapy & radiotherapy [14].

Palliative treatment with radiation therapy or biphosphonates is the mainstay in all patients of rectal carcinoma presenting with osseous metastases (whether osteolytic or osteosclerotic) as latter is an ominous sign indicating impending death especially when accompanied with visceral metastases. Biphosphonates are more effective with osteolytic than osteosclerotic metastases as they

predominantly inhibit osteoclast activity. With increasing age of survival and medical insurance coverage, more and more cases may be detected & treated with this rare form of disease. Hence recognizing the rare presentation of rectal carcinoma is not only essential in reducing the patient as well as the social financial burden but also in understanding behaviour of the tumor that help in inventing new drugs/forms of treatment [15].

## Conclusion

Though skeletal metastases especially osteosclerotic type are rare in rectal carcinoma yet they do occur. Hence, in addition to prostate & breast carcinoma, colorectal carcinoma should also be kept in the differential diagnosis of osteosclerotic metastases. Better prognosis of osseous metastases alone (both solitary as well as multifocal) in colorectal carcinoma makes their early detection imperative in improving the survival of these patients.

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