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Case Report

Pathology Section

Carcinoma Rectum with Prostate and Urinary Bladder Metastasis- A Rare Case Report

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ABSTRACT

Tumours of the colon and rectum are one of the most common malignancies worldwide. In India, its incidence is less compared to the developed countries however,recently it has increased from past few decades due to sedentary lifestyle and more consumption of animal fats with less dietary fibre intake. The liver and lungs are most common sites of metastasis from colorectal carcinoma; however, it occasionally metastasised to atypical sites by making diagnosis difficult. Due to the high frequency of colorectal carcinoma, even infrequent metastatic sites are important to diagnose as early as possible. Hereby, authors present a case of 53-year-old male, with history of carcinoma rectum and treated with Abdominoperineal Resection (APR) with permanent colostomy three years back. Three years after the diagnosis of carcinoma rectum, the patient was diagnosed with metastasis of colorectal adenocarcinoma to prostate and urinary bladder which was proven histopathologically. Despite the fact that this condition is uncommon in clinical practice, the possibility of metastatic involvement of prostate and urinary bladder should always be considered when the diagnosis of other primary carcinoma is made.

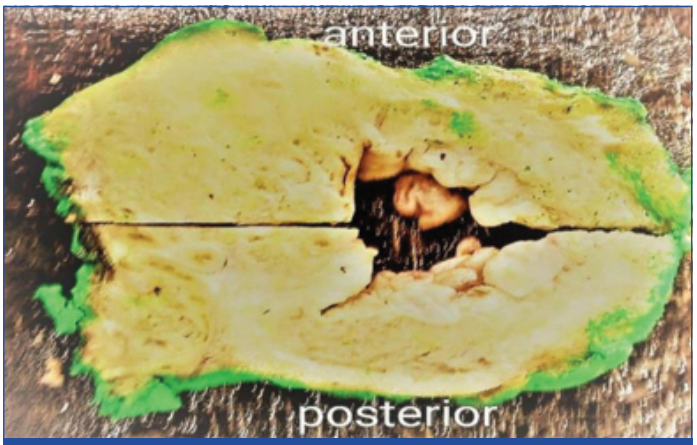
Keywords: Abdominoperineal resection, Adenocarcinoma, Colorectal, Histopathology

CASE REPORT

A 53-year-old male, came to Emergency Department with complaint of intermittent constipation since three months. He was a known case of carcinoma rectum and treated with APR. On physical examination, abdomen was soft, tenderness present over the midline of surgical wound with intact sutures. Colostomy site was intact and functioning. Contrast Enhanced Computed Tomography (CECT) abdomen was done which showed recurrent disease at APR site with infiltration of base of urinary bladder including vesicoureteric junction causing moderate hydroureteronephrosis. Infiltration of prostate and seminal vesicles were seen. Metastatic lymph nodes noted at bilateral internal iliac region. Magnetic Resonance Imagaing (MRI) pelvis showed regular concentric mass like wall thickening involving distal rectum over a length of approximately 4.4 cm measuring 4.6×4.3 cm showing diffuse restriction, the inferior extent of tumour was approximately 2.6 cm from anal verge. There was also significant infiltration into mesorectal fascia. Pelvic extenteration was done and sample was sent to frozen section for urethral margins, which was positive for malignancy.

Grossly, identified bladder prostate with two ureters, urethra and ductus deferens. Cut surface of bladder was distorted and size of cavity decreased measuring 1.5×2 cm. The wall of bladder cavity was thickened throughout in irregular pattern. Cut surface of prostate was yellow white [Table/Fig-1]. Also, received urethral cut margins [Table/Fig-2] with omentum, presacral deposits.

Extensive sampling was done and microscopy showed normal bladder lining epithelium with subepithelium infiltrated by tumour cells arranged in glandular pattern having pleomorphic vesicular nucleus with increased nuclear cytoplasmic ratio and moderate amount of eosinophilic cytoplasm [Table/Fig-3,4]. Tumour cells were also seen infiltrating the lateral, anterior, posterior borders of bladder including prostate, urethra and soft tissue of presacral region. These tumour cells were also seen infiltrating the prostatic tissue [Table/Fig-5]. With all these features final diagnosis was given as features of well-differentiated adenocarcinoma infiltrating the urinary bladder and prostate. Later, patient was on regular follow-up and after two months patient expired due to cardiac arrest.

