De behandeling van goedaardige prostaatvergroting

Pieter Uvin

Uroloog
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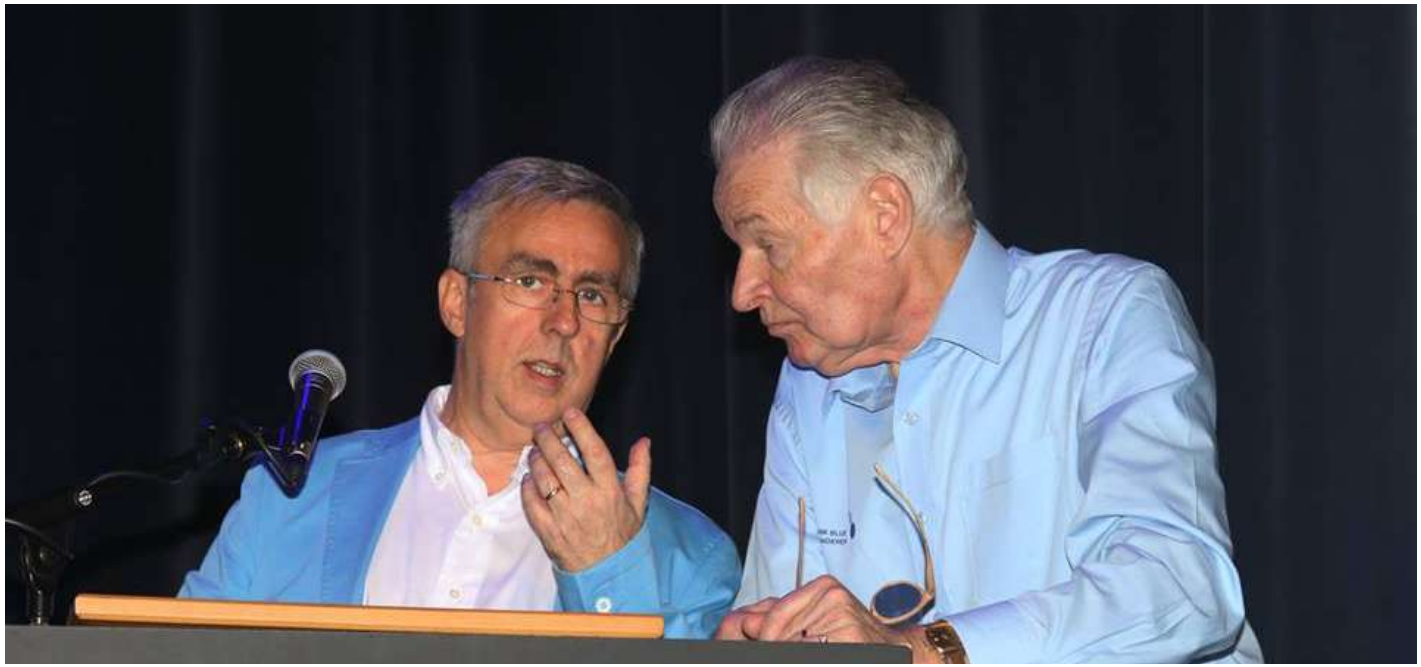
AZ Sint-Jan Brugge AZ Sint-Lucas Brugge

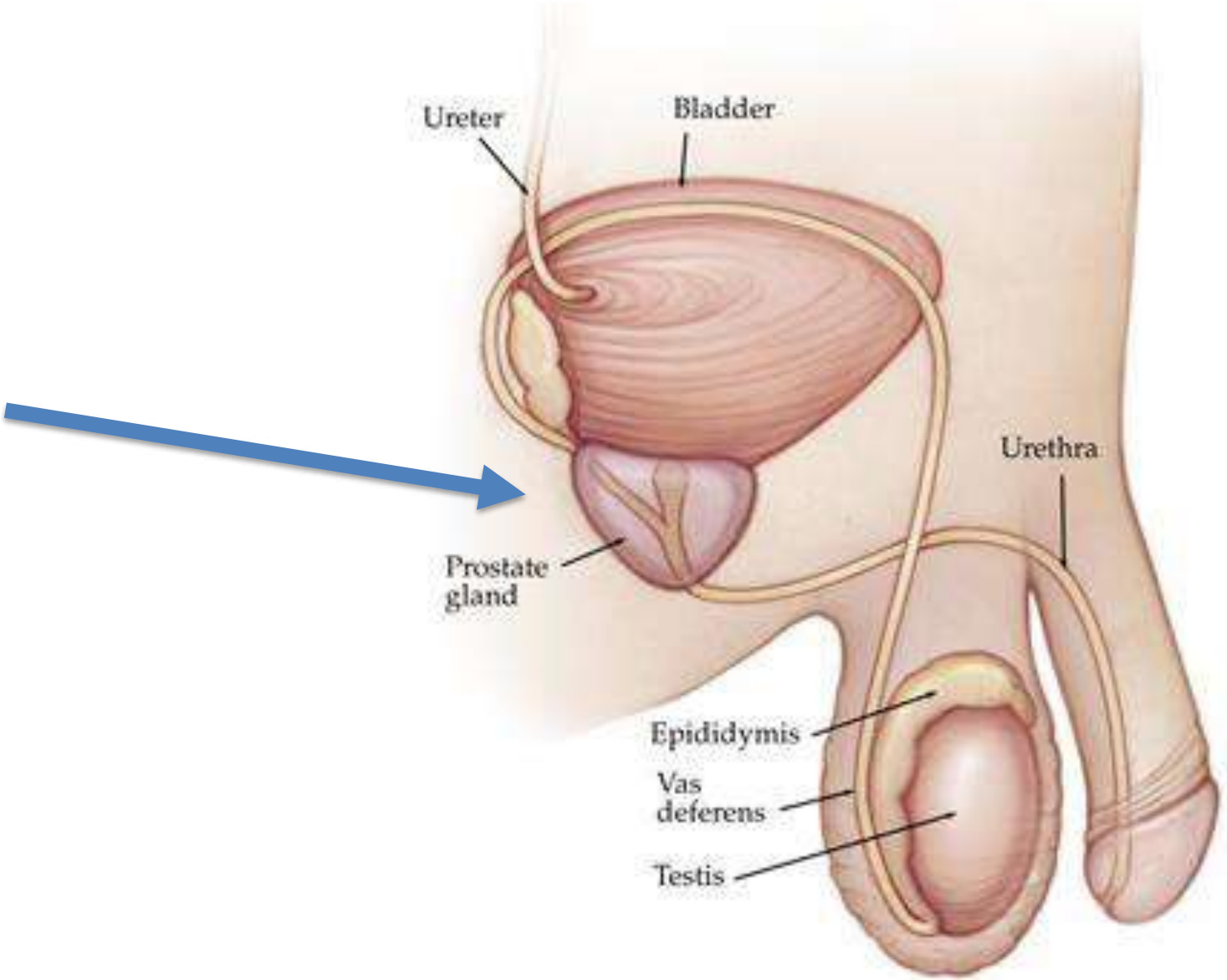
Urologisch Centrum Noord West-Vlaanderen

AZ Sint-Jan Brugge AZ Sint-Lucas Brugge

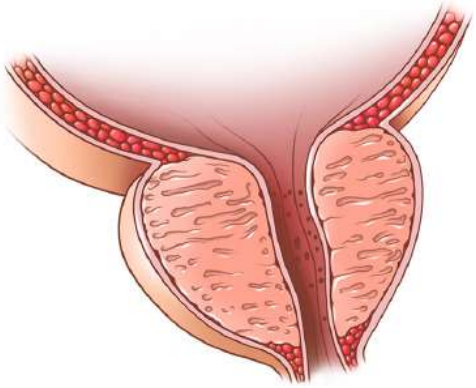

behandeling van de co-morbiditeiten van de
rostaatkanker (seksualiteit, incontinentie,
, neveneffecten hormonale behandeling)
are: de partner betrekken bij de opmaak
Think Blue
Vlaanderen
prostaatkanker
0474 65 56 77

Luc De Laere

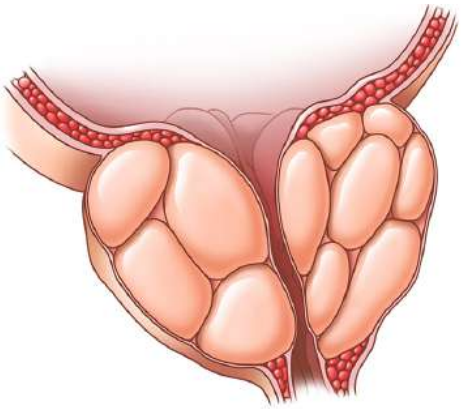



Ureter
Bladder
Urethra
Prostate gland
Epididymis
Vas deferens
Testis

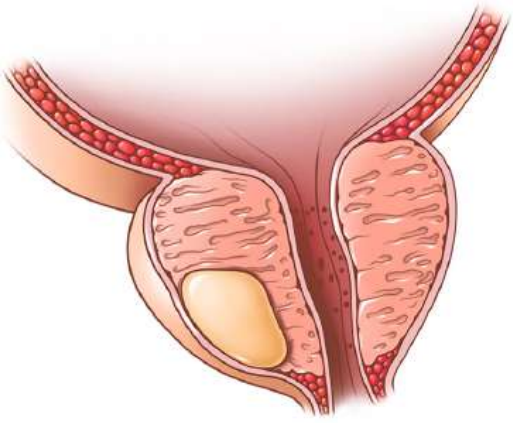
normale prostaat



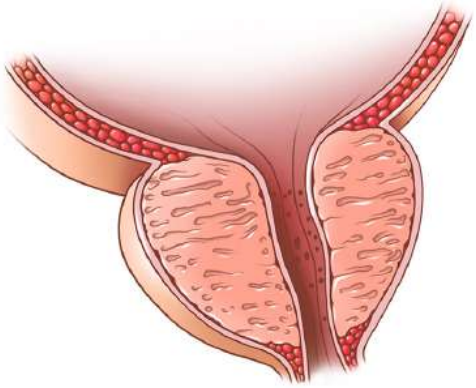
goedaardige prostaatvergroting



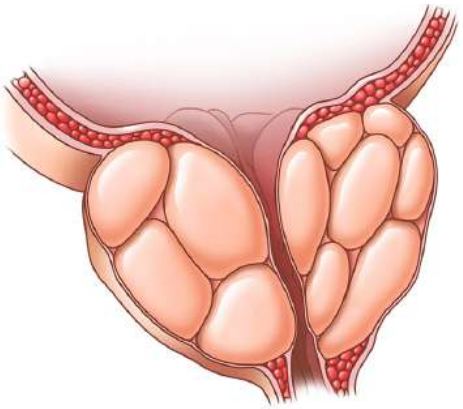
prostaatkanker



normale prostaat



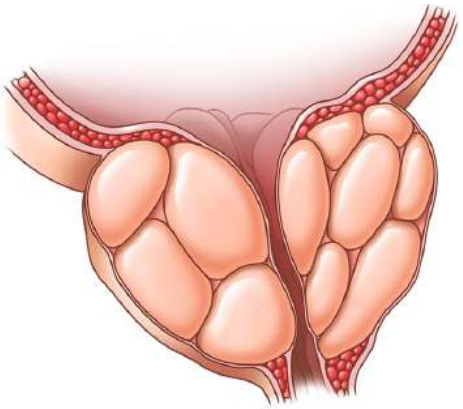
goedaardige prostaatvergroting



prostaatkanker

Soms geen klachten !

