

# **Inguinal Hernia after Urologic Surgery in Males with Special Reference to Radical Retropubic Prostatectomy**

**A Clinical, Epidemiological and Methodological Study**

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AKADEMISK AVHANDLING

Som för avläggandet av medicine doktorsexamen  
vid Sahlgrenska akademien vid Göteborgs universitet  
kommer att offentligen försvaras i  
Arvid Carlssonsalen, Academicum, Medicinargatan 3  
Fredagen den 13 oktober kl. 13.00

av

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Fakultetsopponent:

**Professor Peter Wiklund**

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Avhandlingen baseras på följande delarbeten:

- I. Inguinal Hernia after Radical Retropubic Prostatectomy for Prostate Cancer: A Study of Incidence and Risk Factors in Comparison to No Operation and Lymphadenectomy.**  
P. Lodding, C. Bergdahl, M. Nyberg, E. Pileblad, J. Stranne and J. Hugosson  
*J Urol 166(3): 964-7, 2001*
- II. Inguinal Hernia in Stage M0 Prostate Cancer: A Comparison of Incidence in Men Treated With and Without Radical Retropubic Prostatectomy--An Analysis of 1105 Patients.**  
J. Stranne, J. Hugosson, P. Iversen, T. Morris and P. Lodding  
*Urology 65(5):847-51, 2005*
- III. Post-Radical Retropubic Prostatectomy Inguinal Hernia: An Analysis of Risk Factors With Special Reference to Preoperative Inguinal Hernia Morbidity and Pelvic Lymph Node Dissection.**  
J. Stranne, J. Hugosson and P. Lodding  
*Accepted for publication J Urol, November 2006*
- IV. Inguinal Hernia is a Common Postoperative Complication after Urological Lower Midline Incision Surgery in Males.**  
J. Stranne, J. Hugosson and P. Lodding  
*Submitted for publication*

## ABSTRACT

### **Inguinal Hernia after Urologic Surgery in Males with Special Reference to Radical Retropubic Prostatectomy**

#### **A Clinical, Epidemiological and Methodological Study**

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**Background and aims:** In 1996 the first report indicating that inguinal hernia (IH) was a complication to radical retropubic prostatectomy (RRP) was published. The main aims of this thesis were to further establish this relation, to establish the background incidence of IH in men not subjected to surgery, to identify risk factors for postoperative IH occurrence and to investigate whether postoperative IH is a complication also after other types of surgery performed through a lower midline incision. A further aim was to form a hypothesis regarding the etiology of this complication and explore which methodological considerations have to be addressed when postoperative IH incidence is investigated.

**Materials and methods:** A retrospective patient file survey (PFS) was used on 1039 patients subjected to RRP (n=375 [I] + 664 [III]) and pelvic lymph node dissection for staging of prostate cancer before radiotherapy (PLND) (n=184 [I]). The factors studied in the PFS were post-RRP IH incidence, age at RRP, preoperative IH morbidity, postoperative anastomotic stricture, influence of concurrent PLND at RRP and duration of surgery. From the ongoing Scandinavian Prostate Cancer Group (SPCG) 6 study a database search was used where the annual IH incidence for patients not subjected to surgery (n=953) and patients subjected to RRP (n=152) was investigated (II). Two patient administered questionnaires (PAQ) were also used. One prospective PAQ was sent to patients subjected to RRP (n=207) in whom the postoperative IH incidence was studied and preoperative IH morbidity (III). One retrospective PAQ was sent to patients subjected to PLND (n=88), open prostatectomy for benign prostatic hyperplasia (n=95) and cystectomy (n=76) where the postoperative IH incidence was explored (IV).

**Results and conclusions:** The results show that the incidence of IH within 2 years after RRP is increased at least fifteen-fold as compared to a non-surgical group of patients. The background incidence of clinically overt IHs in men with prostate cancer and a mean age of 69 years is less than 0.5% per year. Increased age and preoperative IH morbidity are risk factors, but postoperative anastomotic stricture, concurrent PLND at the time of RRP and duration of surgery do not seem to increase the risk of post-RRP IH development. The risk of postoperative IH development after other urological procedures in males performed through a lower midline incision seems to be of a similar magnitude as following RRP. The incision *per se* seems to be the cause of the lesion, probably resulting in a direct disruption of the "shutter mechanism" of the inguinal anulus internus. Constitutional factors predisposing for IH may add to the risk. In the methodological analysis PAQ was found to be superior to PFS to detect previous IH morbidity as well as postoperative IHs.

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