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European Association of Urology

Surgery in Motion

Open Retropubic Nerve-Sparing Radical Prostatectomy

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Article info

Article history:
Accepted October 17, 2005
Published online ahead of print on November 18, 2005

Keywords:
Prostate cancer
Radical prostatectomy
Nerve-sparing

Abstract

Retropubic radical prostatectomy is the most commonly used therapeutic option for the treatment of clinically localized prostate cancer. An ongoing stage migration toward organ-confined cancers allows performance of a nerve-sparing procedure in a growing number of patients. Key elements for achieving convincing functional results are a sphincter-preserving ligation of the distal part of the Santorini plexus and the subtle preparation of the neurovascular bundle. This article gives a detailed description of the operative technique, which is demonstrated in the attached DVD. Furthermore, indication, oncologic outcome, and functional results addressing postoperative urinary continence and potency are discussed.

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1. Introduction

Open retropubic radical prostatectomy (RP) is the most commonly used therapeutic option for the treatment of clinically localized prostate cancer. Numerous articles have been published demonstrating excellent tumor control and functional results in addition to a low morbidity of the procedure [1–3]. A nerve-sparing modification of the procedure has become standard practice because an ongoing stage migration toward early detected organ-confined cancers allows this technique in a growing number of patients without compromising cancer control [4–7]. Furthermore, as more cancers are detected at a younger age patients demand a high level of functional outcome after therapy.

We report on our operative technique, long-term cancer control rates, and functional outcome of contemporary nerve-sparing radical prostatectomy (nsRP).

2. Operative technique

2.1. *General recommendations*

Open retropubic RP is the most commonly used operative technique to treat prostate cancer. Numerous refinements were recently implemented making this procedure into a ''minimal invasive'' operation when commonly used definitions for minimal invasiveness are used [8]. With the use of an autoretractor system an optimal and standar-

0302-2838/$ – see front matter doi:10.1016/j.eururo.2005.10.008

dized exposure of the prostate and lymphatics can be achieved. Furthermore, open RP is cost effectiveness because no disposable material is used and the procedure can be performed by 2 surgeons alone. It is helpful to use titanium clips with a rectangular applicator in different sizes and as sewing material Monofil resorbable threads with a 5/8 circumferential needle.

We strongly recommend the use of magnification glasses with a 2.5- up to 3.5-fold magnification and a xenon headlight to combine the potential advantages of laparoscopic RP (which are magnification and optimal light) with the advantages of open surgery (which are tactile sensation and 3-dimensional view). Furthermore, we recommend performing nsRP with spinal anesthesia with additional total intravenous anesthesia (TIVA), if necessary, which allows a quick recovery for the patient. In addition, restriction of intraoperative infusion (maximum 500–1000 mL crystalloid fluids) until the prostate is removed substantially reduces blood loss. An additional means to reduce blood loss is to have the patient in the Trendelenburg position to lower the venous pressure of the operation site. In our series of 678 RPs performed in 2004 mean blood loss was 540 cc and transfusion rate was reduced to <1%.

2.2. *Surgical technique of open nsRP*

The patient is placed in a prone position with slightly overstretched abdomen and pelvis. A Foley catheter is placed, which stays in the sterile operation site for further manipulation. Following an 8–10-cm median incision the cavum retzii can bluntly be exposed with a sponge stick. Adjacent fat tissue is removed to expose the endopelvic fascia. The fascia is then incised and muscle fibers of the levator ani are removed blunt from the prostate using either a small sponge stick or blunt scissors (Fig. 1a, b). The puboprostatic ligaments are bluntly exposed and incised close to the symphysis with care taken on the veins of the adjacent Santorini plexus. The apex can precisely be identified when all muscle fibers of the levator urethrae (the most distal part of the levator muscle at the level of the urethra) and the levator ani are bluntly removed from the prostate and the anterolateral aspects of the urethra. It is important that the fixation of the

