

Seperation of dorsal vein complex from the urethra by blunt finger dissection during radical retropubic prostatectomy

Radikal retropubik prostatektomi'de dorsal ven kompleksinin üretradan parmakla künt diseksiyon ile ayrılması

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ABSTRACT

We present our initial experience on the isolation of dorsal vein complex by blunt finger dissection in 26 patients with localised prostate cancer who underwent open retropubic radical prostatectomy. Loss of blood was between 300 and 500 mL (mean 350 mL). Two of 26 patients (7.6%) required blood transfusion. There was no positive surgical margin at prostatic apex in the patients. Twenty four of our patients (92.4%) were continent on the 3rd month. Control of dorsal vein complex is very important to decrease blood loss and to improve intraoperative exposure of retropubic area in order to get negative margin of prostatic apex and to provide the urethra long enough for a nice urethrovesical anastomosis. According to our initial experience, this technique seems to provide these aims.

Keywords: Dorsal vein control; prostate cancer; radical prostatectomy.

ÖZET

Lokalize prostat kanseri nedeniyle açık radikal retropubik prostatektomi yapılmış 26 hastada dorsal ven kompleksinin künt parmak diseksiyonu ile üretradan ayrılması ile ilgili ilk deneyimlerimizi sunuyoruz. Kan kaybı 300 mL ile 500 mL arasında idi (ortalama 350 mL). İki (%7,6) hastaya kan transfüzyonu yapıldı. Hastalarda prostatik apekte pozitif cerrahi sınır saptanmadı. Üçüncü ay kontrolünde 24 hasta (%92,4) kontinan idi. Dorsal ven kompleksinin kontrolü; kan kaybını azaltmak, operasyon esnasında prostatik apekte negatif cerrahi sınır sağlamak amacı ile retropubik alanı daha iyi ortaya koymak ve düzgün bir üretrovezikal anastomoz için yeterli uzunlukta üretra bırakmak açısından oldukça önemlidir. İlk tecrübelerimize göre, bu tekniğin bahsedilen amaçları sağladığı görülmektedir.

Anahtar kelimeler: Dorsal ven kontrolü; prostat kanseri; radikal prostatektomi.

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Introduction

In the last 20 years, with the widespread use of prostate specific antigen (PSA) as a screening tool due to increased awareness of the public for prostate cancer (PCa), prostatic biopsies under the guidance of transrectal ultrasound are performed very often. As a result of this, prostate cancer diagnosis increased. After diagnosis of PCa, most of the patients undergo radical prostatectomy. A radical prostatectomy can be done in different ways. Even though radical prostatectomy can be laparoscopically or robot assisted done in recent years, open retropubic radical prostatectomy (RRP) is still a valid option for these patients. Control of dorsal venous complex is one of the most important

points during RRP as bleeding from dorsal venous complex may be very dangerous. There are different methods described to control dorsal venous complex with or without cutting puboprostatic ligaments.^[1] In addition to these methods, Namiki et al^[2] described a new technique for control of dorsal vein complex in 2009. We aimed to present our initial experience in 26 patients with localised prostate cancer who underwent radical retropubic prostatectomy using this technique.

Description of the surgical technique

After placing the patients on supine position, midline vertical incision below umbilicus was done. Endopelvic fascia was opened bilaterally after removing the fat tissues on it

and levator muscle was separated from the prostate by finger or small sponge stick. Puboprostatic ligaments were not cut. Urethra with catheter was felt in the prostatic apex by tip of the index finger. Urethra and dorsal vein complex are covered by lateral pelvic fascia.^[3] By blunt finger dissection from both sides, lateral pelvic fascia is interrupted in both sides and urethra and dorsal vein complex are separated from each other. Index finder can be passed easily underneath the dorsal vein complex (Figure 1). A long right angle clamp is passed under dorsal vein complex and an atraumatic, 2/0 vicryl with 26 mm needle is used to control dorsal vein complex (Figure 2). Free side of the vicryl is grasped by the right angle clamp passed below dorsal vein complex. Dorsal vein complex is tied and then sutured with the same suture to avoid the slippage of free tie. After putting a back bleeding suture on middle part of the prostate, dorsal vein complex is sharply cut under guidance of a long right angle clamp passed below dorsal vein complex (Figure 3). If there is a bleeding, dorsal vein complex is oversewn. After division of dorsal vein complex, periurethral tissues are dissected from the urethra by a blunt tip scissor and a long right angle clamp is passed underneath the urethra. After this manoeuvre, prostatic apex and uretra are clearly visualised. Prostatic urethra is half cut and urethral catheter is seen and taken out clamping from the urethra (Figure 4). Catheter balloon is not deflated. External part of the urethral catheter is cut and proximal part of the catheter is withdrawn from opened part of the urethra. After cutting posterior urethra, radical prostatectomy is completed in standart way. Bladder neck is prepared according to urethral calibration for having a good urethro-vesical coaptation. Vesicourethral anastomosis with 2/0 vicryl is performed by 5 sutures in positions on 12, 2, 5, 7 and 10. After putting a drain behind symphysis pubis, wound was closed. Drain was postoperatively left in place up to drainage less than 50 mL. Then drain was removed and the patients were discharged. Urethral catheter was left in place for 3 weeks and before catheter removal, cystography was not done to show any leakage from the anastomosis.