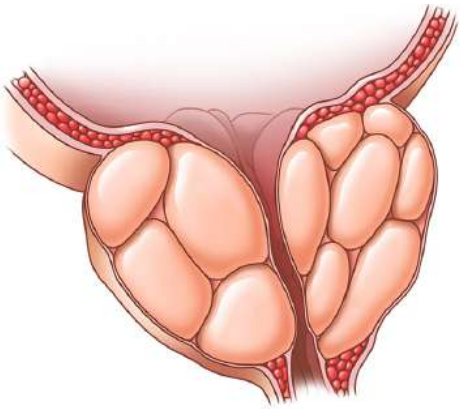
goedaardige prostaatvergroting

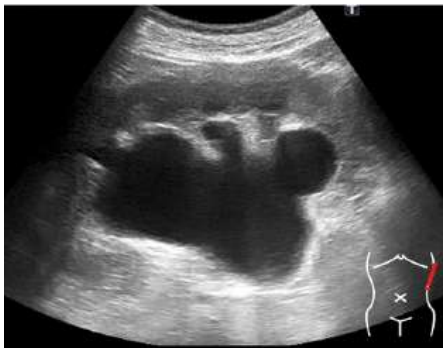


Zwakke straal
Onderbroken straal
Residugevoel

Aandrang
Plasfrequentie ⬆
…

goedaardige prostaatvergroting

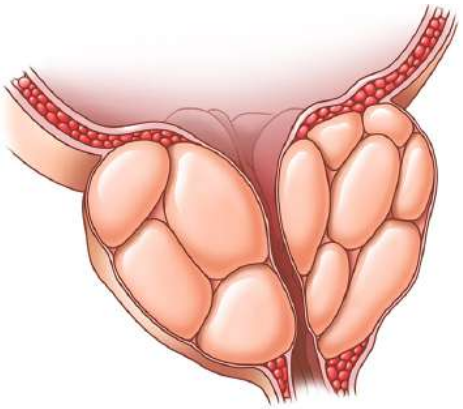




nierfalen

urineretentie

goedaardige prostaatvergroting



blaasstenen

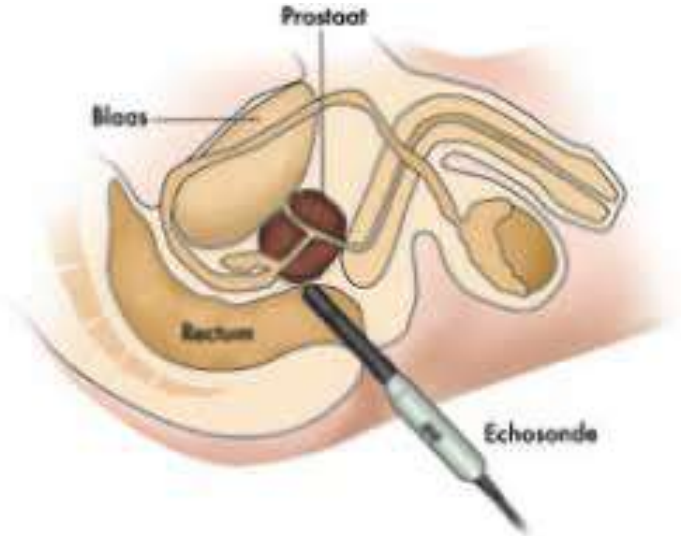
Diagnose van goedaardige prostaatvergroting

- Klachten patiënt
- Vragenlijsten (IPSS)

- Rectaal toucher
- Echografie van de prostaat

- Bloed en urine

- Uroflow
- Urodynamisch onderzoek



Behandeling met medicatie

- Geneesmiddelen op plantaardige basis (bvb serenoa repens,…)
- Alfa blokkers (bvb tamsulosine,…)
- 5 alfa reductase remmers (bvb dutasteride,…)

Nadelen

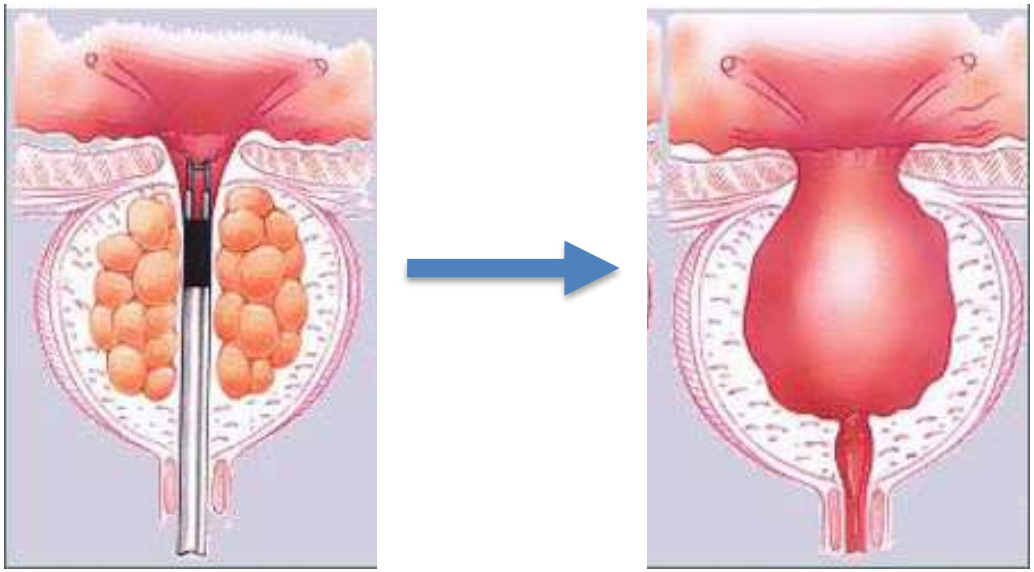
Efficiëntie

Neveneffecten

Kostprijs

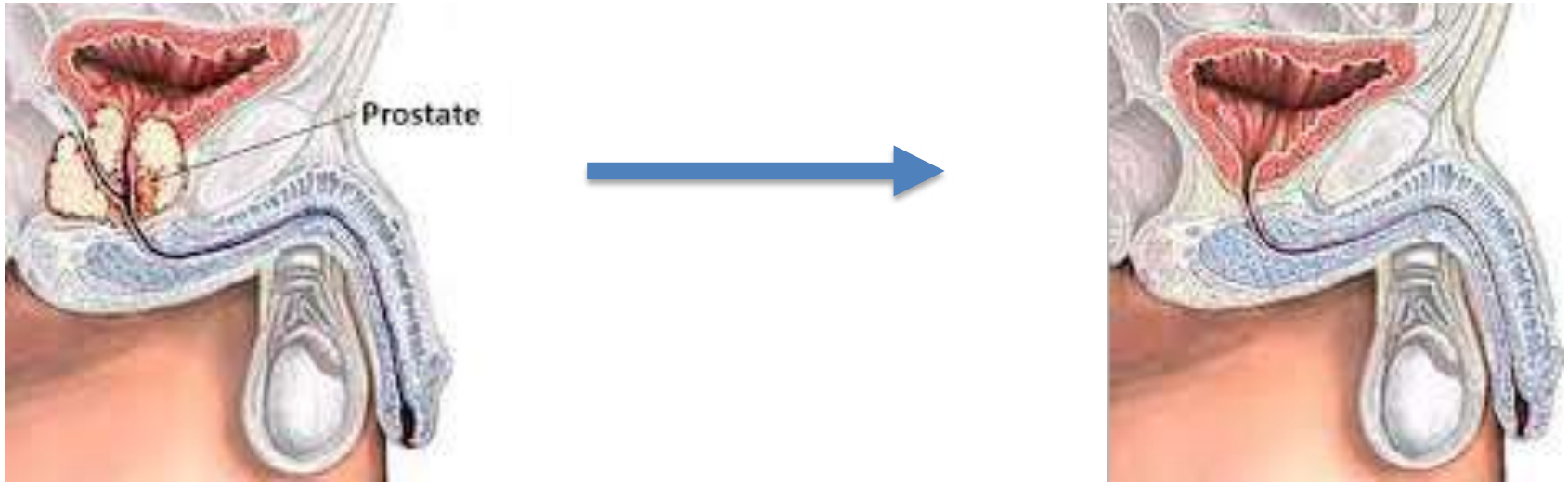
chirurgie voor goedaardige prostaatvergroting

Doel van chirurgie voor goedaardige prostaatvergroting



Het adenoom verwijderen terwijl het kapsel ter plaatse blijft

Doel van chirurgie voor prostaatkanker



De prostaat VOLLEDIG verwijderen

Doel van chirurgie voor goedaardige prostaatvergroting

Het adenoom verwijderen terwijl het kapsel ter plaatse blijft

Klassieke behandelingen

Open prostatectomie (>80g)

TURP (< 80g)

Klassieke behandelingen

Open prostatectomie (>80g)

TURP (< 80g)

Laser enucleatie

HoLEP

ThuLEP, Greenlight,…

Klassieke behandelingen

Open prostatectomie (>80g)

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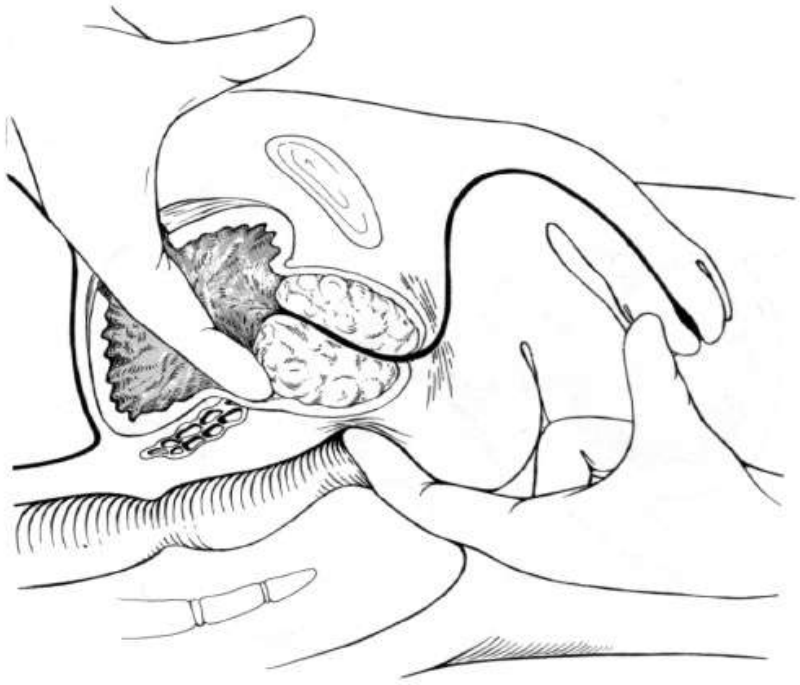
Laser enucleatie

