CASE REPORT

Squamous Cell Carcinoma of Rectum: How to Treat?

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Abstract Squamous cell carcinoma (SCC) of rectum is an uncommonly seen malignancy. It has been difficult to establish the precise etio-pathogenesis due to paucity of cases. For the same reason, the rigorous treatment protocol has not been defined. The available compendium of knowledge about this pathology is based on isolated case reports and case series. We report a case of SCC of rectum who was treated with chemo-radiotherapy.

Keywords Squamous cell carcinoma of rectum · Chemo-radiotherapy · Colo-rectal malignancy

Introduction

Adenocarcinoma is the predominant colo-rectal malignancy while SCC is rarely encountered. SCC of rectum simulates adenocarcinoma in clinical features and distinction based on clinical or imaging parameters cannot be done. The treatment of this entity is based on isolated case series of individual institutions

and various modalities like surgery alone, surgery followed by radiotherapy, definite chemo-radiotherapy and chemo-radiotherapy followed by surgery have been described. Due to the lack of strict treatment protocols, the prognosis of SCC is relatively poor as compared to adenocarcinoma counterpart.

Case Report

A 57-year-old male presented to us with painless bleeding per rectum of 8 weeks duration. He also reported heaviness in lower abdomen and constipation for last 1 month. He also complained of loss of appetite. No history of any co-morbid illness or substance abuse was present. Past and family history was unremarkable. General physical examination was normal except for a mild degree of pallor. Systemic examination including digital rectal examination was normal. A full colonoscopy was planned after bowel preparation and it revealed a proliferative nodular growth starting at 11 cm from anal verge [Fig. 1a]. Biopsies were performed and histo-pathological examination (HPE) revealed malignant squamous cells with keratin pearl formation suggestive of moderately differentiated SCC [Fig. 2]. A PET-CT scan was performed as per institutional protocol which was suggestive of metabolically active nodular lesion localised to rectum [Fig. 3a]. No evidence of nodal or distant disease was found.

The case was discussed in the institutional tumor board and concomitant chemo-radiotherapy (definite) was planned. External beam radiotherapy with concomitant mitomycin and 5-fluorouracil based chemotherapy was delivered. Patient completed the treatment without any untoward event.

He was followed up 3 months later. He was asymptomatic. PET-CT was repeated and no evidence of metabolic activity was found [Fig. 3b]. A full colonoscopy was performed which was suggestive of mildly edematous rectal mucosa [Fig. 1b].

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Fig. 1 a & b. Colonoscopic images prior to and after chemo-radiotherapy

Biopsies were taken. No evidence of residual malignancy was found on HPE. He was strictly advised to follow up at 3 monthly intervals.

Discussion

The occurrence of SCC in gastro-intestinal tract is highly uncommon except in some locations namely, esophagus and anal canal. Most of the colo-rectal malignancies are adenocarcinomas while SCC of rectum is a rare situation. Till date, around 120 cases have been reported. The estimated incidence of SCC in colon and rectum is 0.25 to 1 per 1000 malignancies [1, 2]. It is mostly seen in the sixth decade of life. The presenting clinical features of SCC of rectum are similar to adenocarcinoma counterpart like rectal bleeding, lower abdominal pain and heaviness, change in bowel habits and loss of weight. Patient usually presents in advanced stage.

The rarity of disease precludes any possibility of studying and establishing the exact etiology and pathogenesis. However, it has been seen that metaplastic transformation of columnar epithelium to squamous histology is the key event in the development of SCC. Similar process has been described in patients suffering from inflammatory bowel diseases, previous radiation exposure to pelvis (ex. carcinoma prostate), colcutaneous fistulas, immunosuppressive state and schistosomiasis [3–6]. Although a clear association between SCC of anal canal and Human Papilloma Virus exists, similar relation with SCC of rectum has not been established. GT Williams et al. suggested criteria for the diagnosis of colorectal SCC in 1979.

They included absence of direct extension of tumor from the anal epithelium, absence of primary squamous cell carcinoma anywhere in the body thus ruling out metastatic disease, absence of fistulous tract to the affected bowel and histological confirmation of the disease [7].

There is no concrete consensus regarding treatment of this disease entity. Previously, surgical resection of the affected part was contemplated as the standard treatment. However, the high recurrence rate after surgery alone compelled the researchers to consider some form of adjuvant therapy or, definite chemo-radiotherapy as the primary treatment and relegating surgery as the salvage treatment if required [8, 9]. Multiple small case series have consistently thrown light on chemo-radiotherapy as the definite treatment for SCC of rectum in the same manner as patients with anal carcinoma. Mitomycin or platinum based regimen along with radiotherapy has been the designated regimen. Clark J et al. reported 7 cases of SCC of rectum that were treated with primary chemo-radiotherapy. Salvage surgery was required in only one patient. A complete clinical response was achieved in 4 out of 6 patients and partial response in 2 patients of SCC of rectum in the series reported by Tronconi MC et al. Yeh J et al. reported a series of 6 cases of SCC of rectum treated with mitomycin or cisplatin based chemo-radiotherapy. Salvage surgery was required in 2 cases. A similar series of cases by Rasheed S et al. reported complete treatment response in 4 out of 6 patients [9–12]. It is worthwhile to note that the chemo-radiotherapy regimen used is similar to that used for SCC of anal canal.

The exact data regarding the overall survival are still not available. The Mayo Clinic tissue registry reported the

Fig. 2 Histo-pathological image of rectal biopsy showing malignant squamous cells with keratin pearl formation

Fig. 3 PET-CT images prior to and after chemo-radiotherapy

combined data for SCC of colon and rectum for all stages. Five year survival rate was 34 % [13]. In light of above reports, the prognosis of these patients seems to be extremely poor.

Learning Points

1. SCC of the rectum is rarely encountered. Diagnostic criteria defined by Williams et al. must be fulfilled before starting the treatment.
2. Definite chemo-radiotherapy seems to be the preferred treatment.
3. Close follow up is mandatory as salvage surgery should be done in residual or recurrent disease.

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