Letter to the Editor

Prostate Carcinoma Presenting with Symptoms Mimicking Rectal Cancer

Dear Editor,

Prostate carcinoma (PC) usually presents asymptomatically with raised prostate specific antigen (PSA) or abnormal digital rectal examination (DRE).[1] Rarely, PC infiltrates the rectum and presents with symptoms mimicking rectal cancer (RC).[2] It is difficult to differentiate between the 2 clinically. We hereby report our experience in managing 2 such cases of PC that presented to our colorectal department.

Case Reports

Patient 1: A 72-year-old man presented with a few months of faecal incontinence and change in bowel habits and a circumferential rectal mass felt on DRE. Serum carcinoembryonic antigen (CEA) was 5 and a computed tomography (CT) scan of his abdomen and pelvis showed a large rectal tumour from anal verge to rectosigmoid junction with extensive nodal disease (Fig. 1). Colonoscopy showed a circumferential narrowing of the rectum and the working diagnosis was RC. However, biopsies of the rectal mucosa showed a poorly differentiated infiltrative carcinoma and immunohistochemical (IHC) stains were positive for PSA and alpha-methylacyl coenzyme A racemase (AMACR) suggestive of a prostatic adenocarcinoma. Serum PSA was then ordered and it was raised at 99.95. Magnetic resonance imaging (MRI) of the rectum showed extensive infiltration of the prostate, seminal vesicles, rectum and the whole anal canal (spanning 11 cm) and intervening rectoprostatic spaces (Fig. 2). Bone scan was negative. A laparoscopic diverting sigmoid colostomy was performed in view of faecal incontinence likely from involvement of the anal sphincters from the extensive tumour. The consensus at our department's tumour board meeting for the origin of the tumour was a primary PC. He was referred to the urology department and a prostate biopsy was not performed in view of the raised PSA, positive prostate specific stains on biopsy and MRI findings. He received androgen deprivation (hormonal) and radiation therapy. Three months later, there was a good response with his PSA level dropping to 0.19. However, he passed away 7 months later from pneumonia and posterior circulation stroke.

Patient 2: A 75-year-old man presented with constipation and change in bowel habits and a circumferential, stenosing rectal mass was felt on DRE. Colonoscopy showed a raw ulcerated rectal mucosa suspicious for RC (Fig. 3) and biopsies showed a poorly differentiated carcinoma with features of adenocarcinoma. A CT scan of his abdomen and pelvis was normal except for an ill-defined prostate. The working diagnosis was RC but in view of the CT scan findings and prior clinical experience in Patient 1, serum PSA and prostate specific IHC stains were ordered to exclude

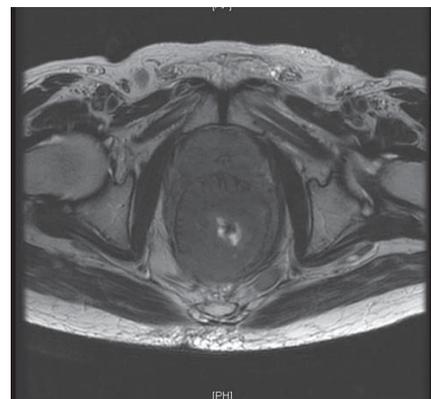Fig. 1. CT scan of Patient 1, showing extensive tumour in rectum.

Fig. 2. T2 axial MRI rectum of Patient 1 showing prostate tumour invading around the walls of rectum and narrowing the lumen.

Fig. 3. Colonoscopy of Patient 2 showing raw ulcerated mucosa suspicious for RC.

PC. PSA was raised at 38.62 and the stains from the biopsies were positive for PSA, AMACR and prostatic specific acid phosphatase (PSAP). Bone scan was positive for multiple foci of osteoblastic lesions. He was referred to the urology department and PC was confirmed on prostate needle biopsy. Hormonal therapy was initiated for his metastatic PC and his colorectal symptoms improved.

Discussion

PC is the third most common cancer among men in Singapore based on Singapore Cancer Registry, Interim Report (2008 to 2012). They usually present asymptomatically with raised PSA or abnormal DRE and with symptoms only when locally advanced or metastatic. Common manifestations of locally advanced PC include urinary symptoms, ureteral obstruction causing renal failure, haematospermia and even impotence. Manifestations of metastatic disease include bone pain, pathologic fractures, anemia, lower extremity edema and less commonly

malignant retroperitoneal fibrosis, paraneoplastic syndromes and disseminated intravascular coagulation.[1] Despite the close proximity of the prostate with the rectum, PC rarely infiltrates the rectum because of Denonvilliers' fascia acting as a barrier. Autopsy studies have found this incidence to be between 1% and 9%.[3]

In the rare instance when PC does invade the rectum, it can present with symptoms such as constipation, abdominal pain, rectal bleeding and altered bowel habits, mimicking RC.[2] PC tends to insinuate between the 2 layers of Denonvilliers' fascia, resulting in circumferential involvement around the rectum and ultimately fascial and mucosal penetration hence a circumferential mass or stricture is often felt on DRE.[4] The first presentation may be to the colorectal department and inappropriate anterior resection and abdomino-perineal resection have been reported in the literature because of the clinical similarities between these two.[5] In our 2 cases, the presenting symptoms, DRE and colonoscopy findings were all suggestive of RC. The CT scan of Patient 1 was even reported as a large rectal tumour. It is difficult to differentiate between PC infiltrating the rectum and RC based on the clinical features alone but several tests would help the clinician in doing so.