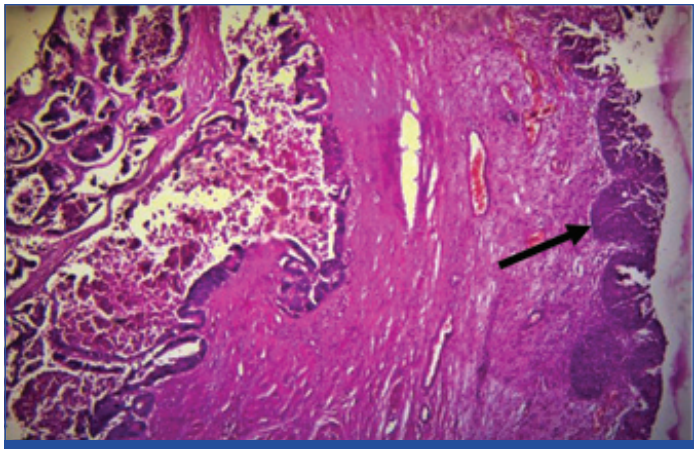


[Table/Fig-1]: Gross photograph of cut surface of bladder and prostate showing irregular cavity and thickening of anterior and posterior wall of bladder with prostate.

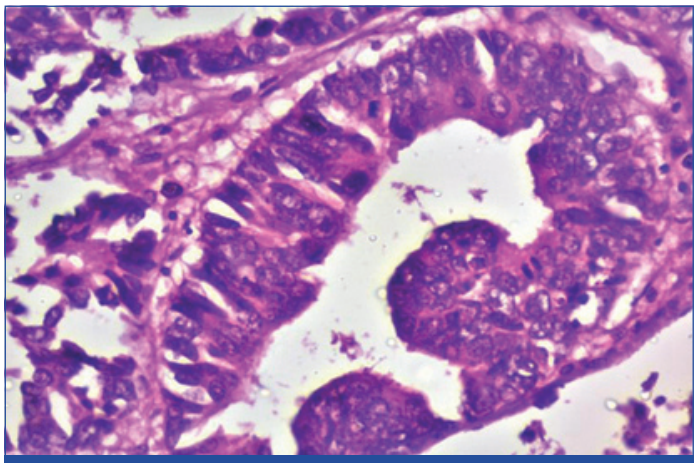
[Table/Fig-2]: Gross picture showing the urethral cut margins (B- Prostatic urethral cut margin & C- distal margin).

DISCUSSION

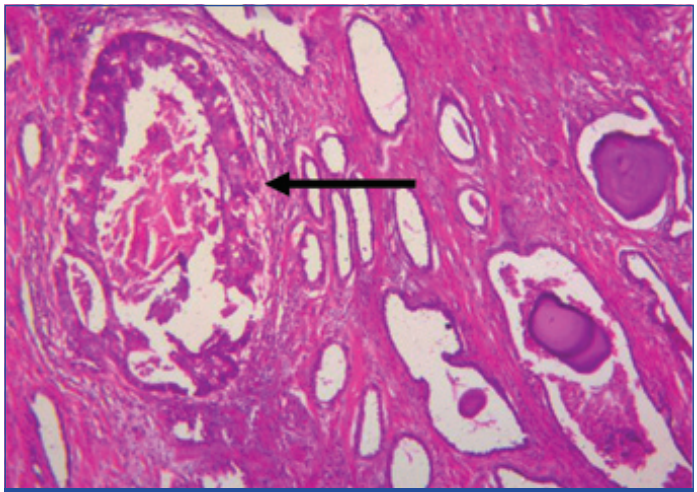
Colorectal cancers are common malignancies in men and third most common malignancy worldwide [1]. They are the second most common cause of death among cancer. They are included among the most frequently encountered malignancy in the industrialised countries and also in western population [2]. Incidence rates of colorectal cancer shows a geographical variation and occurrence is common in developed countries but the mortality is more in developing countries



[Table/Fig-3]: Microscopic image of bladder showing normal urothelium (arrow) with tumour glands infiltrating the bladder wall below the epithelium (H&E stained 4X).



