Two Hit Hypothesis: An Unusual Complication Following Supra-Pubic Catheter Insertion

Abstract:

GJ Nason, AT Looney, ME Kelly, BB McGuire, DW Mulvin
Department of Urology, St Vincent's University Hospital, Elm Park, Dublin 4

Abstract

Osteomyelitis is an inflammation of the bone caused by an infection. Though bone is normally resistant to bacterial infection, events including trauma, presence of foreign bodies including prosthesis can act as a nidus for infection. Osteomyelitis is a rare but recognised complication of radiotherapy. Osteomyelitis of the pubis has scarcely been reported as a complication following urological procedures- prostatectomy, sling surgery and catheterisation. We report a rare complication of a gentleman post radiotherapy presenting with delayed osteomyelitis of the pubis following supra-pubic catheterisation.

Case Report

A 66 year old man presented to clinic for routine follow up regarding prostate cancer. He was diagnosed with Gleason 4+3 adenocarcinoma of the prostate six years ago, his initial PSA was 12.0 ng/mL. He underwent an open radical retropubic prostatectomy. His PSA nadir was <0.03ng/mL. Following biochemical recurrence he underwent external beam radiotherapy. He developed dense urethral strictures and was intermittently catheterising after multiple dilatations. A supra-pubic catheter was inserted. He started complaining of severe supra-pubic pain and decreasing mobility within a few weeks of supra-pubic catheterisation. His abdominal and neurological examinations were normal. His PSA was 0.03 ng/mL. A diagnosis of bone metastasis was presumed. Radionuclide whole body bone scan showed no evidence of bone metastases. Computerised Tomography (CT) brain showed no evidence of intracranial mass. MRI pelvis revealed high signal changes around the pubic rami and pubic symphysis with surrounding inflammatory soft tissue changes suggestive of osteomyelitis. He subsequently had CT guided aspiration of the inflammatory collection (Figure 1). Cultures confirmed Multi-Resistant Staphylococcus Aureus and Enterococcus Faecalis and was commenced on a four week course of intra-venous Vancomycin. He was subsequently follow-up at out-patients at a 6-week interval with significant resolution of symptoms.

Discussion

Our case demonstrates the unusual complication of osteomyelitis of the pubis following pelvic surgery and salvage radiotherapy. The presentation however was mitigated following supra-pubic catheterisation. Osteomyelitis of the pubis has numerous of risk factors, of which our patient had a previous radical prostatectomy and pelvic radiotherapy. Despite these, his symptoms only developed after supra-pubic catheterisation. Furthermore a CT Abdomen/Pelvis prior to catheter insertion showed no evidence of infection. Osteomyelitis is a recognised rare complication of radiotherapy in many surgical specialties. The timing of onset is variable. Patients with osteomyelitis of the pubis usually present with pelvic pain and poor mobility due to pubic symphysis destruction.

Osteomyelitis of the pubis has previously been described in urological literature. Stern et al reported a case of osteomyelitis of the pubis in a 40 year old woman ensuing from a chronic indwelling urinary catheter requiring open debridement. They hypothesise that catheter erosions allow direct spread of vaginal flora into the symphysis. Vaidyanathan et al., report the case of osteomyelitis of the pubis in a 20 year old tetraplegic woman postulated to be secondary to chronic leakage along the supra-pubic track. Moore et al., in a case quite similar to ours, report osteomyelitis of the pubis in a 57 year old man, two years post robotic assisted laparoscopic prostatectomy and salvage radiotherapy presenting with recurrent urinary tract infections and intermittent pelvic pain. They postulated that pelvic radiotherapy following pelvic surgery was the causative etiology. As was the case with our patient, conventional imaging was difficult to interpret unless there is significant periosteal thickening, elevation of signal on T2 with loss of the normal pubic joint space. Magnetic Resonance Imaging (MRI) is a very sensitive imaging modality in detecting osteomyelitis, usually demonstrating high signal abnormalities in the pubic rami consistent with marrow oedema. Bone biopsy with histopathological examination and culture is the gold standard for the microbiological diagnosis of osteomyelitis. Osteitis pubis and osteomyelitis of the pubis are recognised complications of sling insertion for the treatment of urinary incontinence whether inserted trans-abdominal or transvaginal.

We report a rare complication that to the best of our knowledge is only the third case of osteomyelitis of the pubis following pelvic surgery and salvage radiotherapy. This case report serves to highlight the significant consideration and informed consent is necessary prior to supra-pubic catheterisation especially in patients with previous pelvic surgery and radiation. The aetiology of osteomyelitis in this case is likely due to a number of mitigating factors- pelvic surgery, pelvic radiotherapy and subsequent supra-pubic catheterisation.

Correspondence: GJ Nason
St Vincent's University Hospital, Elm Park, Dublin 4
Email: nasonog@cd.ie

References