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Case Report

Interesting Case of Skin Metastasis in Colorectal Cancer and Review of Literature

J. M. V. Amarjothi, R. Villalan, J. Jeyasudhahar, and O. L. NaganathBabu

Rajiv Gandhi Government General Hospital, Department of Surgical Gastroenterology, Madras Medical College, Chennai, Tamil Nadu, India

Correspondence should be addressed to J. M. V. Amarjothi; drmosesvikramamarjothi@hotmail.com

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Skin metastasis is a complication rarely seen after curative resection for colorectal cancer and chemotherapy. The article describes a metachronous case of skin metastasis after curative resection. This article is presented to illustrate that genetic and molecular profiling of carcinoma is a must for diagnosis of aggressive biological behavior and that skin metastasis is usually a harbinger of adverse outcome.

1. Introduction

Cutaneous metastases though rare may be the earliest manifestation of metastatic colorectal cancer. Such metastasis often indicates a poor prognosis, with the situation being further complicated by suboptimal treatment and aggressive biological behavior of such tumors.

A 25-year-old male patient presented with a history of bleeding per rectum, mucus discharge, and features of intestinal obstruction for 3 months. He was positive for Hepatitis B surface antigen (HBsAg); the exact etiology of which was unknown. On physical examination, rectal examination revealed semicircumferential growth involving 6 cm from anal verge 9-3 o'clock position. HPE was suggestive of poorly differentiated carcinoma. Colonoscopy was not passible due to stenosis. Carcinoembryonic antigen (CEA) levels were 1.3 ng% (<5 ng%). Contrast-enhanced computerised tomography (CECT) (Figure 1) showed irregular circumferential thickening of the wall of the rectosigmoid junction narrowing lumen, 15 cm in length from 6–19 cm with pericolonic and perirectal fat stranding. Hence, a diversion colostomy was done and the patient was subjected to long course chemoradiation with cisplatin and 5-fluorouracil and after 8-week interval, restaging was done. Per rectal, examination did not reveal palpable tumor. Imaging (Figure 2) done showed only wall thickening at the lower rectum without evidence of enlarged lymph nodes. Serum CEA was 1.7 ng% ($n < 5$ ng%); low anterior resection was done using CDH31 stapler and diversion ileostomy was done. HPE revealed complete regression of tumour in the tissue studied. The patient was put on adjuvant chemotherapy. Two months later, he developed multiple cutaneous nodules on the chest and back (Figure 3). FNAC was suggestive of adenocarcinoma. Two months later, he developed multiple peritoneal metastases and succumbed to the disease a month later.

Skin involvement is seen in about 5% of patients with colorectal cancer [1] where it appears as subcutaneous or intradermal small nodules, and it can be confused with cysts, lipomas, neurofibromas, or alopecia due to these characteristics [2, 3].

Two meta-analysis [3, 4] reported a 5–5.3% incidence of skin involvement in cancer patients. In other studies, Kauffman and Sina [5] and Lookingbill et al. [2] reported an incidence of 0.7–9% and 10%, respectively, for skin metastasis.

In an autopsy series of review of cutaneous metastasis from internal carcinoma [6, 7], the most common primary site is the breast followed by the lung. The rectum is a very

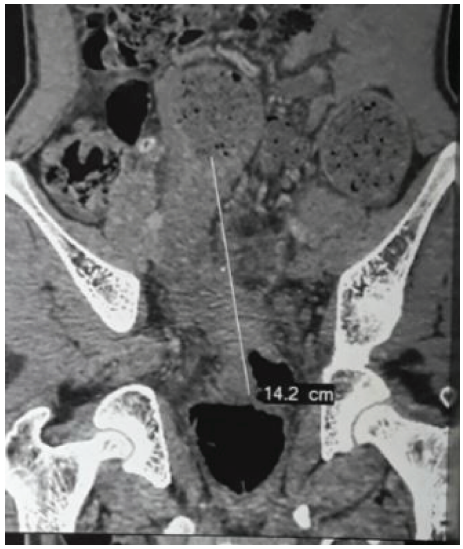


Figure 1: CECT showing the circumferential rectal thickening extending for 15 cm.