[Table/Fig-4]: Microscopic image showing pleomorphic cells arranged in glandular pattern having vesicular nucleus and moderate amount of cytoplasm (H&E stained 40X).



[Table/Fig-5]: Microscopic image of normal prostatic tissue infiltrated by the tumour cells arranged in glandular pattern having pleomorphic vesicular nucleus (arrow) (H&E stained 4X).

due to limited resources and inadequate health infrastructure [3]. In the recent past, there has been a steady increase in the incidence of colorectal cancers in India due to lifestyle changes. According to GLOBOCON 2020, the incidence of colorectal carcinoma in India is 4.9% [1]. A variety of environmental and genetic factors play a vital role in the development of these tumours.

The most common location is ascending and transverse colon in 40% of cases followed by descending colon and sigmoid colon in 30% of cases and rectum in remaining 30% [4]. The common sites of metastasis are liver, lungs and adrenal glands in decreasing order. However, there are other rare sites for unusual metastasis like prostate, urinary bladder and urethra. In the present study, authors present and discuss a case of this rare condition.

Colorectal cancer present with distant metastasis in 19% of patients at the time of diagnosis. Metastasis to multiple organs from rectal cancer has been reported either as metachronous or synchronous lesions [5]. However, metastasis to unusual sites carries poor prognosis.

Tumour dissemination can occur through lymphatic, haematogenous or contiguous spread and it depends mainly on the location of the primary lesion as well as the metastatic site [6]. But, the metastasis to prostate and urinary bladder at the same time are very rare as in present case.

Prostate metastasis are uncommon, often a manifestation of widespread and multiorgan metastatic disease and typically undiscovered until autopsy. Apart from contiguous spread, common neoplasms metastasize to prostate are leukaemia and non-hodgkin lymphoma [7]. Other tumours include malignant melanoma, lung, pancreas, stomach, pelvis and larynx [8]. The differential diagnosis of colorectal adenocarcinoma including the prostate is bladder adenocarcinoma and prostatic ductal adenocarcinoma [9]. Schips L et al., described metastasis in prostate 10 years after hemicolectomy in an 80-year-old man [10]. The mechanism of dissemination of colorectal cancer cells may happen early in disease onset with cancer cells engaged in prostate where microenvironment is niche, allowing them to be housed and controlling the dormancy period [11]. After a thorough literature, search there are less cases of metastasis to prostate gland from rectal carcinoma.

Adenocarcinoma of bladder is an unusual form accounting to 0.5% to 2% of all primary bladder malignancies. When diagnosis of urinary bladder adenocarcinoma is made, question raises whether it is primary, urachal or metastatic arising from adjacent organ or distant site [12,13]. Klinger ME performed a study on 5000 autopsies and found that incidence of bladder involvement in cases of colonic and rectal carcinoma was only 0.06% (3/5000) [14]. The mechanism for distant metastasis is still unknown. For any tumour to produce metastasis, malignant cells should necessarily have triumphant invasion, embolisation survival in circulation followed by arrest of cells in capillary bed, extravasation and multiplication in organ parenchyma [15]. In spite of extreme literature search, cases with synchronous metastasis to prostate and urinary bladder from rectal carcinoma were not found. Hence, the present case could be the first case with synchronous metastasis.

CONCLUSION(S)

Metastasis to prostate and bladder from the colorectal carcinoma is very rare. It is necessary to know the unusual destinies or unusual metastatic sites of colorectal carcinoma for proper staging and adequate treatment. A new lesion in the prostate or bladder with a known case of rectal carcinoma has to be considered as a metastasis until proven otherwise despite its rare occurrence.

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