The Pitfalls of Treating Anorectal Conditions after Radiotherapy for Prostate Cancer

Abstract
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We present a salutary lesson learned from three cases with significant complications that followed anorectal intervention in the presence of radiation proctitis due to prior radiotherapy for adenocarcinoma of the prostate. All three cases had previously undergone external beam radiotherapy for localised prostate cancer, seventy-four Gy in 37 fractions. With the recent increase in detection of prostate cancer in Ireland and increased radiotherapy intervention combined with the massive increase in colonoscopy screening, we believe that these cases highlight an important issue relevant to urologists, radiotherapists, general surgeons and gastroenterologists.

Introduction
We present a salutary lesson learned from three cases with significant complications that followed anorectal intervention in the presence of radiation proctitis due to prior radiotherapy for adenocarcinoma of the prostate. All three cases have had radiotherapy for prostate cancer and the potential for complications in treating these patients.

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Case 1
A 53 year old male twelve months post radiotherapy for localised prostate cancer developed painful haemorrhoids. After apparent routine rubber band ligation there followed a subsequent wound breakdown complicated by colo-cutaneous fistula. This complication was managed by seton stent but the condition did not resolve until two years.

Case 2
A 60 year old with persistent bleeding per rectum post radiotherapy for prostate cancer had radiation proctitis changes at colonoscopy. Biopsy and argon plasma coagulation (APC) was performed. He subsequently presented with urinary infection due to the complication of a procto-rectal fistula. Pelvic exam (cytost-prostatectomy and anterior rectal resection) was the only treatment option. Histopathology demonstrated irradiation changes, fistula, and no residual prostate cancer.

Case 3
A 68 year old with persistent bleeding per rectum post prostatic radiotherapy was diagnosed with radiation proctitis at colonoscopy. He underwent eight sessions of APC and subsequently developed difficulty with faecal evacuation due to the complication of an anal stenosis.

Discussion
External beam irradiation is a common treatment modality for prostatic adenocarcinoma. Historically this approach was more widespread in the United Kingdom. Like there, unlike in the United States, there was no tradition of training or practice of radical prostatectomy. With older radiotherapy technology the complications of pelvic irradiation included moderate to severe radiation induced proctitis, colitis, cryptitis and even dermatitis.

After apparent routine rubber band ligation for painful haemorrhoids, one patient developed a colo-cutaneous fistula. This complication was managed by seton stent but the condition did not resolve until two years.

Modern developments in external beam irradiation for prostate cancer have aimed to increase the dose of local irradiation in order to maximise efficacy by focusing treatment to the target area and reducing the dosage to surrounding tissues. A significant advance has been the introduction of three-dimensional conformal external beam radiotherapy, now standard treatment. In considering a patient for radiotherapy the whole gland is included in treatment field. In suspected or proven locally advanced disease the seminal vesicles are also included. It is important to minimise the dose to surrounding normal tissue to a minimum, with the organs at risk clearly being the rectum and bladder.

In another sphere and in military terminology, the collateral damage to innocent civilians is a significant complication after nuclear attack. Practising urologists and colorectal surgeons performing pelvic surgery for whatever reason after prostate radiotherapy are aware of the severe changes seen after pelvic irradiation which can vary from mild bowel inflammation to a totally fixed and fibrotic pelvis.

These three cases cited highlight the complications that can occur after anorectal intervention in the presence of radiation induced proctitis. These interventions may be either to diagnose or treat radiation colitis (two cases) or haemorrhoids in one case. Only following intervention in the form of biopsy, argon plasma coagulation, or banding of haemorrhoids did the patients develop significant complications. Argon plasma coagulation is a standard treatment modality to control bowel bleeding per rectum and fistula is only rarely reported. APC may be reserved for the more severe cases of proctitis and bleeding but paradoxically these are the cases with most complications. We would caution against the use of excessive coagulation therapy in the presence of irradiated mucosa. Likewise, mucosal biopsy also likely contributed to complications in these cases. Mucosal biopsies are by definition superficial, but in the presence of radiation proctitis, even superficial biopsy may pose a risk. We would question whether biopsy is always required when the diagnosis of radiation proctitis is virtually certain from clinical and endoscopic features.

The anorectal complications seen in these cases were not related to prostate cancer per se. All three had radiotherapy with curative intent, one of whom had temporary adjuvant hormonal therapy in addition. The two cases with fistula and stenosis respectively remain in tumour remission at two years as evidenced by PSA response. The unfortunate case with persistent infection and fistula formation was also in continuous ongoing PSA response and pathology out-ruling residual prostate cancer. With widespread PSA testing and increased awareness of prostate cancer we are likely to see an increase in prostate cancer detection and treatment with radiation therapy. In addition, the new emphasis on colo-scopical screening by colonoscopy is leading to increased detection of many anorectal conditions. Not infrequently, patients who have previously undergone radiotherapy for prostate cancer may present with faecal symptoms. In summary, all those diagnosing and treating colonic conditions should be mindful of the increased prevalence of patients who have had radiotherapy for prostate cancer and the potential for complications in treating these patients.

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