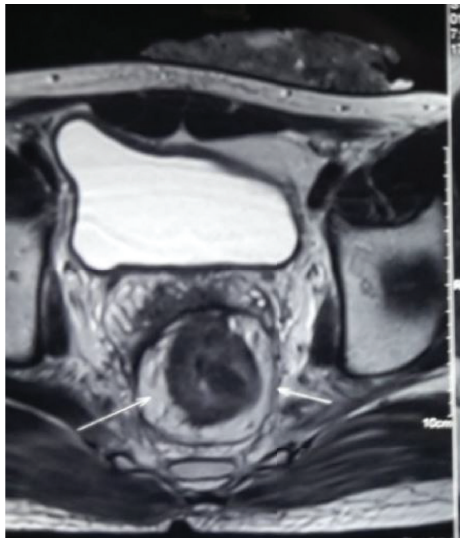
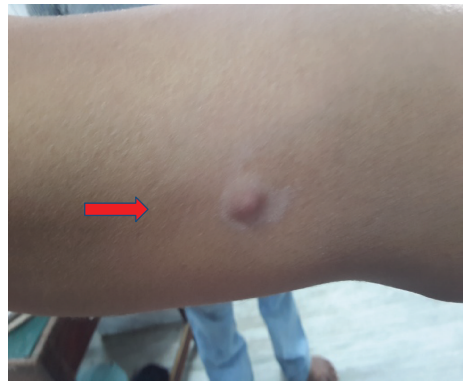


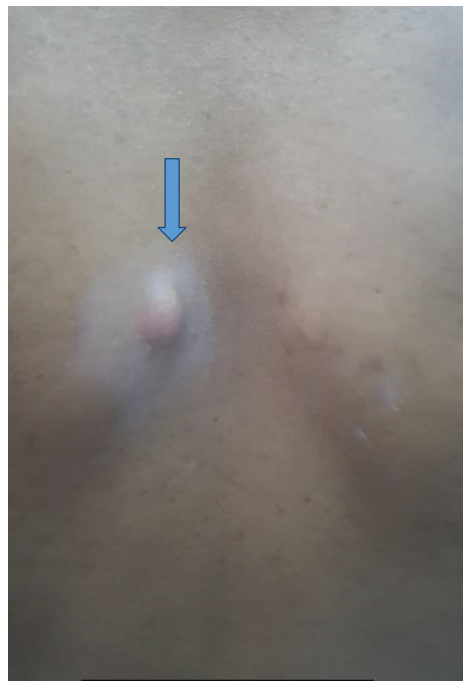
Figure 2: MRI pelvis of the same patient showing circumferential thickening of the rectum.

rare site and the most common site of metastasis was the previous surgical scar followed by the pelvis, back, chest, upper extremities, head, and neck [5]. Most of the cutaneous metastases are well-differentiated and mucin-secreting [7]. Several mechanisms of cutaneous metastasis have been postulated including lymphatic or hematogenous spread, direct extension, or implantation during surgery [2].

Skin metastases from colorectal adenocarcinoma commonly occur metachronously within the first two years after resection of the primary tumor and are often present simultaneously with metastases to other organs like the liver [7]. The most common primary sites of cutaneous colorectal metastasis have been reported as follows: rectum (55%), sigmoid colon (17%), transverse colon (9%), rectosigmoid (7%), cecum (4%), and ascending colon (4%) [8, 9].



(a)



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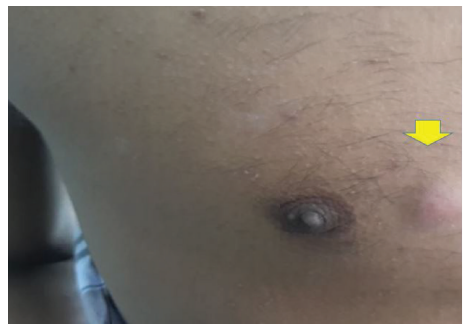

(c)

Figure 3: Metastatic nodules on the forearm (red arrow), chest (yellow arrow), and back (blue arrow).

Skin involvement that can be seen at the time of diagnosis or during the course of treatment is a sign of advanced stage (Table 1). The prognosis is generally poor with survival of about 18 months [2] with a general range of about 1–34 months [10]. Surgical biopsy may not be logical for these

Table 1: Cases of rectal cancer with cutaneous metastasis.

