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Case Report

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Metachronous Adrenal Metastasectomy In Treated Rectal Cancer: Case Report and Literature Review

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Abstract

Adrenal metastases are frequent in cancer patients. However, isolated adrenal lesions in colorectal disease are rare. In this report, we discuss the case of a young patient who was found to have an isolated adrenal lesion few months after primary diagnosis of rectal cancer. A rectal mass biopsy at presentation was consistent with moderately differentiated adenocarcinoma. Pre-operative staging was negative for distant metastases. The patient was treated with concurrent long course neoadjuvant chemoradiotherapy followed by laparoscopic abdomino-peritoneal resection. Final pathology was ypT3N1cM0. Patient refused any further chemotherapy in the adjuvant setting. Patient was kept on follow up and PET scan in September 2019 showed an FDG avid lesion in the left adrenal gland- suspicious for metastases. In January 2022, he underwent laparoscopic left adrenalectomy and histopathology came as metastatic moderate to poorly differentiated adenocarcinoma in keeping with colorectal primary. Post metastasectomy, he received 12 cycles of pseudo adjuvant FOLFOX till 6/09/2022. Since then, patient is on regular follow up and the last PET in October 2022 was negative for recurrence of disease.

Keywords: Rectal Cancer, Adrenalectomy, Chemotherapy, Metastases

Introduction

Adrenal metastases are frequent in cancer patients. However, isolated adrenal lesions in colorectal disease are rare. And the management is challenging in view of its frequency compared to liver or lung lesions where metastasectomy is part of the protocol and included in the guidelines. In this report, we discuss the case of a young patient who was found to have an isolated adrenal lesion few months after primary diagnosis of rectal cancer, and we discuss the management along with literature review.

Case Presentation

A 20 young male patient was diagnosed with rectal adenocarcinoma after presenting with 4 months history of abdominal pain and rectal bleeding. A colonoscopy revealed a circumferential mass in the upper and mid rectum, 10 cm from the anal verge, 3 cm from the anal canal, extending to rectosigmoid junction superiorly, and to mesorectum with thickening of mesorectal fascia laterally. A rectal mass biopsy at presentation was consistent with moderately differentiated adenocarcinoma. Pre-operative staging was negative for distant metastases. Pelvis MRI at presentation showed an anterior infiltration of the seminal vesicles in the midline; the lower most part of the mass was abutting the prostate gland with loss of intervening fat plane. The patient was treated with concurrent long course neoadjuvant chemoradiotherapy followed by laparoscopic abdomino-peritoneal resection with en block removal of bilateral seminal vesicles with partial prostatectomy and creation of end ileostomy. Final pathology revealed minimal residual disease in his primary in form of cluster of malignant cells reaching up to muscularis propria. One out of 15 retrieved lymph nodes was positive for malignancy.

Prostate tissue was free of tumor and final pathology was ypT-3N1cM0. Patient refused any further chemotherapy in the adjuvant setting. Primary tumor molecular profile was as follows: KRAS mutation at exon2, BRAF wild, HER2 negative, PDL-1 Negative, MMRp, PIK3A mutation. The post-op course was complicated with urine leakage and infected wound and required secondary repair of bladder wall fistula which was done on 24/04/2019. Patient was kept on follow up and PET scan in September 2019 showed an FDG avid lesion in the left adrenal gland- suspicious for metastases. In January 2022, he underwent laparoscopic left adrenalectomy and histopathology came as metastatic moderate to poorly differentiated adenocarcinoma in keeping with colorectal primary, Her2 negative, pMMR, CDX2 positive. Post metastasectomy, he received 12 cycles of pseudo adjuvant FOLFOX till 6/09/2022. Full Comprehensive Cancer Panel showed no pathogenic or likely pathogenic sequence variants or copy number changes (del/dup). Since then, patient is on regular follow up and the last PET in October 2022 was negative for recurrence of disease.

Discussion

Although most CRCs occurs in older people above 50, 12% of cases will be diagnosed in individuals younger than age 50 [1]. Around 1 in 23 and 1 in 25 will be diagnosed with CRC in their

lifetime. The 5-year survival of metastatic cases is only around 12% compared to 90% for stage 1 and more than 80% in stage 2 [2]. However, not all stage 4 are the same regarding outcome and prognosis as well as way of treatment. This emphasize the fact that some cases even if metastatic should be treated aggressively in case they might benefit from curative approach.

While primary resection can be helpful in some cases to avoid imminent obstruction, it is of no impact in long term outcome when disease has spread all over the body. On the other hand, when the disease is confined to single or few lesions, an aggressive approach has been shown to be of long-term benefit. This has been clearly shown in studies and guidelines, but most reports included lung and liver lesions. However, isolated single metastases such as adrenal disease have not been well addressed in randomized clinical studies as shown below and the data we have is from cases reports or cases series.

The incidence of adrenal metastases and in particular isolated ones varies among different cancers and their management is not standardized. In CRC, it ranges from 0.15% to 17.4% with a mean percentage of 16%, according to different reports [3].

While the management of isolated or single organ metastases is almost standardized in liver and lung metastases where resection, where feasible, in addition to chemotherapy resulting in improved patient's long-term outcome and survival, it is not the same for adrenals.

Tumors arising in the adrenals are often asymptomatic and mostly detected as part of multiorgan metastases. Symptomatic cases can occur but infrequently. Long-term survival has be achieved in selected patients in whom an aggressive surgical approach may be adopted [4].

The accepted disease-free interval (DFI) for surgical intervention in metachronous adrenal relapse was evaluated in one retrospective review involving 37 patients, 5 only of which had colorectal cancer. The threshold for adrenalectomy was a DFI of more than 6 months to have a survival benefit along with the complete resection [5].

In addition to DFI being related to better outcome, several factors have been evaluated: in a consecutive case series of 30 patients including only 4 colorectal cases, the independent prognosticators of favorable survival were adrenalectomy for potential cure, no previous metastasis surgery ($p = 0.02$), and tumor type, with better prognosis for patients with adrenal metastasis from colorectal carcinoma and RCC and worse prognosis in non-small-cell lung cancer and malignant melanoma [6].

With regards to long term outcome, an article published in 2019 in Surgical Case Reports described 2 different cases that remained in remission after 9 years of long term follow up: the first case had isolated adrenal lesion at diagnosis, which responded to therapy and then was resected followed by adjuvant therapy, and the second case had isolated lung lesion after curing isolated lung metastases with a 1-year interval [7].

Also, one case published in annals of coloproctology described a 63 young male patient who was found to have solitary synchronous metastases left adrenal mass and was operated in curative intent with both removal of primary and metastatic lesion. He got post op adjuvant chemotherapy and remained free of disease on follow up [8].

Another retrospective review conducted on 166 adenocarcinoma cases of different pathologies showed that an aggressive surgical approach resulted in improved OS, however due to the small number of cases and limited number of tumors included, general conclusions could be drawn from that review [9].

Back to our case, after initial curative intent for primary tumor, patient was treated for the metastatic disease by metastasectomy followed by pseudo-adjuvant therapy and maintained on regular follow up and his most recent images in September 2022 were free of disease. The management was like the forementioned cases with surgery and adjuvant therapy, with apparently no role for additional intervention such as long-term chemotherapy or biologic agent as if it was a non-curable metastatic disease.

Conclusion

The reported case among others enlightens the management of isolated metastases in colorectal cancer while the sequence of therapy and the optimal timing are not yet standard, such aggressive approach seems to be of benefit providing patient better disease-free survival and prolonged chemotherapy free interval. Whether it should become standard as in lung and liver lesion requires further studies and follow up

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