Discussion

Bleeding is the most important peroperative complication in RRP. The aims of RRP are to get negative surgical margins with complete tumour removal, to have urinary continence with a nice

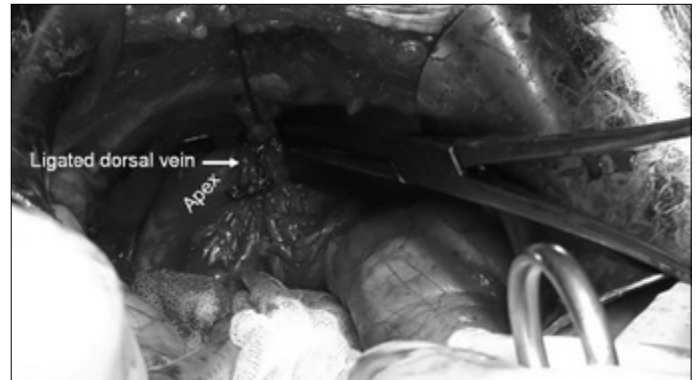


Figure 2. Dividing of the dorsal vein.

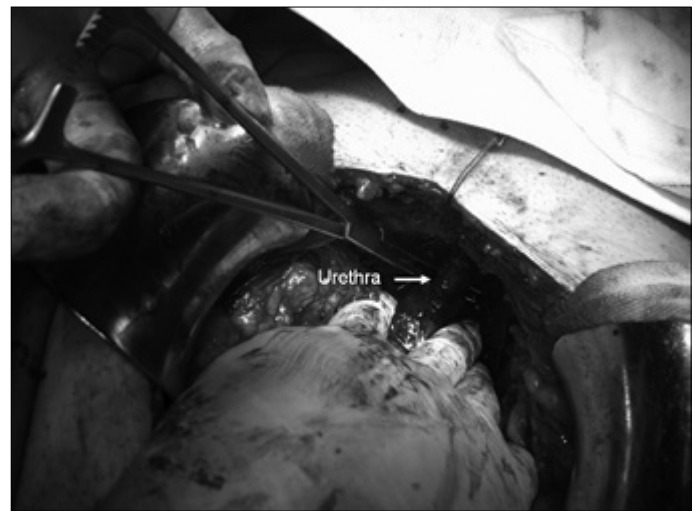


Figure 3. A clamp could be passed behind the urethra.

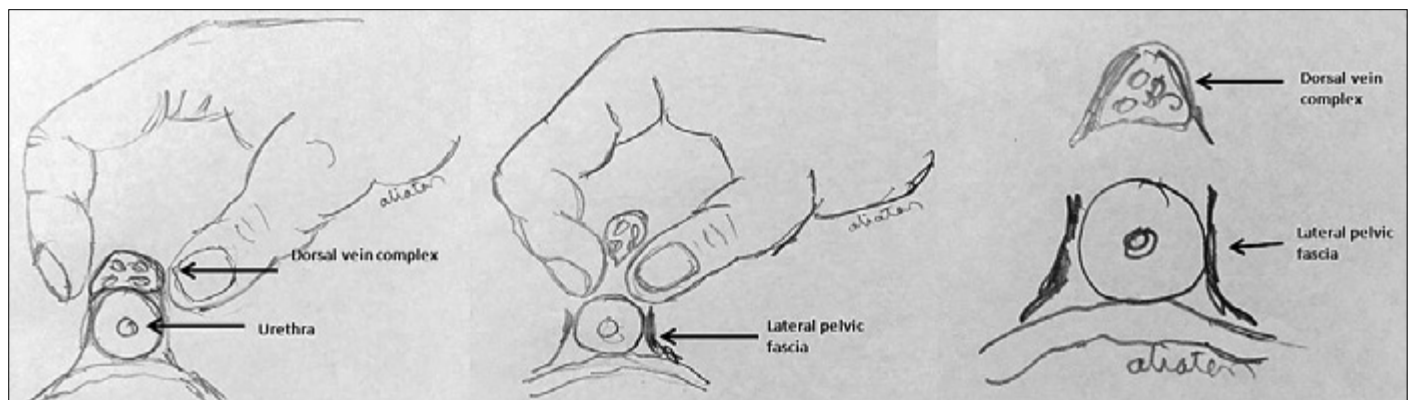


Figure 1. Thumb and index fingers maneuver for passing under the dorsal vein.

