

Fistulation into the Pubic Symphysis after Treatment of Prostate Cancer: An Important and Surgically Correctable Complication

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Purpose: Chronic pubic pain after the treatment of prostate cancer is often attributed to osteitis pubis. We have become aware of another complication, namely fistulation into the pubic symphysis, which is more serious and more common than previously thought.

Materials and Methods: A total of 16 patients were treated for urosymphyseal fistulas after the treatment of prostate cancer between January 2011 and April 2014. Clinical presentation was characterized by chronic, debilitating pubic/pelvic/groin pain in all patients. Diagnosis was confirmed by magnetic resonance imaging. Conservative management was successful in only 1 patient. The remaining patients were treated surgically with excision of the fistulous track and involved symphyseal bone and omentoplasty, followed by reconstruction when feasible.

Results: All 16 patients had had radiotherapy as primary treatment (8) or after prostatectomy (8). There were 5 patients (31.3%) who underwent various combinations of brachytherapy, external beam radiotherapy and cryotherapy. Bladder neck contractures developed in 13 patients (81.3%), whose treatment (endoscopic or open reconstruction) resulted in urinary leak leading to urosymphyseal fistulas. Reconstruction was possible in 7 of 15 patients (46.7%) with salvage radical prostatectomy and substitution/augmentation cystoplasty. The other 8 patients (53.3%) underwent cystectomy and ileal conduit diversion. All patients experienced resolution of symptoms, most significantly the almost immediate resolution of pain.

Conclusions: A high index of suspicion must be maintained in irradiated patients presenting with symptoms suggestive of urosymphyseal fistulas, especially after having undergone treatment of bladder neck contractures or prostatic urethral stenoses. Although extensive, surgery for urosymphyseal fistulas, with a high risk of morbidity and mortality and a protracted recovery, leads to immediate and dramatic improvement in symptoms.

Key Words: fistula, pubic symphysis, radiotherapy, prostatic neoplasms, complications

CHRONIC pubic pain is a well-recognized complication of the surgical and nonsurgical treatment of prostate cancer. This is often attributed to osteitis pubis,¹ osteonecrosis² or osteomyelitis³ of the pubis. All 3

conditions have more or less similar clinical presentations characterized by pubic pain limiting mobility and significantly affecting quality of life.⁴ This pain may be associated with fever and elevated inflammatory

Abbreviations and Acronyms

BNC = bladder neck contracture
EBRT = external beam radiotherapy
HIFU = high intensity focused ultrasound
MRI = magnetic resonance imaging
RP = radical prostatectomy
TURP = transurethral prostate resection
UTI = urinary tract infection
VUA = vesicourethral anastomosis

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markers. These cases are commonly investigated using plain radiographs, bone scan and bone densitometry, and treated symptomatically with various combinations of analgesics, anti-inflammatory medications, antibiotics and physiotherapy.

We have become aware of another cause of chronic pubic pain after surgery, irradiation or ablative therapies for prostate cancer, where there is direct fistulation from the urinary tract into the pubic symphysis, which may be independent of fistulation into the rectum or perineum. This is more serious than osteitis, osteonecrosis or osteomyelitis, since in addition to debilitating pain it may also be associated with cavitation and chronic pelvic sepsis. With the increasing use of multimodal cancer treatment, the number of urosymphyseal fistulas is growing steadily.

We present a series of patients in whom prostate cancer treatment was complicated by the development of urinary fistulation into the pubic symphysis, and we identify potential risk factors associated with development of this complication. Diagnosis, surgical treatment options and outcomes are discussed.

PATIENTS AND METHODS

Our prospective outcomes database was reviewed to identify patients with urosymphyseal fistulas in a single unit. All had previously undergone treatment for prostate cancer. Diagnosis was based on clinical features and confirmed radiologically by MRI showing urine tracking anteriorly from the urinary tract (usually the bladder neck/vesicourethral anastomosis after RP or from the prostatic remnant after irradiation or ablation therapy) into the pubic symphysis.