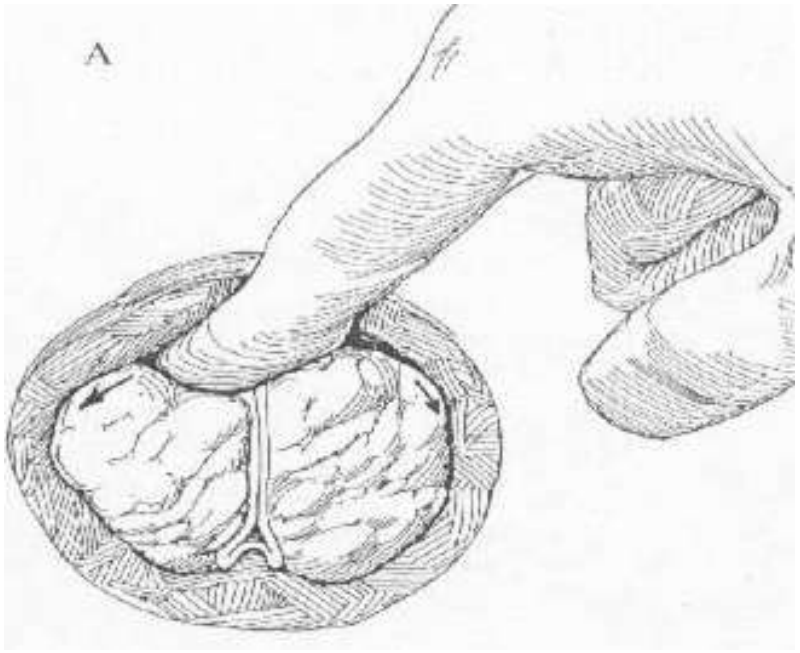
HoLEP

ThuLEP, Greenlight,…

Open prostatectomie

Open prostatectomie





Enucleatie **Volumereductie**

Open prostatectomie

Wanneer:

- prostaten van >80g

Pro:

- goed functioneel resultaat

Open prostatectomie

Wanneer:
- prostaten van >80g

Pro:
- goed functioneel resultaat

Contra:
- bloedverlies (transfusie bij 8%)
- complicatierisico
- hospitalisatieduur
- litteken

Klassieke behandelingen

Open prostatectomie (>80g)

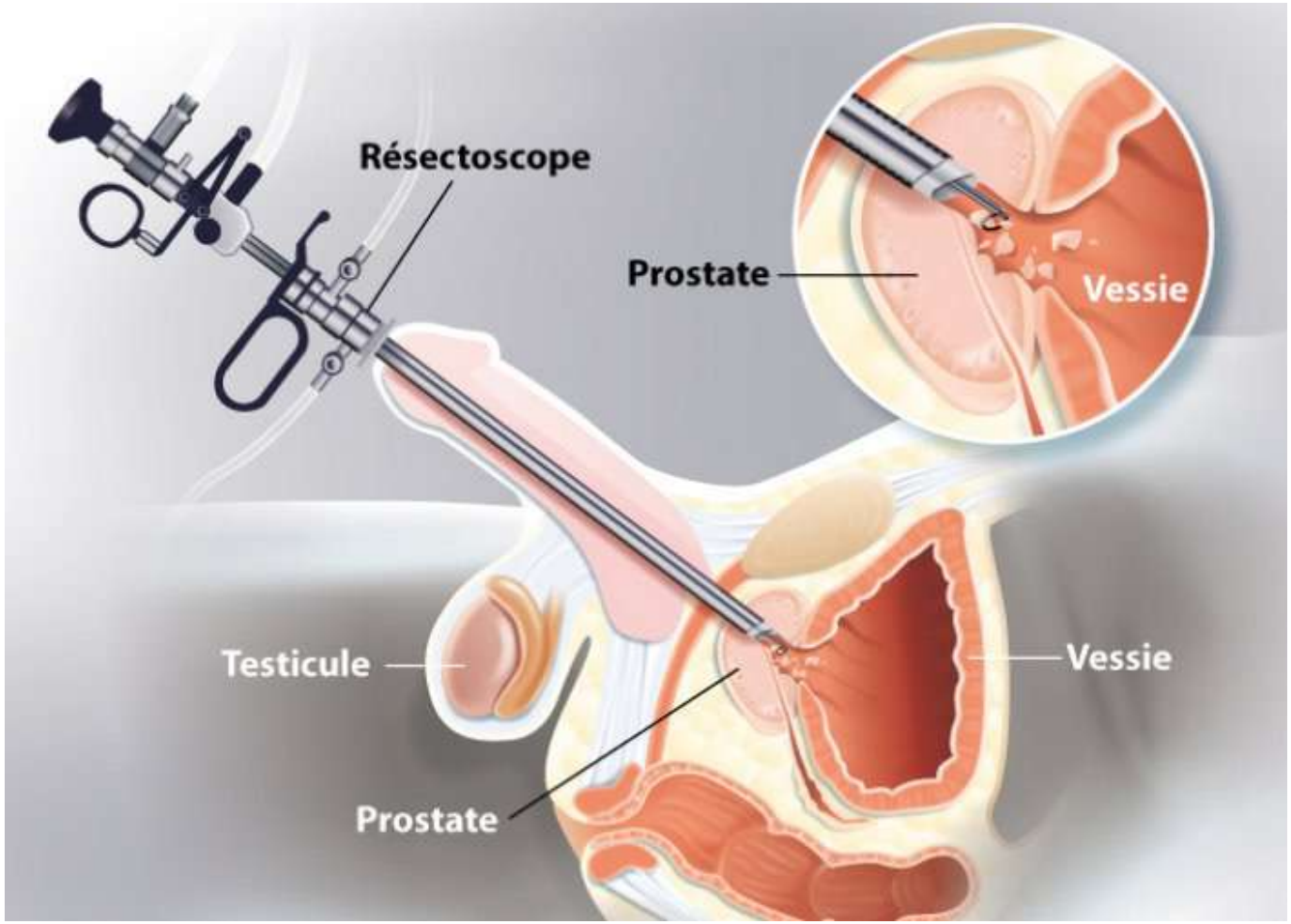
TURP (< 80g)

Laser enucleatie

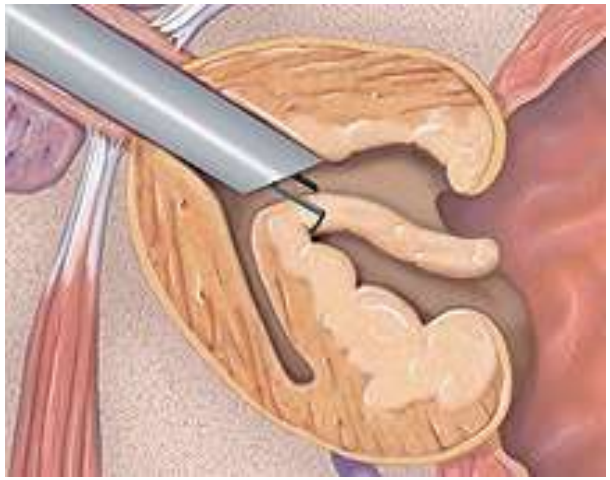
HoLEP

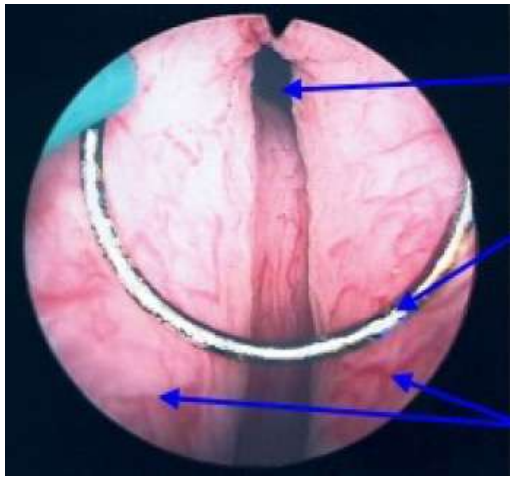
ThuLEP, Greenlight,…

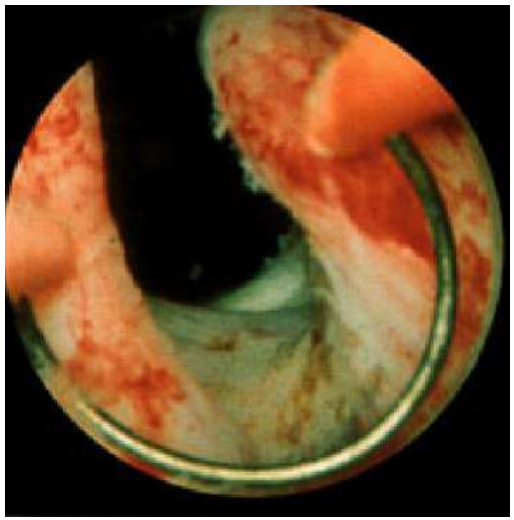
TUR P
(=TransUrethrale Resectie Prostaat)



TUR P
(=TransUrethrale Resectie Prostaat)







Enucleatie

Vinger (”open”)

Enucleatie

Vinger (”open”)

Volumereductie

Elektrische energie: TURP

TUR P
(=TransUrethrale Resectie Prostaat)

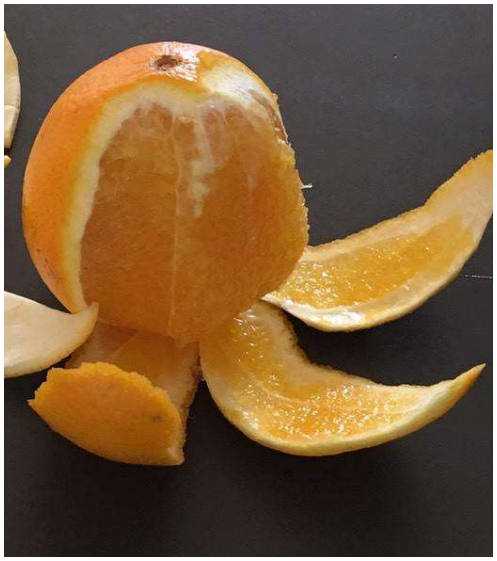
Wanneer:

- prostaten <80g

Pro:

- kortere hospitalisatieduur
- geen litteken

TUR P
(=TransUrethrale Resectie Prostaat)



Wanneer:

- prostaten <80g

Pro:

- kortere hospitalisatieduur
- geen litteken

Contra:

- onvolledige resectie
- geen grote prostaatvolumes
- eerder hoge kans op nabloeding

Ideale chirurgie voor goedaardige prostaatvergroting ?!

- alle prostaatvolumes
- volledige resectie
- korte hospitalisatieduur
- laag complicatierisico

Ideale chirurgie voor goedaardige prostaatvergroting ?!

