Pan Arab Journal of Oncology

Case Report

Complete remission of squamous cell carcinoma of the rectum treated with capecitabine-based chemo radiotherapy

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Received 6 Jan 2017
Accepted 31 Jan 2017
Available online 12 Mar 2017

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Keywords:
Squamous cell carcinoma, Rectum, Capecitabine, Chemo radiotherapy,

ABSTRACT

Rectal squamous cell carcinoma (SCC) is a rare malignancy with an estimated incidence of 0,1-0,25/1000 colorectal neoplasms.1 Due to its rarity, the underlying pathogenesis, risk factors and natural history of SCC are not well defined yet. Furthermore, there is significant heterogeneity in the treatment regimens utilized, with the optimal management yet to be clarified. We hereby report the case of a 61-year-old female with squamous cell carcinoma who presented a complete pathological response after being treated with capecitabine based chemo radiation therapy .

INTRODUCTION

Rectal squamous cell carcinoma (SCC) is a rare malignancy with an estimated incidence of 0,1-0,25/1000 colorectal neoplasms.[1] Due to its rarity, the underlying pathogenesis, risk factors and natural history of SCC are not well defined yet. Furthermore, there is significant heterogeneity in the treatment regimens utilized, with the optimal management yet to be clarified. We hereby report the case of a 61-year-old female with squamous cell carcinoma who presented a complete pathological response after being treated with capecitabine based chemo radiation therapy.

Case

A 61-year-old previously healthy woman presented to our institution 8 months ago with rectorrhagia and constipation. Physical examination was normal, while rectal exploration demonstrates a mass involving the posterior aspect of the middle rectum. A colonoscopy performed showed a 4cm ulcerated posterior middle rectal tumor at 10 cm from the anus. Biopsy demonstrated an invasive proliferation under the rectal mucosa. It mainly consisted of solid sheets of polyhedral cells in a fibrous dense stroma, with no obvious keratinization. On immunohistochemistry, the tumor cells stained positively with CK5/6 and P63 and the patient was then diagnosed with middle rectal SCC (figure 1,2,3). CT-scan confirmed the local extension of the tumor with no evident distal or nodal metastasis. An endo-rectal ultrasound (ERUS) demonstrated a uT3N0M0 rectal lesion. A pelvic MRI showed a right parietal mass of 4cm with central necrosis. The patient then received neoadjuvant treatment consistent of 28 fractions radiation therapy of 2.5 Gy with concurrent capecitabine. A colonoscopy performed after the neoadjuvant treatment showed a 5mm ulcerated lesion of the middle rectum at 10cm from anus. Pelvic MRI showed response to treatment with remarkable decrease in the size of the tumor involving the right posterolateral rectum at mid rectal level with decrease in the size of the metastatic lymph node. The patient was then admitted for proctectomy with coloanal anastomosis. On gross examination, a 1.9 cm depressed lesion was totally submitted for microscopic examination. On histology, no residual tumor cells were found. The distal rectal margin was free of extension. No lymph nodes metastasis was noted (0/16).

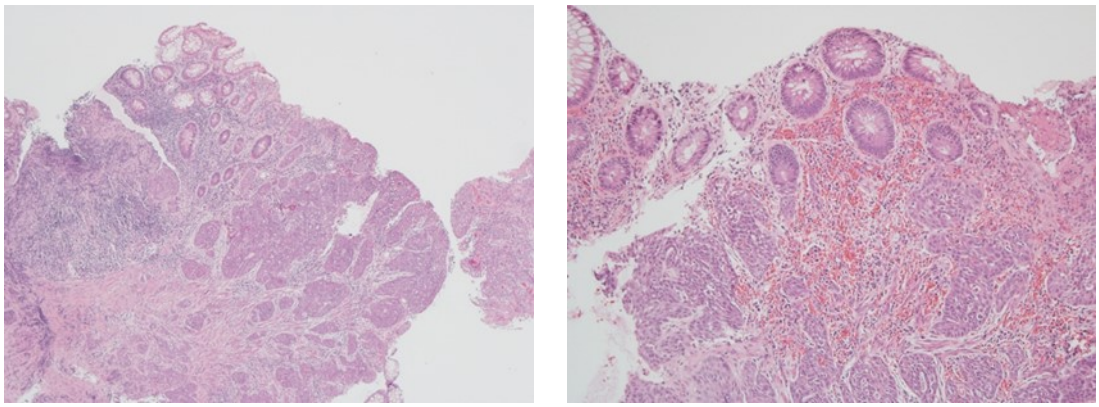

Figure 1: Invasive tumor next to and under the rectal mucosa (x10 and x20).