Cases were reviewed retrospectively. Data were retrieved from outpatient clinic records, inpatient charts, and operation and histopathology reports. Details regarding the original prostate cancer treatment and resulting complications requiring any form of surgical/endoscopic intervention were collected. Demographic data, clinical presentation, radiological assessment and

details regarding treatment were documented. Treatment outcomes as well as morbidity and mortality were evaluated.

Surgical reconstruction was performed via an abdominoperineal approach. The fistulous track was exposed and excised, and all associated cavities opened, drained and curetted. The involved pubic symphyseal bone was excised using a Capener gouge back to healthy tissue (fig. 1, A). Those with a prostate in situ were treated with salvage RP and redo VUA. The omentum was mobilized off the greater curvature of the stomach on its right gastroepiploic pedicle and deployed to the pelvis to obliterate all cavities, wrap anastomoses and cover bony surfaces. When reconstruction was not possible, cystectomy/cystoprostatectomy (fig. 1, B) and ileal conduit diversion were performed after excision of the fistula and symphysis and omentoplasty (fig. 1, C). The factors determining whether reconstruction was possible (and the choice of reconstructive procedure), or whether this was better avoided in favor of cystectomy and urinary diversion, are summarized in the Appendix.

RESULTS

A total of 16 patients were treated for urosymphyseal fistulas after prostate cancer treatment between January 2011 and April 2014 (see table). Mean patient age was 71.5 years. Median Gleason score of initial cancer was 7 (range 7 to 9). All patients had received radiotherapy (EBRT or brachytherapy) as primary treatment (8) or after prostatectomy (8). There were 3 patients who received salvage cryotherapy after radiotherapy. Of the 16 patients 5 (31.3%) had been treated with various combinations of brachytherapy, EBRT and cryotherapy.

Patients presented at a mean of 94.2 months (range 12 to 216) after initial cancer treatment. The characteristic presenting feature of all patients was chronic, severe, debilitating pain in the suprapubic region also involving the perineum, groin and deep pelvis, depending on the extent of fistulation. This pain was associated with limited mobility in all, and

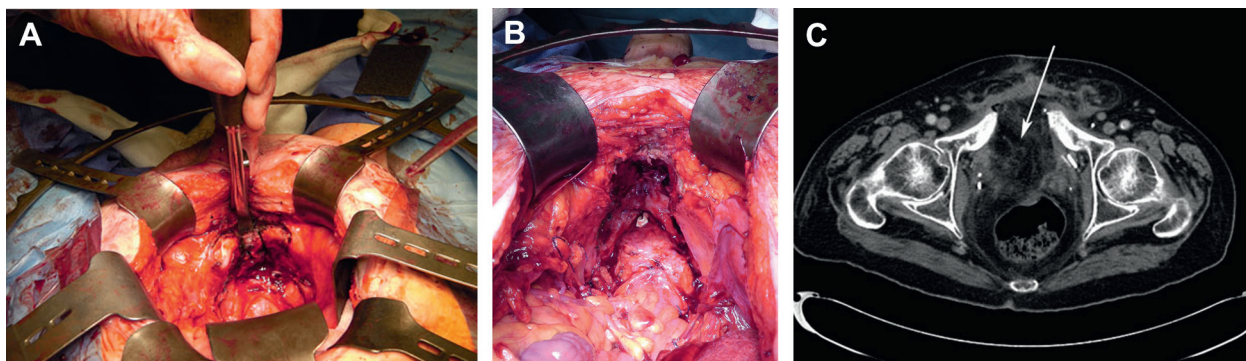


Figure 1. Operative photograph showing wedge of symphysis pubis being resected (A). Appearance after cystoprostatectomy and pubic symphysiectomy (B). Note defect in rectum (arrow), which was later closed before (C) omental interposition.

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