Surgical access for radical retropubic prostatectomy in the phenotypically narrow and steep black male’s pelvis is exacerbated by a posterior pubic symphysis protuberance: A case report

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ABSTRACT

INTRODUCTION: Men of African descent are known to have a narrower and steeper pelvis that is associated with a higher risk of positive surgical margins after radical retropubic prostatectomy. We describe the additional challenge posed when a very prominent posterior pubic symphysis protuberance is present in the pelvis of a Black man during this operation and how to overcome it.

PRESENTATION OF CASE: A 61-year old man of African descent with organ-confined prostate cancer underwent a radical retropubic prostatectomy. He had a very prominent posterior pubic symphysis protuberance on a background of a phenotypically narrow and steep pelvis, precluding adequate surgical access to the prostate. Using a combination of resection of the protuberance, modification of patient position and lighting, coordinated retraction and long instruments, surgical access was achieved.

DISCUSSION: The coexistence of a very prominent posterior pubic symphysis protuberance in a Black male with a narrow and steep pelvis poses a surgical challenge in accessing the prostate, particularly the apex. This can be overcome by surgical resection of the protuberance, patient waist extension by operating table flexion, use of head lamps or intracavitary lighting, adequate retraction and use of appropriately long instruments.

CONCLUSION: Surgical access to the prostate, particularly its apex, when performing radical retropubic prostatectomy in a Black man with a very prominent posterior pubic symphysis protuberance may be achieved by a combination of manoeuvres and adjuncts described herein.

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1. Introduction

It is known that Black men have a narrower and steeper pelvis compared to white men and this variation has been shown to independently increase the risk of positive surgical margins during radical retropubic prostatectomy (RRP) for prostate cancer (PCa) due to the difficulty of apical prostate dissection [1]. Men of all races on occasions may also have a marked protuberance from the posterior aspect of the pubic symphysis that is variably composed of cartilage or bone and it too has been described as increasing the difficulty of radical prostatectomy [2,3].

When a very prominent posterior pubic symphysis protuberance is present in a man of African descent with a phenotypically narrow and steep pelvis, we propose that it makes safe apical dissection via the retropubic approach virtually impossible due to inability to directly visualize the deeply located apex of the prostate. The situation is exacerbated when the prostate is large and/or the patient is overweight or obese. A combination of modification of patient position with sufficient retroflexion of the waist, additional light emitting diode (LED) head or intracavitary lights, resection of the posterior pubic symphysis protuberance, adequate retraction and appropriately long instruments is recommended to safely perform the procedure and maximize good oncologic control and functional outcomes.

2. Case presentation

A 61-year-old Jamaican man of African descent, a farmer from a rural parish, was referred to the urologist with a diagnosis of a Gleason 6 adenocarcinoma of the prostate already having been made on transrectal ultrasound-guided biopsy. He denied having any co-morbid illnesses or constitutional symptoms and was not taking any medication. He had no lower urinary tract symptoms (LUTS) and denied a family history of PCa. Pre-biopsy prostate-specific antigen (PSA) was 13 ng/ml. Physical examination revealed...
a well-looking, slightly overweight, middle-aged man who looked his stated age. Digital rectal examination (DRE) revealed a clinically benign prostate (cT1c). Treatment options were discussed with the patient and he chose to have a radical retropubic prostatectomy.

At surgery a sub-umbilical 5 cm midline incision beginning at the symphysis pubis and extending superiorly was made with the patient in the supine position and with the bed slightly broken at the level of the patient’s iliac crest. The prostate was approached extraperitoneally in the cave of Retzius but it could not be visualized in its entirety due to a very prominent posterior pubic symphyseal protuberance that projected upwards and posteriorly preventing direct observation of the lower half of the prostate (Fig. 1). Additionally, the patient’s pelvis was characteristically narrow and deep. The posterior pubic symphyseal protuberance was resected with the cutting electrocautery as recommended and described by Kim et al. [3] and following this the prostate was more readily visualized (Fig. 2) but the region of the apical prostate was still difficult to access due to the configuration of the pelvis.

To facilitate visualization of the apical prostate the patient’s position was modified by further flexion of the operating table resulting in additional waist extension (Fig. 3) and additional LED head lights were used to visualize the depths of the pelvis. The urinary bladder and peritoneal contents were retracted superiorly using a Balfour retractor with middle blade centered on the in-situ catheter balloon inflated to 30 ml, thereby exerting upward traction on the prostate making taut its anterior adventitial coverings. Finally, with the use of instruments of appropriate length, the apical prostate was accessible, particularly after control and division of the deep dorsal venous plexus, which was now easier to do with the improved visualization after the above-mentioned manoeuvres.

The patient made an uneventful recovery and was discharged home on day three postoperatively with the catheter in-situ, to return in two weeks for catheter removal. He returned two weeks later and had the catheter removed and has been completely continent of urine. At 4 months post-surgery he is having penile tumescence but not full rigidity as yet. He is on Tadalafil 5 mg once daily to encourage early return of erections. Pathological assessment demonstrated a pT2b (organ confined) tumour with negative surgical margins. Postoperative PSA is 0 ng/ml.

3. Discussion

In Black men in whom the pelvic cavity is characteristically narrow and steep, surgical access to the prostate via the retropubic approach is sometimes challenging. This is especially so for the prostatic apex and is exacerbated when the prostate is large
and/or the patient is overweight or obese. In this situation there is a documented compromise of oncologic outcome as indicated by an increased risk of positive surgical margins [1].

If, in addition, a posterior pubic symphyseal protuberance is present, as was the case here, surgical access is further compromised and then it becomes necessary not only to institute the several manoeuvres to aid access in the pelvis of the man of African descent, such as supplemental lighting via head or intracavitary lights, adequate retraction, usually achieved inexpensively with a regular Balfour abdominal retractor with a malleable or curved middle blade tautly retracting superiorly the urinary bladder with the contained balloon catheter inflated with 30 ml of water, modifying the supine position by varying degrees of waist extension accomplished by ‘breaking’ the operating table and using instruments of appropriate length; but, specifically addressing the posterior pubic symphyseal protuberance is necessary.

Resection of the posterior pubic symphyseal protuberance is necessary to achieve adequate visualization and surgical access and is accomplished simply by using electrocautery on cut settings when the protuberance is cartilaginous in nature [3,4], but on other occasions it may be necessary to chisel bone, with adequate protection of the soft tissues, if the protuberance is predominantly bony and osteophytic in nature as described by Marshall et al. [2]. It would be dangerous to proceed without first having good access to the prostate and in particular the prostatic apex as doing so increases the risk of positive surgical margins and may compromise functional outcomes.

Conflicts of interest

The authors have no conflicts of interest to declare.

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Ethical approval

Ethics approval was not sought for this case report.

Consent

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Author contribution

William Aiken conceptualised the paper and wrote the initial draft.

Warren Chin helped to write the paper and contributed useful insights.

Both authors have read and approved the final manuscript.

Guarantor

William Aiken.

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