Klassieke behandelingen

Open prostatectomie (>80g)

TURP (< 80g)

Laser enucleatie

HoLEP

ThuLEP, Greenlight,…

Enucleatie

Vinger

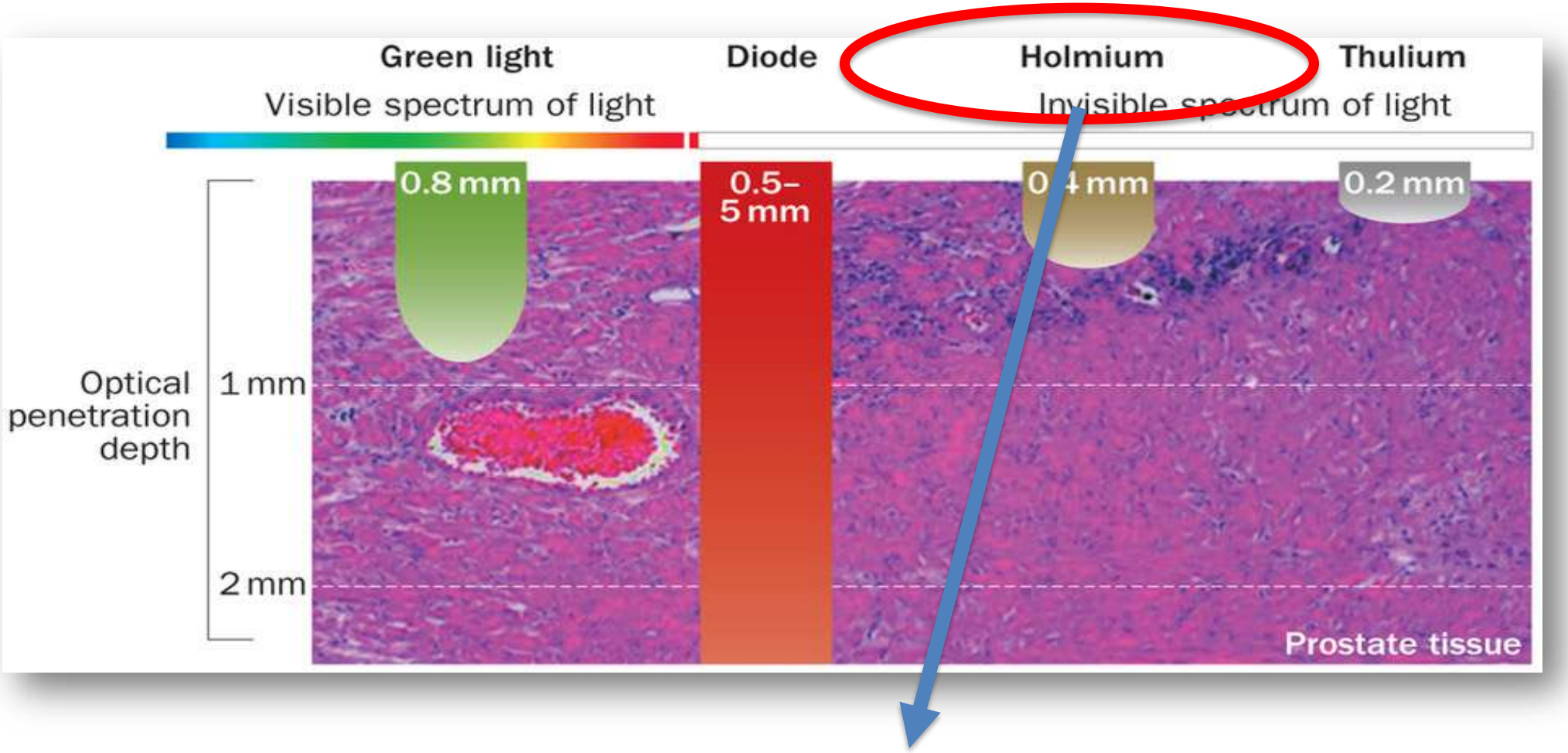
Laser energie

Volumereductie

Elektrische energie: TURP

Laser energie

Verschillende soorten lasers



HoLEP = Holmium Laser Enucleatie van de Prostaat

Holmium

243 items 1998-2019:

Study design:
17 Randomized control trials
42 Prospective trials
59 Retrospective trials
26 Reviews

Thulium

121 items 2005-2019:

Study design:
10 Randomized control trials
21 Prospective trials
30 Retrospective trials
25 Reviews

HoLEP = Holmium Laser Enucleatie van de Prostaat

Green light

141 items 2004-2019:

Study design:
6 Randomized control trials
28 Prospective trials
30 Retrospective trials
28 Reviews

Diode

129 items 1993-2019:

Study design:
8 Randomized control trials
21 Prospective trials
40 Retrospective trials
23 Reviews

Endoscopic enucleation

World J Urol (2016) 34:1353–1355
DOI 10.1007/s00345-016-1922-3

EDITORIAL

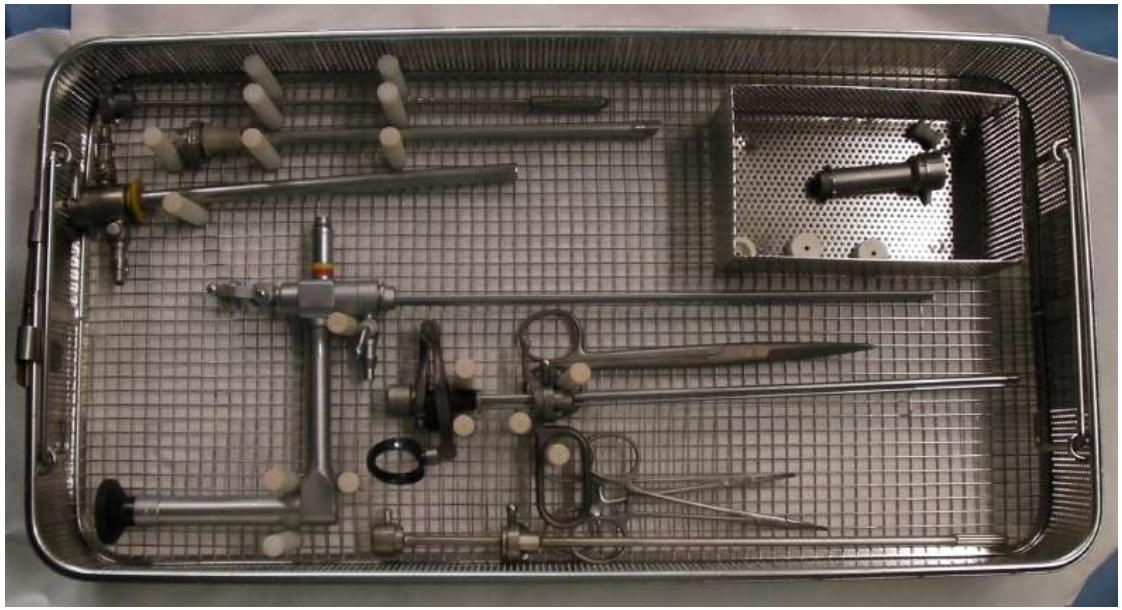
Enucleation is enucleation is enucleation is enucleation

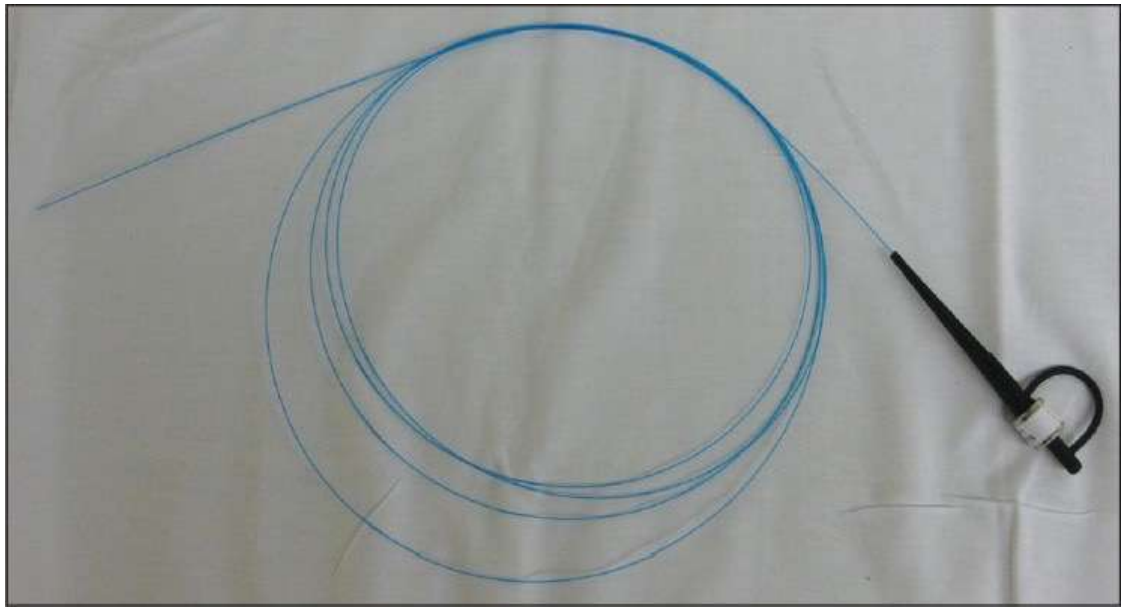
Thomas R. W. Herrmann[1]

Holmium	*HoLEP*
Thulium	*ThuLEP*
Greenlight	*GreenLEP*
Bipolar energy	*BipoLEP*


FARLEY
LASER
PROSTATECTOMY


PowerSuite

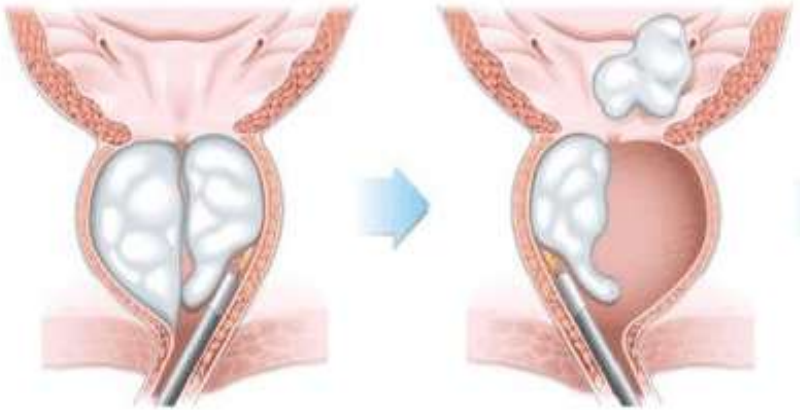




HoLEP

Holmium Laser Enucleatie van de Prostaat

I. Enucleatie



II. Morcellatie

HoLEP

Holmium Laser Enucleatie van de Prostaat

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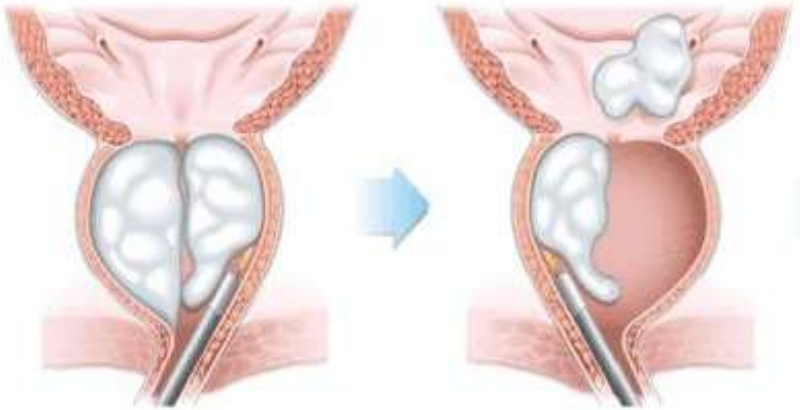

