

Basaloid Squamous Cell Carcinoma of the Sigmoid Colon

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Abstract

Basaloid squamous cell carcinoma (BSCC) of the colon is rarely found proximal to the anal canal. We report a case of an 81-year-old woman who was diagnosed with squamous cell carcinoma (SCC) of the lung without metastasis and BSCC of the sigmoid with differing histologic findings suggesting that these tumors were separate primary neoplasms. SCC of the colon has a dismal prognosis. Surgery is the primary method of treatment when feasible, in addition to chemotherapeutic agents.

Introduction

Adenocarcinomas represent the vast majority of colorectal cancers (CRCs). Other histologic types, including squamous cell carcinoma (SCC) are relatively uncommon. SCC is of epithelial origin and is commonly seen in glandular tissues such as the lung, but is rarely seen as primary colorectal tumors outside the anal canal.¹ In colorectal adenocarcinoma, scattered areas of Paneth and neuroendocrine cells and small foci of squamous cell differentiation can be seen, but a pure colorectal SCC is an extremely rare tumor entity.¹ Basaloid squamous cell carcinoma (BSCC) is a unique subtype of SCC that typically affects the upper digestive tract, respiratory tract, and anal canal. On histologic examination, BSCC of the anal canal has been characterized by hyperchromatic basaloid cells and tumor nests with eosinophilic infiltration.²

Case Report

An 81-year-old woman was admitted to the hospital after sustaining a fall. She reported dyspnea for 2 weeks and suffered a non-ST segment elevation myocardial infarction at presentation. During initial work-up, a suspicious right-sided lung mass was seen on chest X-ray. Chest computed tomography (CT) demonstrated a 3.2 x 2.7-cm spiculated mass in the right upper lobe (Figure 1). Core needle biopsy revealed an infiltrating SCC grade 2 (Figure 2). A PET/CT showed marked increase in uptake of radionuclide in her lung tumor and deep in the rectosigmoid colonic area (Figure 3). Colonoscopy showed a non-obstructing mass in the sigmoid colon (Figure 4) with histopathological examination consistent with infiltrating BSCC, grade 2 (Figure 5). An immunohistochemical stain for p16, a tumor suppressor protein commonly overexpressed in high-risk human papilloma virus infections and cervical neoplasms, was strongly positive in the colon tumor. An immunohistochemical stain for p16 on the patient's lung tumor showed an incomplete and focal staining that was inconsistent with

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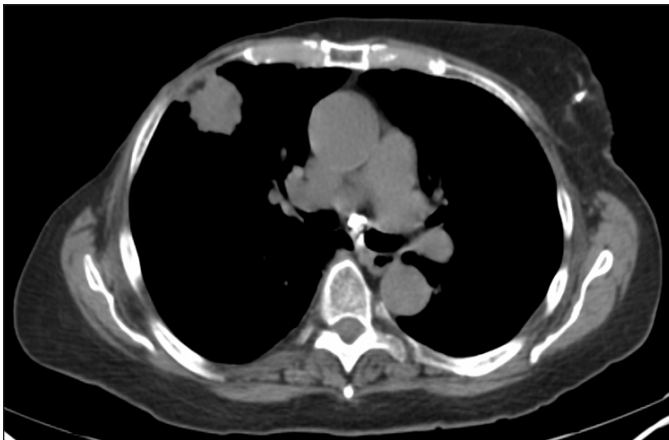


Figure 1. Chest CT demonstrating a 3.2 cm x 2.7 cm spiculated mass in the right upper lobe of the lung.

the pattern observed in the sigmoid tumor. These histologic findings suggested that the sigmoid tumor and lung tumor were primary cancers of separate organ sites.

The patient was started on chemotherapy (cisplatin and 5-fluorouracil) and radiation therapy for her sigmoid tumor with a plan to undergo cyber-knife radiation therapy for her lung tumor and eventual surgical removal of her sigmoid tumor. However, the patient was ultimately lost to follow-up per her primary care physician.

Discussion

The first case of pure SCC of the colon was reported in 1919, with sparse cases of adenosquamous carcinoma of the colon reported before that date.³ The mechanism underlying the origin of SCC from the colorectal mucosa remains unclear, but several mechanisms have been suggested. A proposed mechanism is that SCC results from the proliferation of basal cells following mucosal injury and squamous differentiation within an adenoma.^{4,5} Colorectal BSCC may stem from squamous metaplastic epithelium, cloacogenic embryologic nests, or totipotential basal cells that are present in colonic mucosa.⁶ Until 1999, the incidence of colorectal SCC was reported to be 0.1-0.25 per 1,000 colorectal neoplasms.⁷ Synchronous SCC of the colon was reported to be present in 3.2% of collected cases of colon cancer; of those, 10% had either antecedent, synchronous, or metachronous colon adenocarcinoma.⁸

