Case Report

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

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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 possible 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 pericolic 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
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].

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
| 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 hemicolecetomy | 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 | III | LAR | 7 | Perineum | Nodules | WLE | — |
| De Friend et al., 1992 [15] | 49 | F | Adenocarcinoma | IV | LAR+ACR | 36 | Multiple | Plaques | None | — |
| Kauffman and Sina, 1997 [5] | 50 | M | Adenocarcinoma, signet ring | III | Transverse colon resection | 3 | Cheek oral commissure | Ulcers | RT followed by full thickness excision | 11 |
| Stavrianos et al., 2000 [16] | 78 | M | Adenocarcinoma-well differentiated | III | APR+RT | 3 | Penile skin | Nodules, ulcers | NA | 2 |
| Sukumar and Qureshi, 2001 [17] | 75 | M | Adenocarcinoma, poorly differentiated | III | APR+AC | 36 | Leg | Nodules | CR | Yes (14) |
| Adani et al., 2001 [18] | 70 | F | Adenocarcinoma | III | APR+AC | 11 | Multiple | Nodules | C | No (4) |
| Tsai et al., 2002 [19] | 47 | M | Adenocarcinoma, signet ring | III | APR+AC | 16 | Chest, abdomen | Ulcers | WLE | No (56) |
| Mells 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 | IV | LAR | 4 | Perineum | Nodules | None | — |
| Wright et al., 2003 [23] | 81 | F | Adenocarcinoma, mucinous | IV | Cholecystectomy scar | 20 | Back | Nodules | WLE, C | — |
| 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 | III | APR+AC | 5 | Perineum | Plaques | None | No (6) |
| Alexandrescu et al., 2005 [25] | 46 | M | Adenocarcinoma | III | APR+AC | 20 | Back | Nodules | WLE | — |
| Reuter et al., 2007 [26] | 69 | M | Adenocarcinoma | III | APR+AC | 10 | Perineum | Nodules | WLE, CR | 9 months |
| Tan et al., 2006 [27] | 70 | M | Adenocarcinoma, mucinous | III | LAR+ACR | 14 | Chest wall, axilla | Nodules | WLE+C | Yes (4) |
| Tan et al., 2006 [27] | 51 | F | Adenocarcinoma | III | APR | 10 | Perineum | Nodules | WLE, CR | 9 months |
| Kilickap et al., 2006 [28] | 29 | M | Adenocarcinoma, signet ring | III | LAR+APR+ACR | 36 | Right hemicolecetomy | Chin | Nodules | Excision biopsy | 8 months |
| Fyrmpas et al., 2006 [29] | 62 | M | Adenocarcinoma-moderately differentiated | NA | Right hemicolecetomy | 36 | Chin | Nodules | − | − |
| 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 | 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 hemicolecotmy | 33 | Back | Nodules | WLE | Yes |
| Rashid et al., 2012 [44] | 65 | M | Adenocarcinoma | III | Right hemicolecotmy | 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 (—) |
| 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 |

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. Jeya-Amarjothi JMV and Villalan R were responsible for the preparation of manuscript.

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