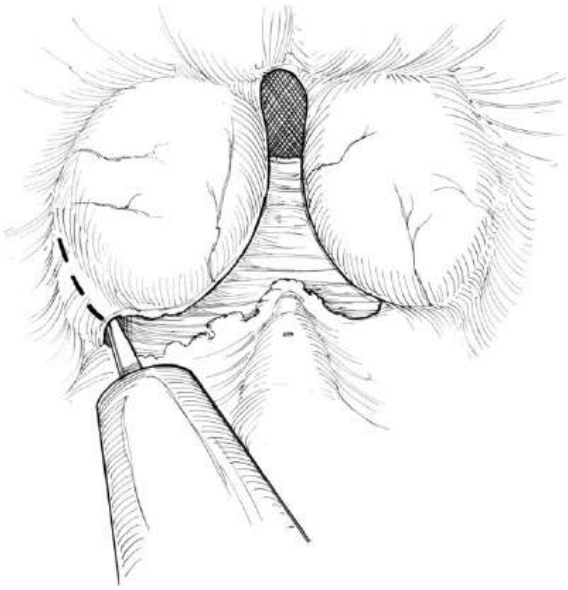

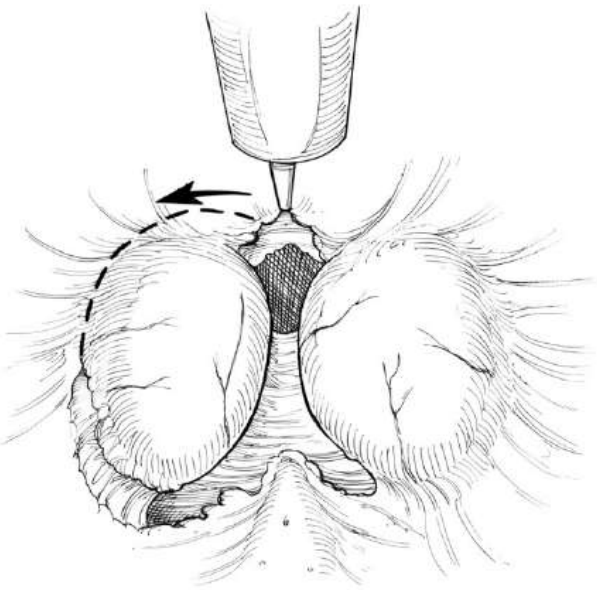

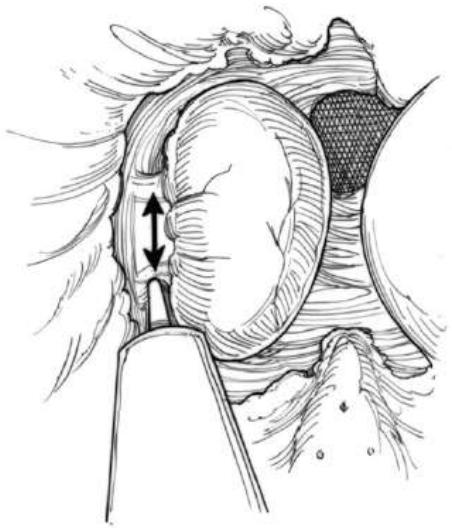

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Holmium Laser Enucleatie van de Prostaat

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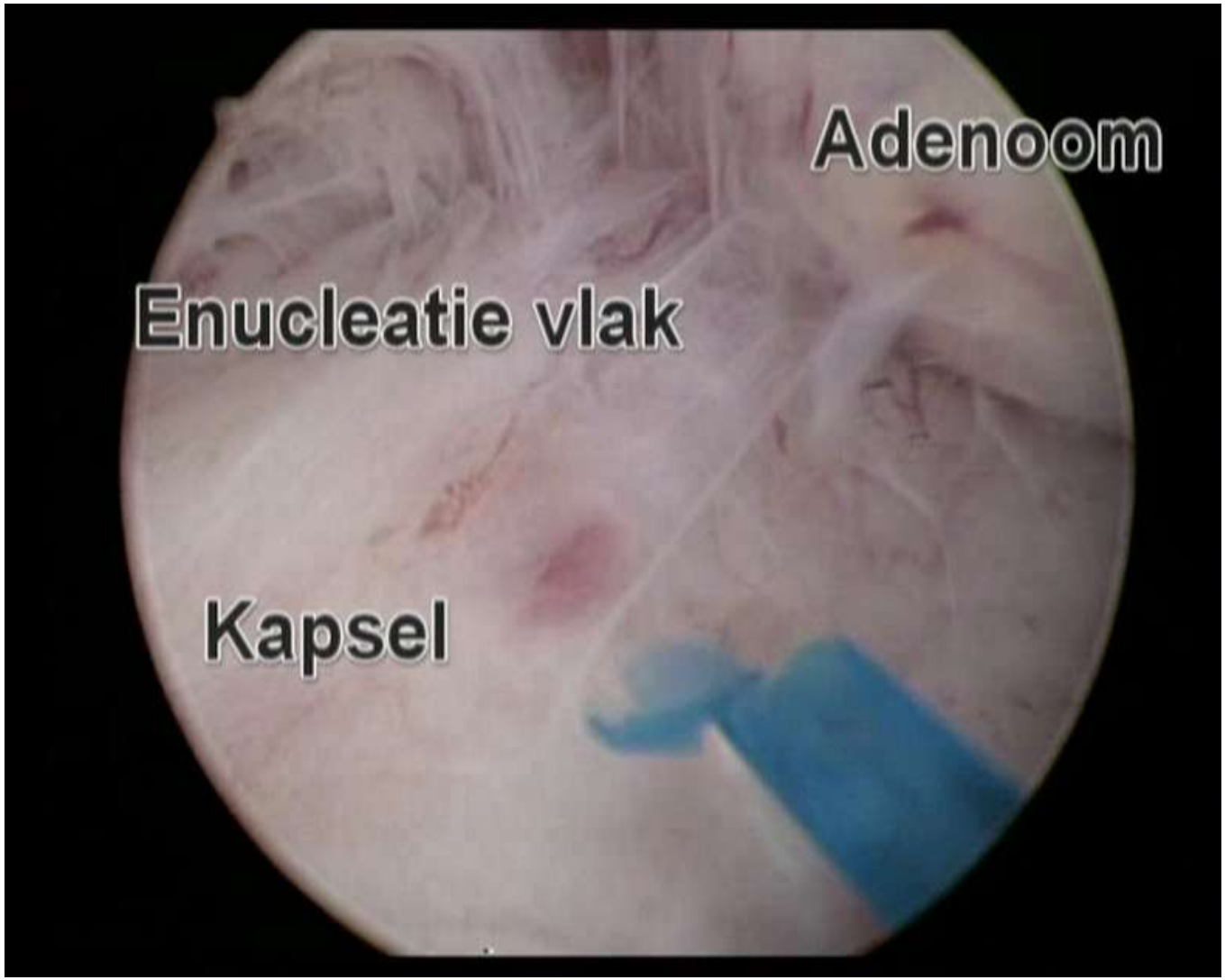

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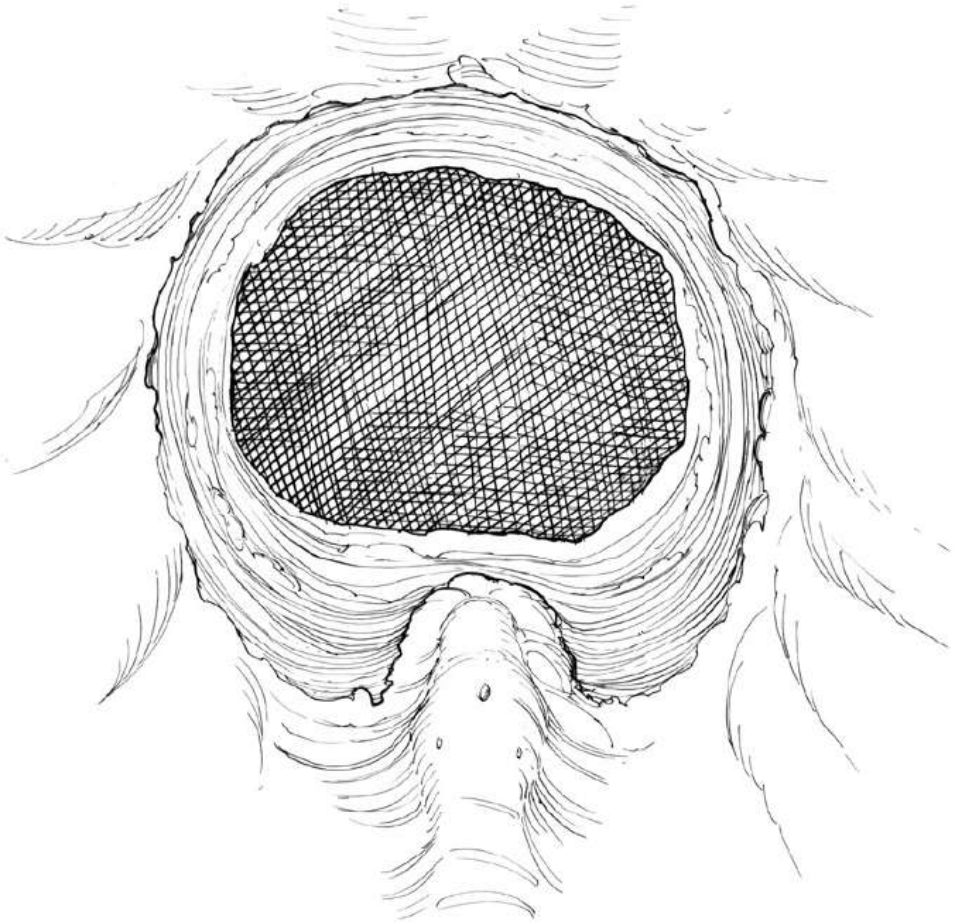
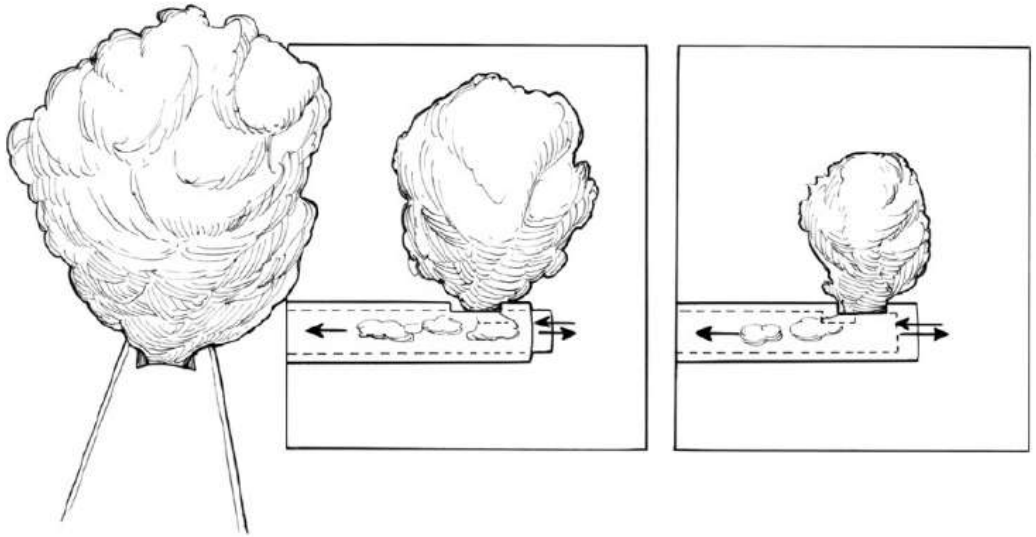