Clinical presentation, diagnosis, and staging of colon and colorectal SCC are similar to primary colonic adenocarcinomas⁹; these tumors are usually aggressive and advanced at the time of presentation, leading to complications such as bleeding, bowel obstruction, and urinary obstruction secondary to local spread.^{8,10} Previous reports have suggested a slight predominance for colorectal SCC in the right colon.^{8,11} Because of the rarity of this tumor, the prognosis of patients

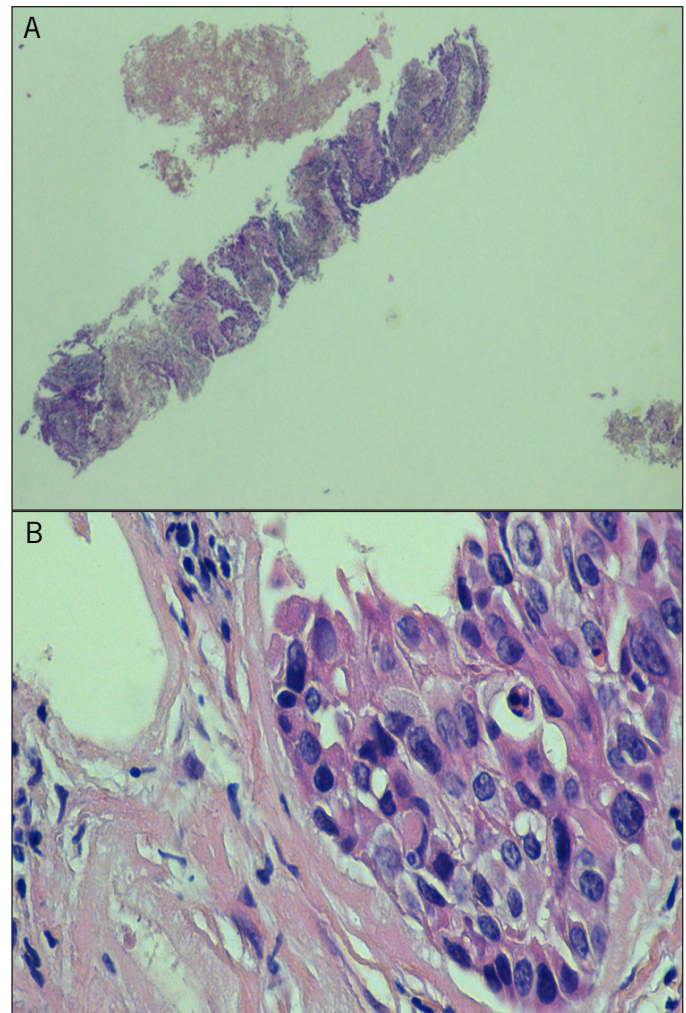


Figure 2. Right lung mass core needle biopsy with H&E staining. (A) Low power view (20x). (B) Invading squamous cell carcinoma characterized by large polygonal cells in nests with eosinophilic cytoplasm consistent with keratin, and surrounded by fibrosis (400x).

with colorectal SCC is difficult to establish,¹² but seems to be dismal. The 5-year survival based on Dukes' staging for colon cancer has been estimated to be 50% for Duke stage B, 33% for Duke stage C, and 0% for Duke stage D.¹³ Carcinoembryonic antigen (CEA) is usually normal in colorectal SCC. SCC antigen is used as a marker for SCC of other organs and may be used to assess the recurrence in colorectal SCC.^{13,14} Tumor markers were not obtained in our patient. Surgical excision of the tumor is the primary method of therapy whenever feasible. Chemotherapeutic agents used for head and neck SCC (e.g., cisplatin, etoposide, and 5-fluorouracil) can be used for the colorectal SCC.¹¹ The addition of leucovorin and colony stimulating factors (e.g., GM-CSF) has also shown encouraging results.⁷

We believe that the sigmoid lesion in our case was a primary colon malignancy separate from the lesion in the patient's right upper lung lobe, based on the difference in histopatho-

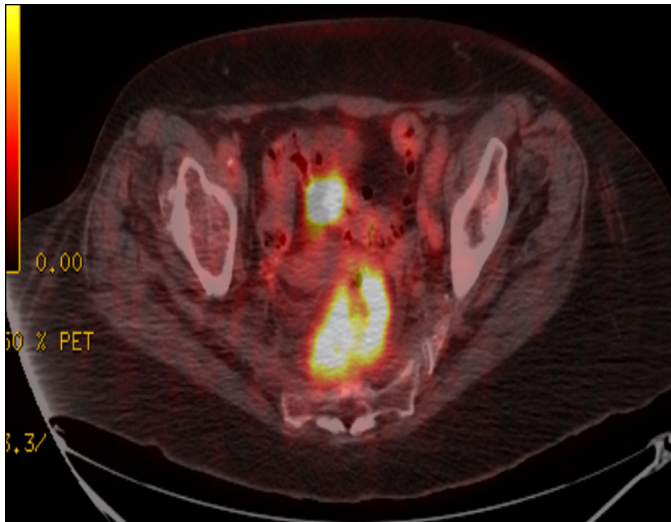


Figure 3. PET/CT to further stage her lung cancer showed a marked increase in uptake of radionuclide deep in the rectosigmoid colonic area.

logical findings. Specific markers (i.e., immunostaining with TTF-1, CDX2, CK7 and CK20, and CEA) would have helped further to distinguish the primary colonic origin of SCC from metastasis of lung carcinoma.¹⁵ Unfortunately, none of these markers were available in our case.