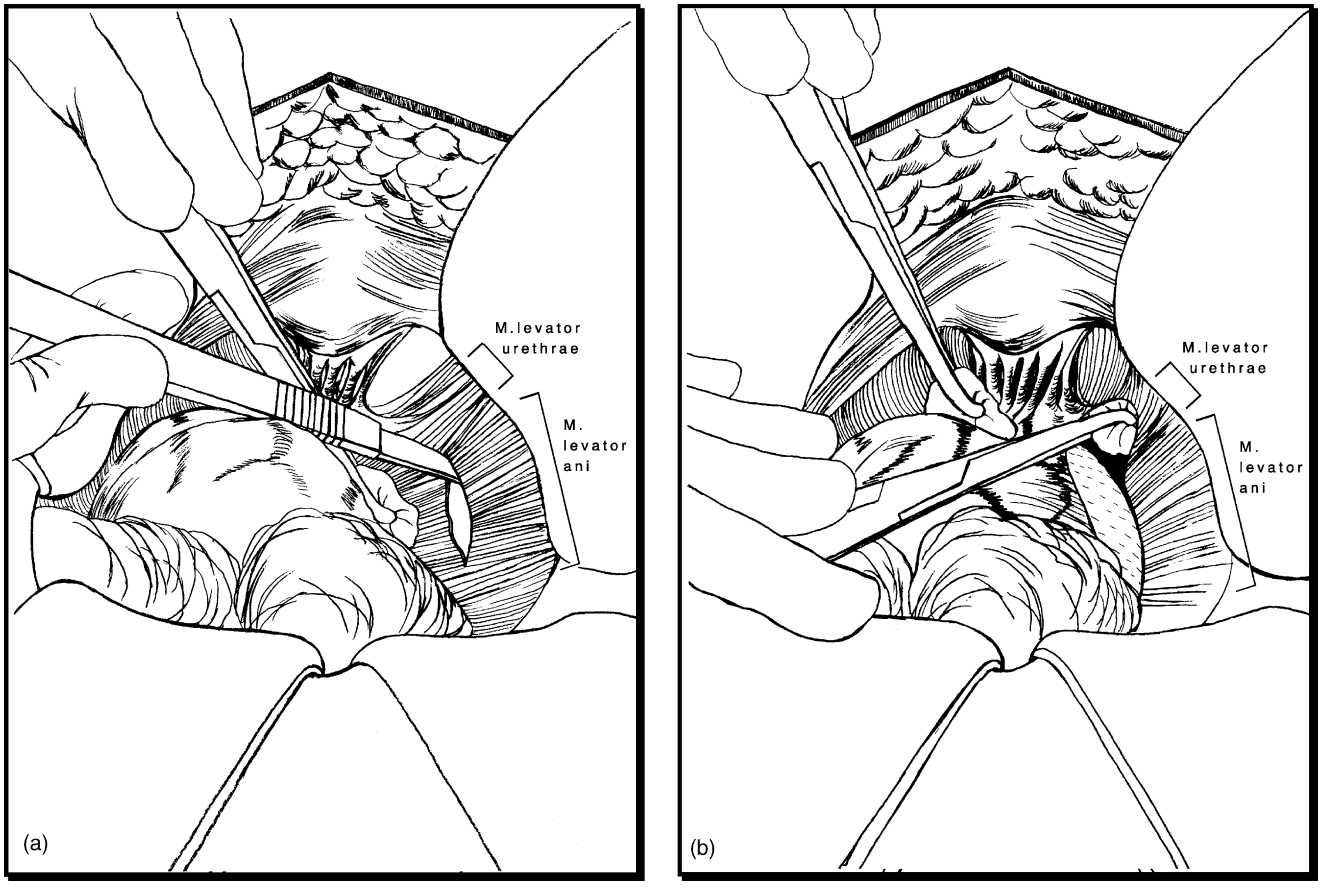

Fig. 1 – (a + b) The right endopelvic fascia is incised and muscle fibers of the levator ani are removed blunt from the lateral prostate side using either a small sponge stick or blunt scissors.