HoLEP

Holmium Laser Enucleatie van de Prostaat

II. Morcellatie



HoLEP

Holmium Laser Enucleatie van de Prostaat

II. Morcellatie

HoLEP

Holmium Laser Enucleatie van de Prostaat

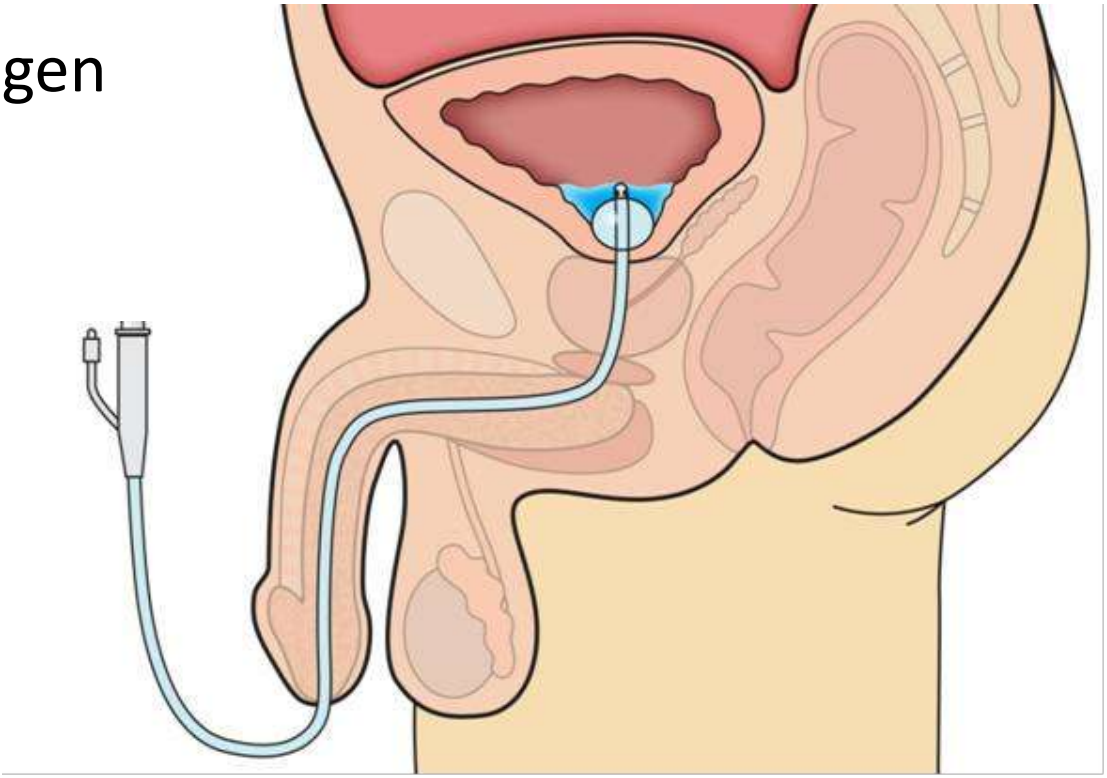
II. Morcellatie

HoLEP

Holmium Laser Enucleatie van de Prostaat

Post-operatief

Transurethrale sonde 1 à 2 dagen

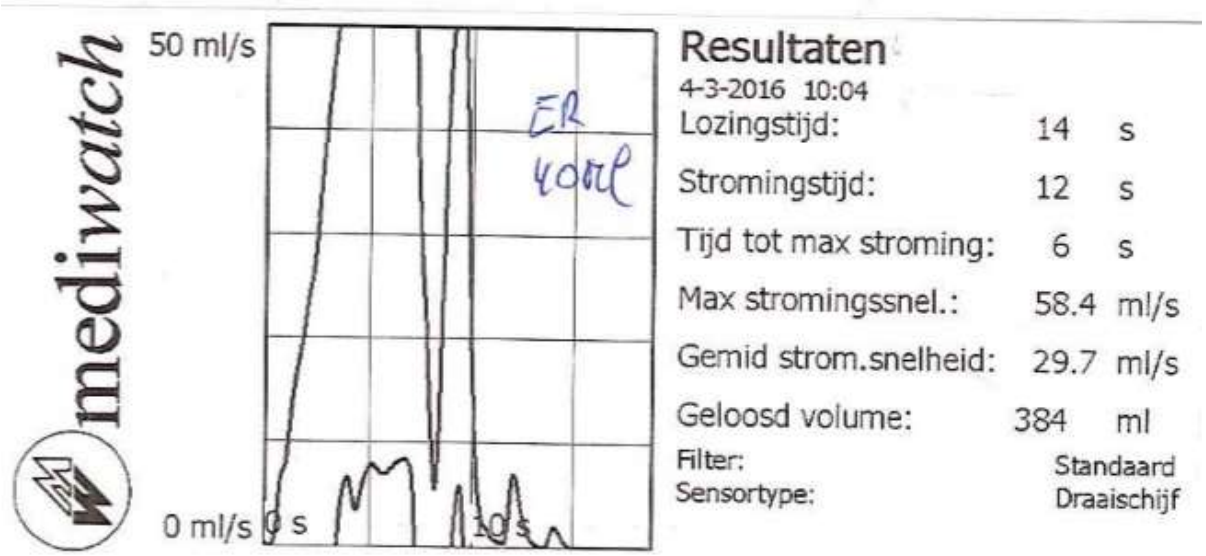


HoLEP

Holmium Laser Enucleatie van de Prostaat

Post-operatief

Na zes weken…



De perfectie???

Wat zijn de nadelen van HoLEP ?

I. Complicaties

II. Investering

III. Eerder moeilijke procedure

TABLE 3. PERIOPERATIVE DATA AND ADVERSE EVENTS

	No. of patients					
	HoLEP	TURP	Pooled estimate	p	I^2 (%)	Favors
Perioperative data						
Operative time	272	268	15.91[5.45,26.36][a]	0.003	93	TURP
Resected weight	272	268	4.12[−7.26, 15.51][a]	0.48	97	None
Blood loss	242	238	−0.46[−0.81, 0.80][a]	0.01	58	HoLEP
Catheterization time	272	268	−1.50[−2.22, −0.79][b]	<0.001	92	HoLEP
Hospital stay	222	218	−1.92[−2.91, −0.93][b]	<0.001	94	HoLEP
Adverse events						
Urethral stricture	10/251	11/239	0.86[0.38, 1.97][c]	0.73	0	None
Stress incontinence	7/251	6/239	1.11[0.40, 3.12][c]	0.84	0	None
Blood transfusion	0/257	8/253	0.23[0.06,0.92][c]	0.04	0	HoLEP
Dysuria	49/157	25/153	1.87[1.25,2.80][c]	0.003	40	TURP
Recatheterization	8/195	13/195	0.63[0.28,1.43][c]	0.38	3	None

[a]Mean difference [95% Confidence interval].
[b]Standard mean difference [95% Confidence interval].
[c]Risk Ratio [95% Confidence interval].
HoLEP = holmium laser enucleation prostatectomy; TURP = transurethral resection of the prostate.

	HoLEP	TURP
Dysurie:	**1/3**	**1/6**

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Volume 27, Number 5, May 2013
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Pp. 604–611
DOI: 10.1089/end.2012.0505

Holmium Laser Enucleation of the Prostate Versus Transurethral Resection of the Prostate: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Lei Yin, MD,[1,*] Jingfei Teng, MD,[1,2,*] Chien-Jung Huang, MD,[3] Xiangmin Zhang, MD,[1] and Danfeng Xu, MD[1]

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HoLEP = holmium laser enucleation prostatectomy; TURP = transurethral resection of the prostate.

HoLEP

Strictuur: 1/25
Incontinentie: 1/35

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Wat zijn de nadelen van HoLEP ?

I. Complicaties

II. Investering

III. Eerder moeilijke procedure

ADULT UROLOGY

Urology 2006

HOLMIUM LASER ENUCLEATION VERSUS OPEN PROSTATECTOMY FOR BENIGN PROSTATIC HYPERPLASIA: AN INPATIENT COST ANALYSIS

ANDREA SALONIA, NAZARENO SUARDI, RICHARD NASPRO, BRUNO MAZZOCCOLI, GIUSEPPE ZANNI, ANDREA GALLINA, LINA BUA, VINCENZO SCATTONI, PATRIZIO RIGATTI, AND FRANCESCO MONTORSI

TABLE III. *Perioperative cost comparison between two groups*

Variable	Group 1	Group 2
Premedication and prophylaxis	6.0 (7.4)	6.0 (7.4)
Anesthesia (disposables/drugs/sedation)	47.2 (58.5)	48.8 (60.5)
OR surgical setup/disposables/fibers	382.3 (473.6)	690.5 (855.4)
Irrigation fluid	100 (123.9)	57.5 (71.2)
Autologous blood transfusion (€75/U)	75 (92.9)	75 (92.9)
Homologous blood transfusion (€150/U)	66.7 (82.6)	11.4 (14.1)
OR time (€480/hr)	461.3 (571.5)	590.5 (731.5)
Postoperative holding area (€480/hr)	200 (247.8)	120 (148.7)
Perioperative analgesic solution	1.8 (2.2)	1.8 (2.2)
Hospital stay (€280/day)	1530.0 (1895.4)	755.2 (935.5)
Unplanned events	0.4 (0.5)	1.6 (2.0)
Total	2868.9 (3554.0)	2356.5 (2919.4)

Group 1 = Open Prostatectomie

Group 2 = HoLEP

Results

Of the other ablative procedures, TUVP was less costly than TURP (and also the least costly single treatment considered) but less effective. HoLEP was estimated to be more effective and less costly than a single TURP but less effective than a strategy involving repeating TURP if necessary. However, the base-case analysis suggested an 80% chance that a strategy of TUVP, followed by HoLEP if required, would be the cost-effective strategy at a threshold of £20,000 per quality-adjusted life-year (QALY). At an approximately £50,000 threshold, on average, TUVP, followed by TURP as required, would be cost-effective, although considerable uncertainty surrounds this finding.

Wat zijn de nadelen van HoLEP ?

I. Complicaties

II. Investering

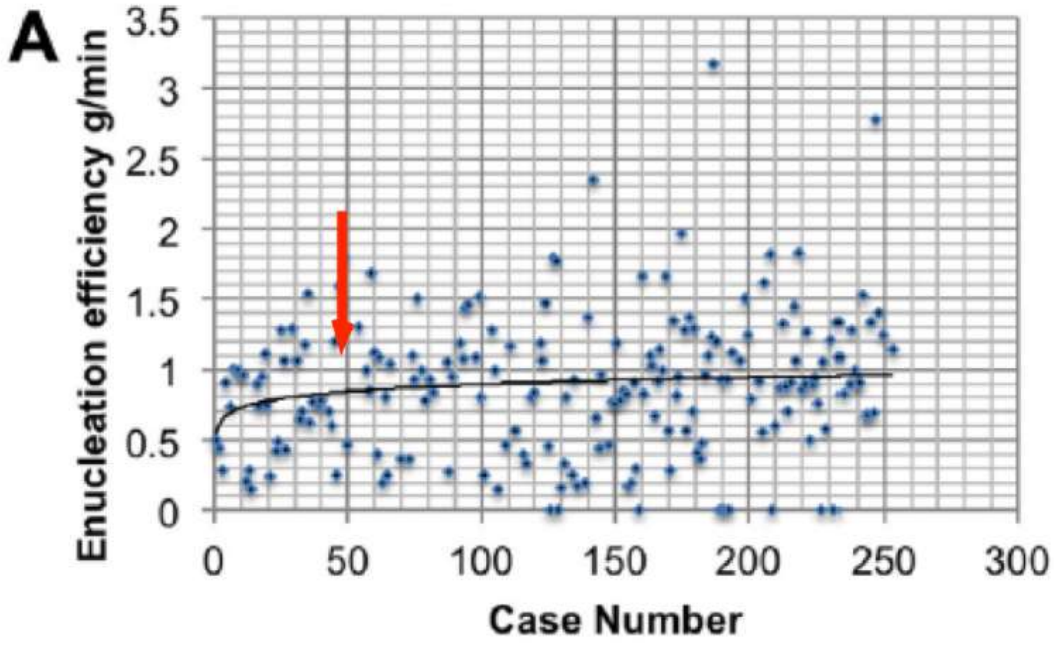
III. Eerder moeilijke procedure

Wat zijn de nadelen van HoLEP ?