Disclosures

Author contributions: S. Samo and M. Sherid share first authorship of this manuscript. S. Samo designed, wrote, and reviewed the manuscript, performed the literature review, and collected data. M. Sherid is the article guarantor. M. Sherid, K. Liu, L. Kia, and GJ Elliot reviewed the manuscript, performed the literature review, and collected data.

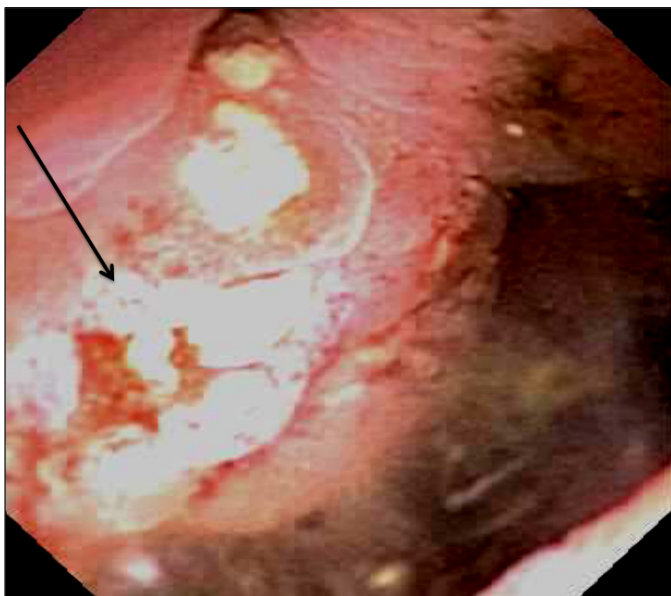


Figure 4. Colonoscopy showing a non-obstructing low sigmoid mass (arrow) 15-20 cm from the anal verge.

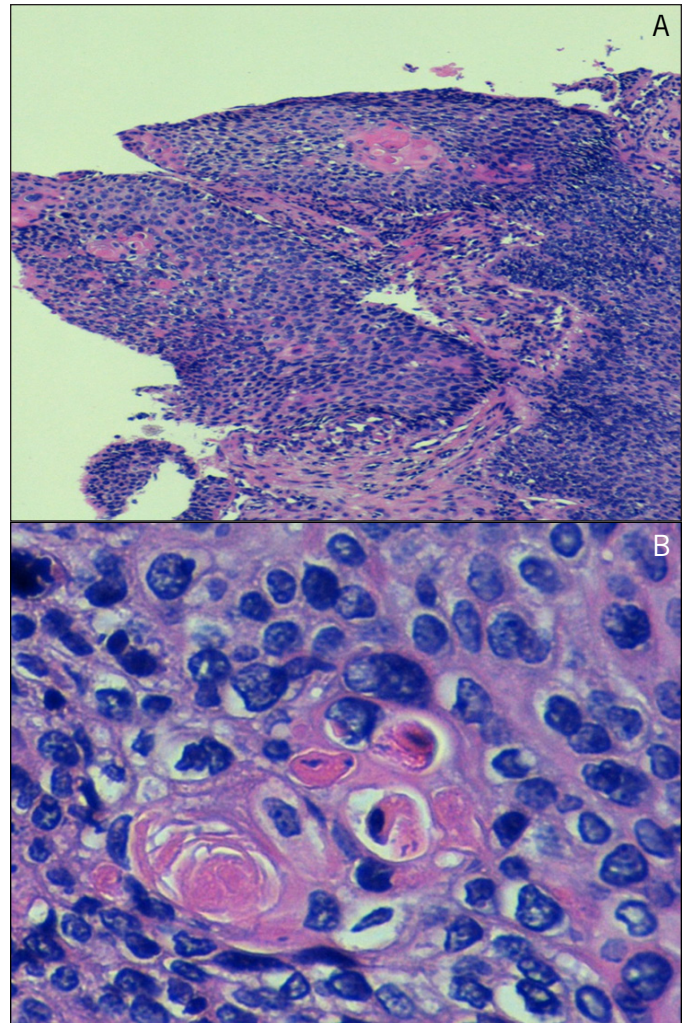


Figure 5. Sigmoid mass biopsy with H&E staining. (A) Low power view showing an invasive pattern of basaloid-type cells with less cytoplasm than mature cells and surrounded by inflamed stroma (200x). (B) Basaloid-type cells with low nucleus to cytoplasm ratio and squamous differentiation within the basaloid cells (400x).

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