Firstly, prostate specific IHC stains are useful to differentiate between the 2. In Patient 1, the pathologist performed prostate specific stains on the biopsies upon seeing a poorly differentiated, infiltrative carcinoma. They were positive for PSA and AMACR (Fig. 4) and this prompted us to order PSA levels and a MRI rectum which supported the diagnosis of PC infiltrating the rectum rather than RC. In Patient 2, the histology of the rectal biopsy showed a poorly differentiated carcinoma with features suggestive of adenocarcinoma. The pathologist did not
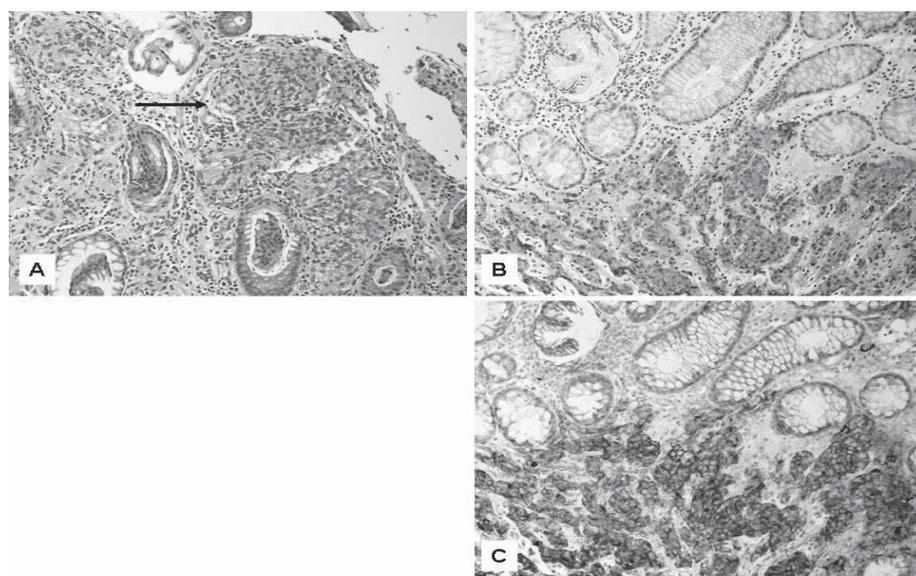

Fig. 4. Immunohistochemical stains of rectal biopsy of Patient 1. (A) Biopsy showing island of tumour cells (arrow) between rectal glands, haematoxylin and eosin stain x200. (B) Tumour cells are positive for prostatic specific antigen, immunoperoxidase stain x200. (C) Tumour cells are positive for racemase, immunoperoxidase stain x200.

perform any prostate specific stains initially but with a CT scan showing ill-defined prostate and previous clinical experience in Patient 1, we requested for prostate specific stains to be added after discussion with the pathologist and they were positive for PSA, AMACR and PSAP. We also then ordered a serum PSA which was raised at 38.62. Subsequently, PC was confirmed on prostate needle biopsy. In a review of the histopathological slides of 20 cases of PC found on colorectal biopsies by Lane et al, it was found that it was difficult to differentiate between the two based on the histology itself. The authors recommended ruling out a prostatic origin when faced with a poorly differentiated carcinoma in a rectal biopsy with the use of prostate specific IHC stains.[6]

Secondly, serum PSA is a simple blood test that can help to differentiate between the two. It is an established way for detecting PC and if raised, a prostate biopsy would then be advised to exclude PC. However, this is not investigation routinely ordered by a colorectal surgeon and is not a mass screening test in Singapore. Both our patients did not have any history of PC, any urinary symptoms, or their PSA tested prior to their presentation to our colorectal department which may have made the diagnosis more apparent. Hence, a high index of suspicion is required to prompt the clinician to order this test when faced with such a clinical scenario. Clinicians should be aware of this clinical entity and its presentation.

Conclusion

In rare instances, PC can infiltrate the rectum and present with symptoms mimicking RC. It is difficult to differentiate between the two based on clinical features alone. A high index of suspicion is required to avoid it being missed, delayed or misdiagnosed especially since the patient may not have any prior history of PC, urinary symptoms or PSA screening tests before. The use of prostate-specific IHC stains in biopsies and serum PSA are useful in differentiating between the two.

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