Author, year	Age (years)	Sex	Histology	Stage	Primary cancer treatment	Interval (months)	Skin metastasis location	Skin metastasis morphology	Skin metastasis treatment	Survival (follow-up time in months)
Gottlieb and Schermer, 1970 [12]	72	F	Adenocarcinoma-sigmoid	NA	Sigmoidectomy	57	Palms	Nodules	—	NA
Gottlieb and Schermer, 1970 [12]	67	M	Adenocarcinoma-descending colon	NA	Left hemicolectomy	4	Face	Nodules/ulcers	NA	6 months
Gray and Das, 1989 [13]	79	F	Adenocarcinoma	—	Radiation	0	Leg	Nodules	None	No (18)
Reed and Stoddard, 1992 [14]	68	F	Adenocarcinoma, poorly differentiated	—	LAR	4	Perineum	Nodules	APR	—
De Friend et al., 1992 [15]	49	F	Adenocarcinoma	III	LAR	7	Perineum	Nodules	WLE	—
Kauffman and Sina, 1997 [5]	50	M	Adenocarcinoma, signet ring	IV	LAR+ACR	36	Multiple	Plaques	None	No (3)
Stavrianos et al., 2000 [16]	78	M	Adenocarcinoma-well differentiated	III	Transverse colon resection	3	Cheek oral commissure	Ulcers	RT followed by full thickness excision	11
Sukumar and Qureshi, 2001 [17]	75	M	Adenocarcinoma, poorly differentiated		APR+RT	3	Penile skin	Nodule, ulcers	NA	2
Adani et al., 2001 [18]	70	F	Adenocarcinoma	III	APR+AC	36	Leg	Nodules	CR	Yes (14)
Tsai et al., 2002 [19]	47	M	Adenocarcinoma, signet ring	III	APR+AC	11	Multiple	Nodules	C	No (4)
Melis et al., 2002 [20]	41	M	Adenocarcinoma	IV	NCR	1	Perineum	Plaques	None	—
Damin et al., 2003 [21]	44	M	Adenocarcinoma	II	LAR	6	Groin	Zosteriform	R	No (5)
Hayashi et al., 2003 [22]	50	M	Adenocarcinoma, mucinous	—	LAR	4	Perineum	Nodules	None	—
Wright et al., 2003 [23]	81	F		IV			Cholecystectomy scar			NA
Sarid et al., 2004 [24]	60	F	Adenocarcinoma, mucinous	III	NR+LAR+ACR	16	Chest, abdomen	Ulcers	WLE	No (56)
Alexandrescu et al., 2005 [25]	62	F	Adenocarcinoma	—	NA	60	Scar site	Masses	—	—
Alexandrescu et al., 2005 [25]	46	M	Adenocarcinoma	—	NA	36	Scar site	Masses	—	—
Reuter et al., 2007 [26]	69	M	Adenocarcinoma	II	APR+ACR	5	Perineum	Plaques	None	No (6)
Tan et al., 2006 [27]	70	M	Adenocarcinoma, mucinous	IIIB	LAR+AC	20	Back	Nodules	WLE, C	—
Tan et al., 2006 [27]	51	F	Adenocarcinoma	IIIB	APR	10	Perineum	Nodules	WLE, CR	9 months
Kilickap et al., 2006 [28]	29	M	Adenocarcinoma, signet ring	IIIA	LAR+APR +ACR	14	Chest wall, axilla	Nodules	WLE+C	Yes (4)
Fyrmpas et al., 2006 [29]	62	M	Adenocarcinoma-moderately differentiated	NA	Right hemicolectomy	36	Chin	Nodules	Excision biopsy	8 months

Table 1: Continued.

Author, year	Age (years)	Sex	Histology	Stage	Primary cancer treatment	Interval (months)	Skin metastasis location	Skin metastasis morphology	Skin metastasis treatment	Survival (follow-up time in months)
Nasti et al., 2007 [30]	76	F	Adeno carcinoma	III	Preop CRT	0	Face with parotid gland involvement	NA	NA	15
Gazoni et al., 2008 [31]	55	F	Adenocarcinoma, poorly differentiated	IV	Colostomy+CR	0	Perineum	—	CR	No (3)
Gazoni et al., 2008 [31]	66	M	Adenocarcinoma, poorly differentiated	IV	Colostomy+CR	0	Perineum	—	CR	No (4)
Gazoni et al., 2008 [31]	68	M	Adenocarcinoma, poorly differentiated	IV	Colostomy+CR	0	Thigh, axilla	—	CR	No (3)
Gazoni et al., 2008 [31]	72	M	Adenocarcinoma	IV	Colostomy+CR	0	Perineum	—	CR	No (5)
Gazoni et al., 2008 [31]	65	M	Adenocarcinoma	IV	Colostomy+CR	0	Perineum	—	CR	No (7)
Gazoni et al., 2008 [31]	78	M	Adenocarcinoma	IV	Stent+CR	0	Perineum	—	CR	No (1)
McWeeney et al., 2009 [32]	72	M	Adenocarcinoma	III	Ileostomy +NCR	6	Perineum	Nodules	WLE	—
Kurihara and Watanabe, 2009 [33]	66	M		III			Right thigh			7 months
Ayadi, 2009 [34]	63	M	Small cell carcinoma-rectum	III	CT	5	Scalp	Ulceroproliferative mass	Palliative CT	16 months
Saladzinskas et al., 2010 [35]	64	M	Adenocarcinoma, mucinous	IIA	NR+LAR	42	Face	Ulcers	WLE	Yes (7)
Ismaili et al., 2011 [36]	50	F	Adenocarcinoma, signet ring	IV	None	0	Multiple	Zosteriform	None	No (1)
Horiuchi et al., 2011 [37]	53	M	Adenocarcinoma	II		36	Scalp			6 months
Civitelli et al., 2011 [38]	73	F	Adenocarcinoma	III		Few days	Abdominal wall, chest, back			6 months
Balta et al., 2012 [39]	46	M	Adenocarcinoma, mucinous	IIIB	Colostomy	12	Perineum	Ulcers	None	—
Wang et al., 2012 [40]	63	M	Adenocarcinoma	III		6	Chest, neck, upper limb			2 weeks
Nasrolahi, 2013 [10]	33	M	Adenocarcinoma	IV	CT	3	Chest, back, neck	Plaque	CT	Few weeks
Rajan et al., 2012 [41]	36	M	Adenocarcinoma	IV		24	Lower extremities			3 months
Hamid and Hanbala, 2012 [42]	70	NA	Adenocarcinoma	II		86	Scalp, upper trunk			NA
Russo et al., 2012 [43]	72	M	Adenocarcinoma-signet cells	II	Right hemicolectomy	33	Back	Nodules	WLE	Yes
Rashid et al., 2012 [44]	65	M	Adenocarcinoma	III	Right hemicolectomy	0	Forearm	Nodules	—	17 months
de Miguel Valencia et al., 2013 [45]	55	M	Adenocarcinoma, mucinous	IIIB	NCR+APR +AC	18	Multiple	Nodules	None	No (—)