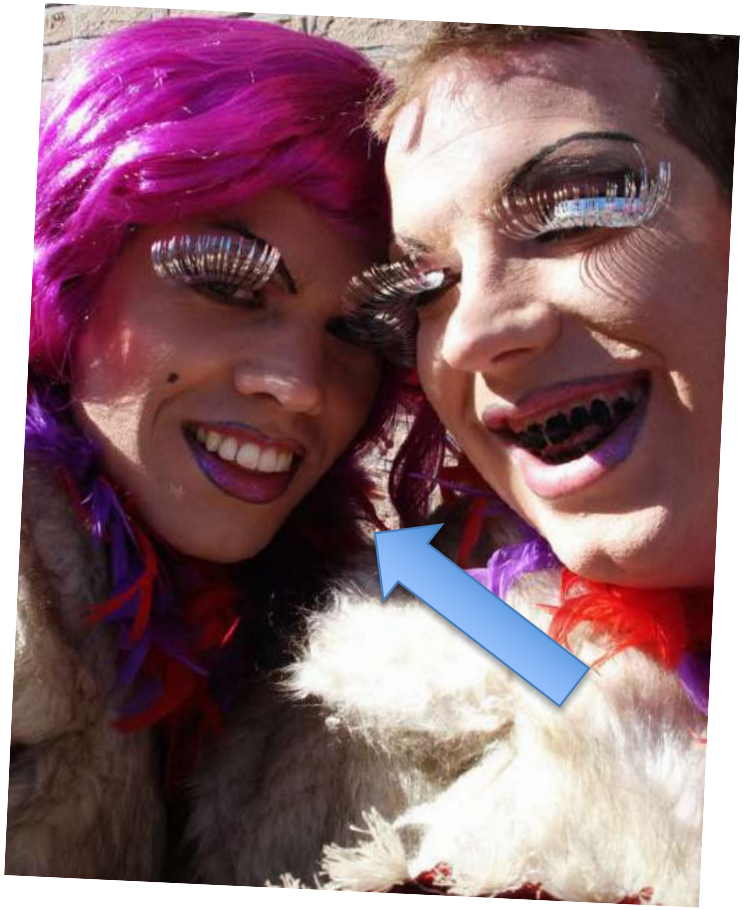
Evaluation of the Learning Curve for Holmium Laser Enucleation of the Prostate Using Multiple Outcome Measures

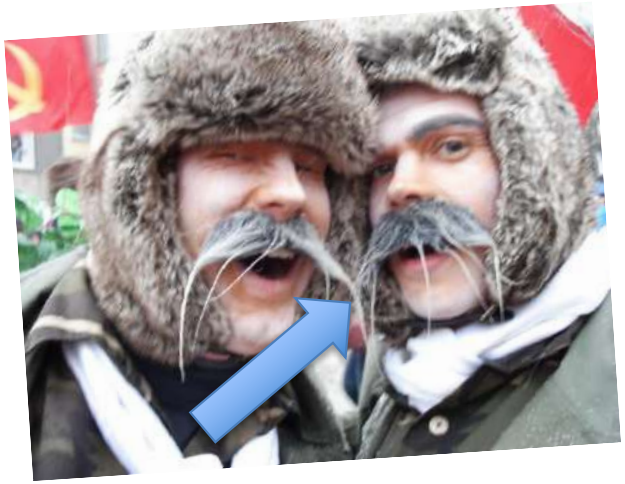
THE JOURNAL of UROLOGY®
Official Journal of the American Urological Association

Brunckhorst O et al, 2015



"Within our single Surgeon cohort, we experienced a ***learning curve of 40-60 cases*** *for the HoLEP precedure"*





Terug naar Aalst…

Dr Rappe

ASZ Aalst

Dr Schatteman
Dr De Naeyer

OLV Aalst

Dr Rappe

ASZ Aalst

Dr Schatteman
Dr De Naeyer

OLV Aalst

Dr Lehrich
Dr Böhme

Auguste-Viktoria-Krankenhaus Berlijn

Wegen de nadelen op tegen de voordelen?

JA

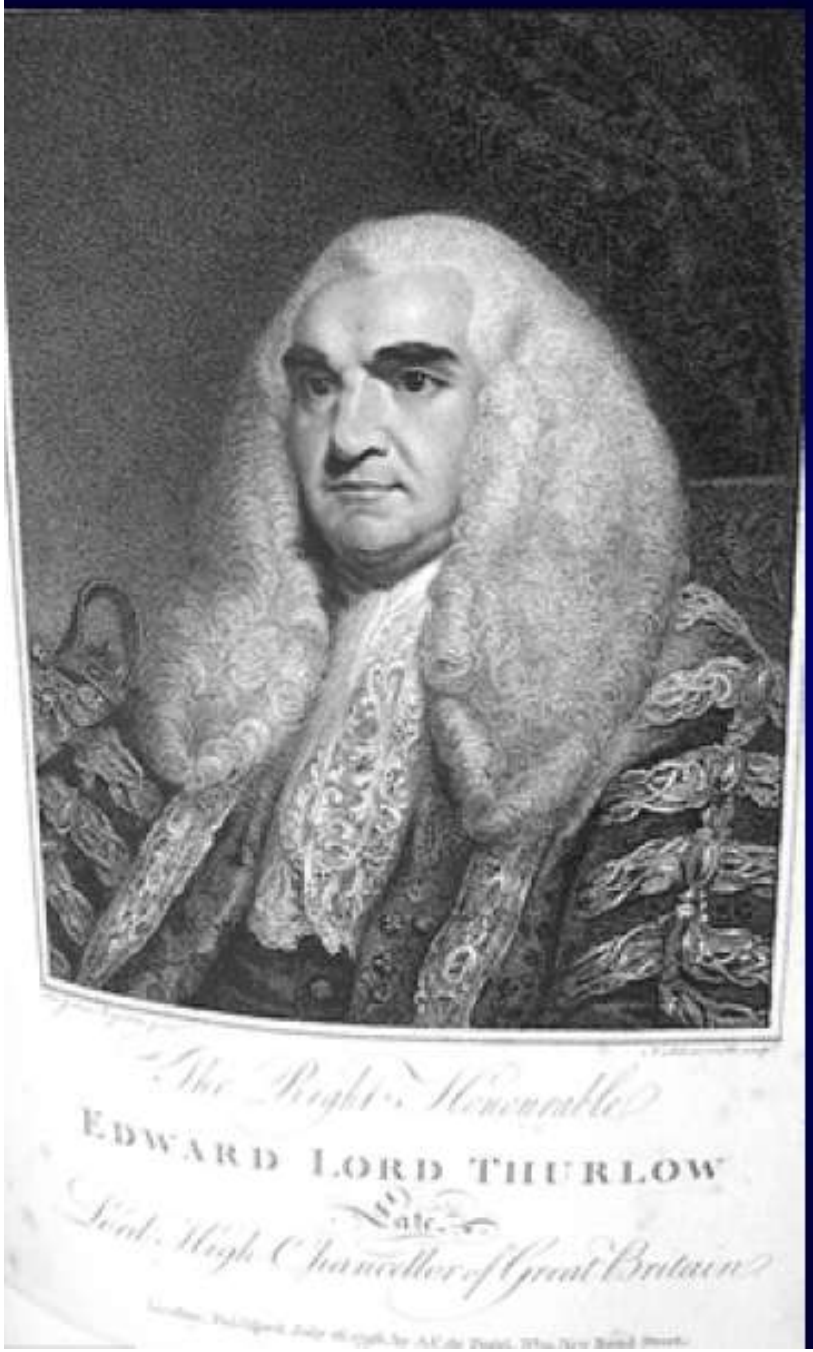
uroweb.org

Recommendation	Strength rating
Offer laser enucleation of the prostate using Ho:YAG laser (HoLEP) to men with moderate-to-severe LUTS as an alternative to transurethral resection of the prostate or open prostatectomy.	Strong

EAU richtlijnen 2021

Bied HoLEP aan als alternatief voor TURP en open prostatectomie :

- Minder bloedverlies
- Kortere hospitalisatieduur
- Goede functionele resultaten



"There is no more science in surgery than in butchering,"

- Lord Thurlow

Parliamentary debate on the establishment of a Royal College of Surgeons in 1811

EUROPEAN UROLOGY 50 (2006) 563–568

available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

Benign Prostatic Obstruction

Holmium Laser Enucleation of the Prostate Versus Open Prostatectomy for Prostates >70 g: 24-Month Follow-up

Richard Naspro *, *Nazareno Suardi*, *Andrea Salonia*, *Vincenzo Scattoni*, *Giorgio Guazzoni*, *Renzo Colombo*, *Andrea Cestari*, *Alberto Briganti*, *Bruno Mazzoccoli*, *Patrizio Rigatti*, *Francesco Montorsi*

Department of Urology, University "Vita-Salute", Scientific Institute H. San Raffaele, Milan, Italy

HOLMIUM LASER RESECTION OF THE PROSTATE: PRELIMINARY RESULTS OF A NEW METHOD FOR THE TREATMENT OF BENIGN PROSTATIC HYPERPLASIA

PETER J. GILLING, CAROL B. CASS, MICHAEL D. CRESSWELL, AND MARK R. FRAUNDORFER

Gilling et al. Urology 1996;47: 48-51


5
17
Systematic Reviews
Randomized Control Trials
Cohort Studies
Case-Control Studies
Case Series, Case Reports
Editorials, Expert Opinions

Klassieke behandelingen

Open prostatectomie (>80g)

TURP (< 80g)

Laser enucleatie

HoLEP

ThuLEP, Greenlight,…

EUROPEAN UROLOGY 50 (2006) 563–568

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Department of Urology, University "Vita-Salute", Scientific Institute H. San Raffaele, Milan, Italy

	Preoperatively	Postop 1-year mean ± SD (range)	Postop 2-year mean ± SD (range)	Postop 3-year mean ± SD (range)	Postop 4-year mean ± SD (range)	Postop 5-yr mean ± SD (range)
No. of patients	120	105	99	88	81	74
HoLEP group	60	56	53	48	45	42
OP group	60	49	46	40	36	32
AUA symptom score						
HoLEP group	22.1 ± 3.3 (11–30)	2.3 ± 2.0 (0–11)	2.3 ± 2.2 (0–12)	3.0 ± 3.1 (0–16)	3.0 ± 3.1 (0–10)	3.0 ± 3.2 (0–10)
OP group	21.0 ± 3.6 (13–28)	2.3 ± 1.7 (0–7)	2.4 ± 1.6 (0–8)	2.8 ± 1.6 (0–9)	2.8 ± 1.9 (0–9)	3.0 ± 1.7 (1–9)
p value	0.09	0.94	0.89	0.82	0.68	0.98
Peak flow (ml/s)						
HoLEP group	3.8 ± 3.6 (0–10)	27.4 ± 9.7 (11–49)	26.7 ± 8.3 (14–57)	27.0 ± 9.8 (8–50)	27.7 ± 9.6 (8–53)	24.3 ± 10.1 (8–54)
OP group	3.6 ± 3.8 (0–12)	28.3 ± 7.5 (12–49)	27.4 ± 6.8 (13–51)	25.3 ± 6.9 (11–47)	25.0 ± 8.3 (11–54)	24.4 ± 7.4 (11–49)
p value	0.60	0.86	0.65	0.32	0.20	0.97
Residual volume (ml						
HoLEP group	280 ± 273 (50–1.000)	5.8 ± 16.7 (0–90)	1.7 ± 6.5 (0–33)	6.1 ± 12.1 (0–40)	8.6 ± 13.5 (0–40)	10.6 ± 24.4 (0–138)
OP group	292 ± 191 (50–1.000)	6.4 ± 12.3 (0–40)	2.4 ± 6.8 (0–30)	4.4 ± 10.5 (0–40)	6.5 ± 12.1 (0–40)	5.3 ± 11.2 (0–40)
p value	0.43	0.83	0.61	0.50	0.48	0.25

Postop, postoperative; SD, standard deviation; HoLEP, holmium laser enucleation of the prostate; OP, open prostatectomy; AUA, American Urological Association.