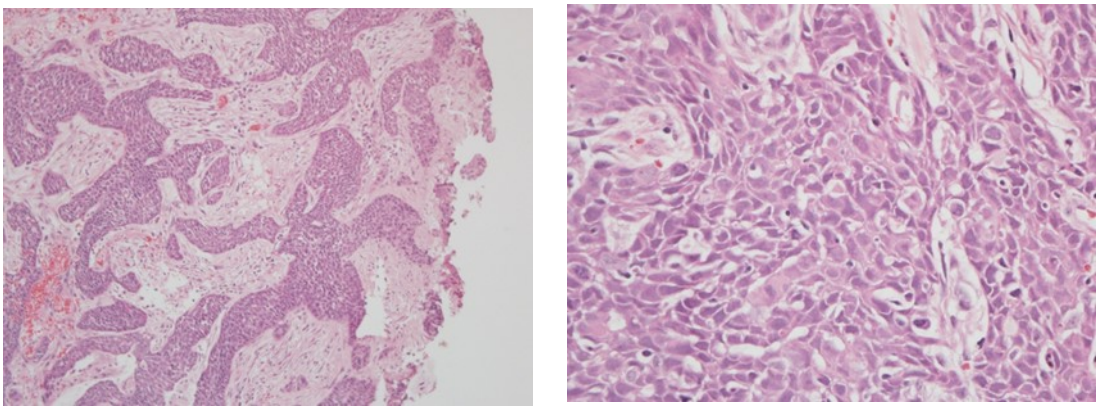

Figure 2: Invasive moderately differentiated squamous cell carcinoma (x20 and x40).

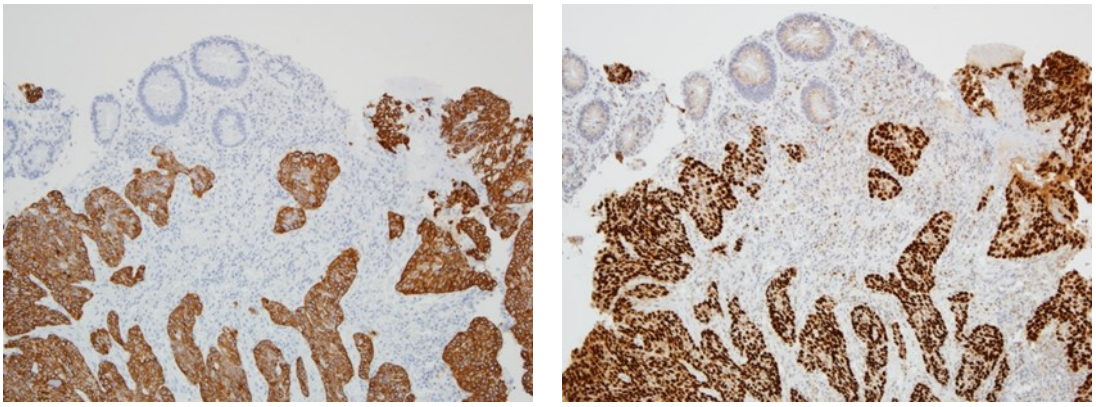

Figure 3: CK5/6 and P63 positive staining on tumor cells, next to the negative rectal mucosa (x20).