Table 1: Continued.

Author, year	Age (years)	Sex	Histology	Stage	Primary cancer treatment	Interval (months)	Skin metastasis location	Skin metastasis morphology	Skin metastasis treatment	Survival (follow-up time in months)
Ozgen et al., 2013 [46]	65	M	Adenocarcinoma	IIA	NCR+LAR +ACR	18	Perineum	Nodules	CR	Yes (12)
Akpak et al., 2014 [47]	47	F	Adenocarcinoma	IV	APR	36	Perineum	Ulcers	WLE+CR	—
Nesseris et al., 2013 [7]	80	M	Adenocarcinoma	III	Right hemicolectomy	12 m	Lower abdomen	Ulceroproliferative growth	2 cycles of CT	Yes
Kushwaha et al., 2013 [48]	40	M	Adenocarcinoma-signet cells	IV	CT	0	Chest, neck	Nodules	CT	4 months
Kushwaha et al., 2013 [48]	56	M	Adenocarcinoma	II	APR+CT	10	Chest, neck	Nodules	NA	8 months
Kushwaha et al., 2013 [48]	43	F	Adenocarcinoma	II	LAR+CT	8	Chest	Nodules	NA	7 months
Rogers et al., 2014 [49]	50	M	Adenocarcinoma, mucinous	IV		72	Scalp	Nodules	WLE	NA
Rogers et al., 2014 [49]	45	F	Adenocarcinoma		NCR+SX+ACR		Scalp	Nodules	WLE	Yes
Dehal et al., 2016 [50]	47	M	Adenocarcinoma, mucinous	IV	CR	1	Perineum	Nodules	R	Yes (12)
Fragulidis et al., 2015 [51]	62	M	Adenocarcinoma	IV	Endoscopic stent	4 m	Scalp	Nodules	WLE	No (2 weeks)
Varma et al., 2015 [52]	40	F	Adenocarcinoma	—	Colostomy	2 m	Pubic area, thigh	Nodules	NA	NA
Our case, 2018										

NCR: neoadjuvant chemoradiation; CR: chemoradiation; SX: surgery; CT: chemotherapy; WLE: wide local excision; NR: neoadjuvant radiation; ACR: adjuvant chemoradiation; APR: abdominoperineal resection; LAR: low anterior resection; NA: not available.

patients due to poor survival and FNA cytology may be accurate for diagnosis of skin metastasis in a patient with known malignancy [11]. Wide local excision of the cutaneous metastatic lesion is the preferred treatment option in isolated lesions which is quite rare. Multiple cutaneous metastases are only palliated due to dismal prognosis [7].

Consent

Consent of the next of kin was obtained prior to the preparation of manuscript.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Amarjothi JMV and Villalan R were responsible for the conceptualization, data curation, and formal analysis. Jeyasudhahar J and OL NaganathBabu were responsible for investigation, supervision, validation, and visualization and for the writing of the original draft, review, and editing.

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