CLINICAL VIGNETTE

Metastatic Colon Cancer to the Penis Treated Successfully with PD1 Inhibitor: A Case Report

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A 93-year-old male, had iron deficiency anemia found incidentally on routine perioperative blood work. He had no prior screening for colon cancer. Colonoscopy revealed three separate synchronous cancers. Two lower grade adenocarcinomas, the first at hepatic flexure and a second micro-invasive lesion at the right hepatic flexure arising from a tubulovillous adenoma. Both represented stage I disease at surgery. More worrisome was a stage III (pT4N1cM0) poorly differentiated adenocarcinoma arising from the sigmoid colon. It was 8 cm with invasion through the subserosa to the visceral peritoneum. Twenty-one total lymph nodes were resected and negative, however the there was a resected peritumoral deposit. He had a comorbid post-operative course with fistula formation, recurrent surgery with wound vac, and prolonged post-acute care stay, and was never a candidate for adjuvant therapies.

He was properly staged post operatively and was diligent about surveillance examinations and imaging. He presented about 18 months after his initial surgery with a new mass arising from the glans of the penis associated with mild priapism. Punch biopsy confirmed metastatic adenocarcinoma. Immunohistochemistry pattern was consistent with colonic origin, positive CK20, and CDX2 and negative for PSA and CK7. Restaging imaging revealed no other sites of disease. Given oligometastatic disease, penectomy and concurrent chemoradiotherapy were offered. At his age and goals of care he elected to start with palliative chemotherapy. Initial treatment with FOLFOX led to partial response and was generally well tolerated with resolution of priapism and roughly 50% reduction in mass volume. 5FU/based concurrent radiotherapy was planned, but restaging imaging detected new pulmonary nodules presumed to be metastases and radiation was never administered.

Additional testing revealed loss of nuclear expression of both PMS2 and MLH1 by immunohistochemistry and the patient was started on palliative nivolumab with complete response in both penis and lung with therapy, and has remained without imaging or clinical evidence of disease for 3 years.

Secondary metastasis to the penis is an extremely rare event, with no incidence reported in review of literature. The first reported case of secondary penile malignancy from an adenocarcinoma, of the rectum was defined by Eberth in 1870.[1] Only five cases related to colorectal cancer had been reported by 1951.[2] Subsequently, greater than 500 cases of penile metastases, have been reported, from genitourinary or pelvic primary disease sites of disease. Roughly 12% of those cases from a sigmoid or rectal cancer.[3] The case reports often discuss the rarity of metastasis to penis despite arterial blood flow, and suggest dissemination is likely through shared lymphatics or retrograde venous blood flow.[4]

It appears overall prognosis of penile metastases is poor with most cases reporting survival of less than a year,[5] with rare cases of longer-term survival appearing to be related to penectomy and oligometastatic disease.[6] Despite our patient's advanced age he has done remarkably well despite the prognosis which we generally attribute to PDL1 therapy in the setting of microsatellite instability with treatment based on data from Checkmate 142 trial.[7]

We present this unique case to bring awareness to rare but possible risk of secondary metastases to the penis from colorectal cancers. To our knowledge this is the first published case report of response to PD1 inhibitors in these patients.

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