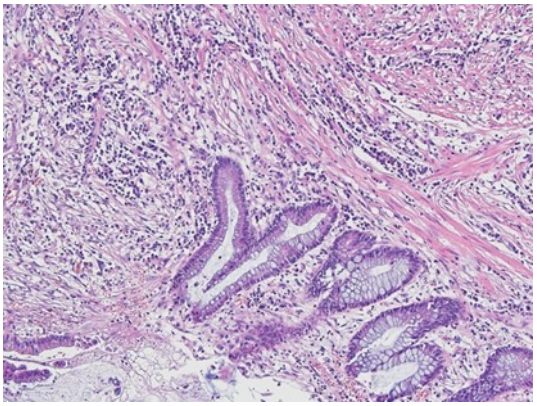

Figure 4: Inflammatory changes in the 1.9 cm ulcerated lesion, with no residual tumoral cell (x20).

DISCUSSION

SCC of the rectum is very rare and presents in a similar fashion to rectal adenocarcinoma. Schmidtmann [2] reported the first case of SCC of the colon in 1919, with Raiford [3]publishing on the first case of rectal SCC in 1933. Until now almost 140 cases of SCC have been reported from all over the world[4]. Loose association between proctitis generally secondary to ulcerative colitis and SCC of the rectum have been identified due to multiple case reports[5]. Other postulated risk factors included an HPV infection and a past history of radiotherapy for other pelvic malignancies. Multiple theories have been postulated to explain the pathogenesis of rectal SCC and the theory of chronic inflammation leading to squamous metaplasia and subsequent carcinoma is one of the most acceptable ones. Patients usually present with rectal bleeding, abdominal pain, change in bowel movements, and weight loss. William et al [6] in 1979, stipulated certain exclusion criteria for a diagnosis of primary rectal SCC that remain relevant nowadays: (1) Evidence of SCC of another organ, ruling out any possible metastasis to the colorectal site; (2) proximal SCC extension of anal or gynecological squamous cell carcinoma extending into the rectum; (3) squamous-lined fistula tract involving the affected region of rectum. Our patient was diagnosed with middle rectal SCC since all the exclusion criteria were fulfilled and a rectal mucosa was identified around the invasive moderately differentiated squamous cell carcinoma that stained positive for CK5/6 and P63.

Accurate staging of rectal SCC is of critical importance, and involves evaluation of the primary tumor, the level of invasion through the rectal wall and assessment for regional and metastatic disease. The treatment of rectal SCC has traditionally involved surgery with neoadjuvant radiotherapy and chemotherapy, however recently, there has been increasing interest in the response of rectal SCC to definitive chemo radiotherapy with very encouraging results. The choice and extent of the operation is dependent upon the tumor location and depth of invasion with removal of involved pelvic structures. Our patient benefited from 3 courses of capecitabine with 28 fractions radiation therapy of 1.8 Gy each which is a known protocol for rectal adenocarcinoma and not for epidermoid cancer.

Tests performed post chemo radiotherapy showed response to treatment with remarkable decrease in the size of the tumor that presented as an ulcerated 5mm lesion of the middle rectum at 10cm from anus. The patient then profited from a total proctectomy with hand sewn coloanal anastomosis.

Literature review showed that the protocol used for epidermoid cancer as definitive chemotherapy is based on mitomycin C and 5FU. Our patient received a capecitabine based chemotherapy, however, no tumor was identified during surgery or at pathological studies for the specimen (figure 4). To date, there is no guidelines for the management of rectal SCC especially with complete response to capecitabine based chemo radiotherapy. To our knowledge this is the first case of an epidermoid rectal cancer that responded to adenocarcinoma based chemotherapy. This fact can lead us to reconsider the effect of capecitabine on epidermoid rectal cancer. We consider that the tumor actually shrinked because of the radiotherapy effect and capecitabine played the role of increasing the sensibility of the radiotherapy.

Moreover, the benefice of surgery on rectal SCC after complete remission can be questioned which matches the treatment modalities for anal SCC.

In conclusion, SCC of the rectum is a rare, distinct entity that could require different treatment approaches. This case report questions the benefice of surgery in rectal SCC and the effect of capecitabine on rectal SCC. In our opinion, surgery could be reserved only for patients that do not have complete remission after chemo radiotherapy.

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