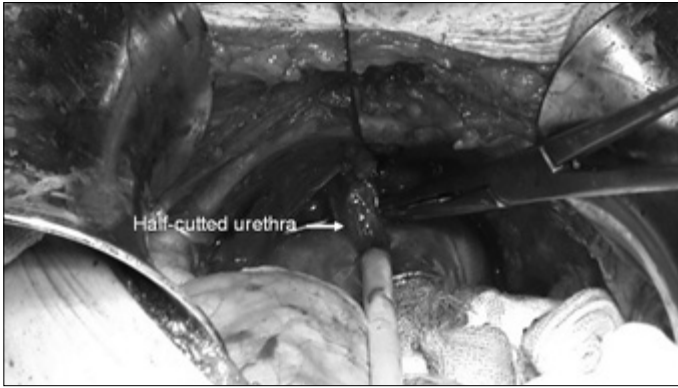


Figure 4. The urethra is divided.

vesico-urethral anastomosis and to maintain erectile function with preserving neurovascular bundles. Bloodless surgical field is an obligation for these aims in RRP. Amount of mean blood loss in different studies ranged from 600 mL to 1626 mL.^[4-7] The main source of bleeding during RRP is dorsal vein complex. Therefore, control of dorsal vein complex is of utmost important. Although there are many techniques described to control dorsal vein complex,^[1] blind passage of the right angle clamp underneath dorsal vein complex is the common method. Blind passage of the right angle clamp may be superficial or deep. In superficial passage, dorsal ven complex may be injured. This may be a reason for a serious bleeding. Deep passage may cause the injury of anterior part of the urethra, resulting in a difficult vesico-urethral anastomosis and urinary continence problem. Therefore, blind passage of right angle clamp may be dangerous even by experienced surgeons. We have been using the technique described by Namiki et al.^[2] in 2009 for control of dorsal vein complex in the last years. The results of this technique in 26 patients with localised prostate cancer who underwent open RRP were retrospectively evaluated. The mean age of the patients is 64.1. The mean surgery duration was 150 minutes. Estimated blood loss was 350 mL (range: 300 to 500 mL). Only 2 patients (7.6%) had blood transfusion during and after the surgery. We did not encounter with any urethral injury during seperatin of dorsal vein complex from the urethra by the finger. Length of the urethra between prostatic apex and external urethral sphincter after division of dorsal vein complex was about 2 cm. A waterproof vesico-urethral anastomosis requires a long enough urethra and a well prepared bladder neck. Vesico-urethral anastomosis could be easily made in our patients. No urine leakage from anastomosis was observed and drains were removed 3rd days after the surgery in our group. As a result of this, our patients have a good urinary continence. Continence rate is 92.4% in the 3rd month and there is no apical surgical margin positivity in our patients. In first study by Namiki et al^[2], total urinary control rate was reported 93% and patients younger than 65 years old had no urinary incontinence after RRP. Mean blood loss was 675 mL. A recent study by Cristini et al^[8] in 2013 also used same technique for control of dosal vein complex. Mean blood loos was 620 mL and transfusion rate was 8.9%. Continence was 88% for minimum

1 year follow-up. This method improved prostatic apical control. There were no positive surgical margins in prostatic apex in our patients. Main point to use this technique is to know periprostatic anatomy well. Laparoscopic and robot assisted prostatectomy are performed under x10-20 magnification. Therefore, we had opportunity to see the prostatic and periprostatic areas well. This provided us to improve open surgery. This manoeuvre can not be performed in some patients due to intensive fibrosis around dorsal vein complex and the urethra. In these cases, other techniques can be used to control dorsal vein complex.^[8] Our group is small and there is no control group. Our aim is not a comparison for superiority or inferiority, just to present our initial experience on this method for control of dorsal vein complex. In conclusion, control of dorsal vein complex is very important to decrease blood loss and to improve intraoperative exposure of retropubic area in order to get negative margin of prostatic apex and to provide the urethra long enough for a nice urethrovesical anastomosis. According to our initial experience, this technique seems to provide these aims.

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