Functionele resultaten : geen verschil

EUROPEAN UROLOGY 50 (2006) 563–568

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European Association of Urology

Benign Prostatic Obstruction

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Department of Urology, University "Vita-Salute", Scientific Institute H. San Raffaele, Milan, Italy

Table 2 – Perioperative data

	HoLEP	OP	*p* value
Total operative time, min	72.09 ± 21.22	58.31 ± 11.95	$p < 0.0001$
Specimen weight, g	59.33 ± 34.77	87.90 ± 41.11	$p = 0.0046$
Hb levels drop, g/dl	2.12 ± 1.48	3.15 ± 1.33	$p = 0.0073$
Autologous blood transfusion	2 (4%)	5 (12.8%)	$p < 0.001$
Homologous blood transfusion	0	2 (5.1%)	$p < 0.007$
Catheterisation time, d	1.5 ± 1.07	4.1 ± 0.5	$p < 0.0001$
Hospital stay, d	2.7 ± 1.1	5.43 ± 1.05	$p < 0.0001$

Data shown as mean ± standard deviation of the mean.
HoLEP = holmium laser enucleation of the prostate; OP = open prostatectomy.

HoLEP

Open Prostatectomie

Klassieke behandelingen

Open prostatectomie (>80g)

TURP (< 80g)

Laser enucleatie

HoLEP

ThuLEP, Greenlight,…

0022-5347/04/1725-1926/0
THE JOURNAL OF UROLOGY®

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Printed in U.S.A.
DOI: 10.1097/01.ju.0000140501.68841.a1

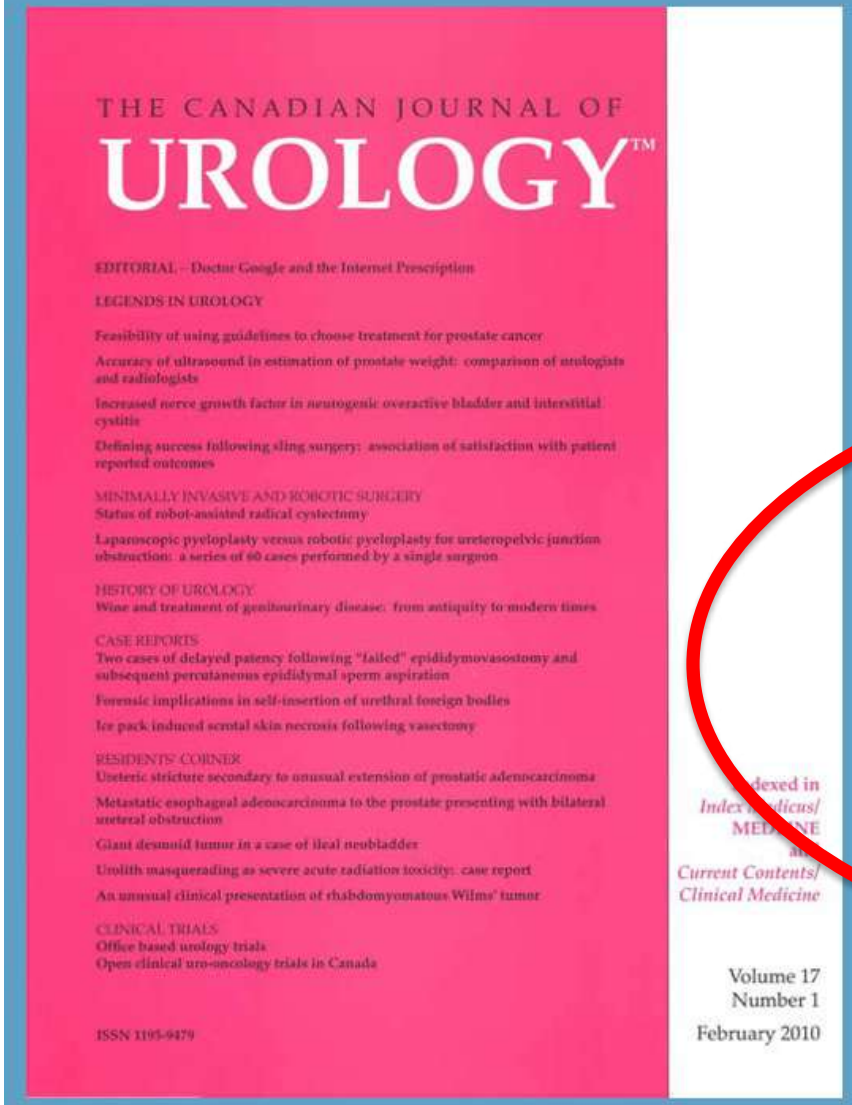
HOLMIUM LASER ENUCLEATION VERSUS TRANSURETHRAL RESECTION OF THE PROSTATE: RESULTS FROM A 2-CENTER, PROSPECTIVE, RANDOMIZED TRIAL IN PATIENTS WITH OBSTRUCTIVE BENIGN PROSTATIC HYPERPLASIA

FRANCESCO MONTORSI,* RICHARD NASPRO, ANDREA SALONIA, NAZARENO SUARDI, ALBERTO BRIGANTI, MATTEO ZANONI, SERGIO VALENTI, IVANO VAVASSORI AND PATRIZIO RIGATTI

From the Departments of Urology, University "Vita-Salute," Scientific Institute Hospital San Raffaele, Milan and Cliniche Gavazzeni (SV, IV), Bergamo, Italy

	Mean HoLEP ± SD	Mean TURP ± SD	p Value
Operative time (mins):			
Total	74 ± 19.5	57 ± 15	<0.05
Enucleation	38.57 ± 19.8		
Morcellation	12.09 ± 10		
Resected wt (gm)	36.08 ± 27.03	25.4 ± 13.9	<0.05
Retrieval rate (gm/min)	0.48	0.44	Not significant
Hemoglobin (gm/dl):			
Preop	14.57 ± 1.35	15.1 ± 1.43	Not significant
Postop	13.22 ± 1.45	13.7 ± 1.42	Not significant
Blood loss (gm/dl)	1.32 ± 1.8	1.29 ± 2.1	Not significant
Catheterization time (hrs)	31 ± 13	57.78 ± 17.5	<0.001
Hospital stay (hrs)	59 ± 19.9	85.8 ± 18.9	<0.001

Montorsi F et al, J Urol 2004;172:1926-29



- 40 HoLEP 40 TURP
- Prostate size 30-100cc
- One year follow-up
- No difference in operating times
- HoLEP less blood loss, shorter catheter time and hospital stay
- HoLEP greater improvement in flow, AUA and PVR
- 25% irritative symptoms HoLEP vs 20% TURP
- Urethral Strictures HoLEP 1 vs 2 TURP

Eltabey, Sherif, Hussain Can J Urol (2010); 17: 5447-52

HoLEP voor erg grote prostaten

JOURNAL OF ENDOUROLOGY
Volume 24, Number 3, March 2010

Pp. 433–437
DOI: 10.1089/end.2009.0147

Holmium Laser Enucleation of the Prostate for Prostates Larger Than 175 Grams

Amy E. Krambeck, M.D., Shelly E. Handa, R.N., and James E. Lingeman, M.D.

Abstract

Background and Purpose: Open simple prostatectomy has been considered the treatment of choice for symptomatic benign prostatic hyperplasia (BPH) of large prostates because traditional endoscopic techniques have not proven either effective or feasible. We present our experience with holmium laser enucleation of the prostate (HoLEP) for glands >175 cc.

Methods: An Institutional Review Board approved prospective database has been maintained since January 1999 for all HoLEP procedures. The database was reviewed retrospectively for patients who underwent HoLEP for BPH with a preoperative transrectal ultrasonography (TRUS) volume of >175 cc.

Results: From January 1999 to November 2008, we identified 57 patients with a mean pretreatment TRUS volume of 217.8 cc (range 175–391 cc). Preoperative retention was present in 30 patients. Preoperative mean prostate-specific antigen level was 14.6 ng/mL, mean American Urological Association (AUA) symptom index was 19.0, and mean peak flow (Qmax) was 8.2 mL/sec. Mean hospital stay was 26 hours, and postoperative catheterization was 18.5 hours (range 6–96 hrs). All patients were able to void after catheter removal. Mean enucleated tissue weight was 176.4 g (range 48–532.2 g). At 6-month follow-up, AUA symptom index was 6.5, mean PSA level was 0.78 ng/mL, and Qmax was 18.5. During the follow-up period, no patient needed catheterization or had persistent incontinence.

Conclusions: Even in the large prostate gland, HoLEP provides a satisfactory outcome with low morbidity. HoLEP is the only endoscopic technique that allows for tissue removal comparable to that of open prostatectomy for such patients.

HoLEP en de lange termijn resultaten

Holmium Laser Enucleation of the Prostate: Long-Term Durability of Clinical Outcomes and Complication Rates During 10 Years of Followup

Hazem M. Elmansy, Ahmed Kotb and Mostafa M. Elhilali*,†

From the Division of Urology, Department of Surgery, Faculty of Medicine, McGill University, Montreal, Quebec, Canada

Table 1. *Descriptive analysis of HoLEP outcomes*

Followup	No. Pts	I-PSS Mean (range)/Median	QOL Mean (range)/Median	Qmax Mean (range)/Median	PVR Mean (range)/Median
Preop	949	19 (0–35)/19	3.8 (0–6)/4	8 (1.3–20)/8	311 (10–2,500)/192
1 Mo	909	7 (0–32)/6	1.6 (0–6)/1	22 (1.6–67.4)/20	48 (0–500)/32
3 Mos	876	5.2 (0–35)/4	1.2 (0–6)/1	23.2 (2.1–67.4)/21.8	36 (0–999)/22
6 Mos	823	4.7 (0–32)/4	1 (0–6)/1	24.3 (4.8–65.3)/23.2	33 (0–823)/18
1 Yr	771	4.4 (0–27)/3	1 (0–6)/1	24.6 (2.3–70)/23.2	31.7 (0–637)/15
2 Yrs	722	4 (0–30)/3	0.99 (0–6)/1	24.6 (2.4–72.5)/22.6	34 (0–511)/15
3 Yrs	676	4.3 (0–26)/3	0.99 (0–6)/1	24.5 (5.1–72)/22.9	32 (0–575)/14
4 Yrs	623	4.6 (0–27)/3	1 (0–6)/1	23.7 (3.7–67.6)/22.3	36 (0–644)/13
5 Yrs	563	4.6 (0–25)/3	1 (0–5)/1	23.7 (5.1–67.4)/22.8	36 (0–669)/15
6 Yrs	486	4.7 (0–25)/3	1 (0–5)/1	24.7 (0–62.6)/24.1	30 (0–559)/16
7 Yrs	324	4.3 (0–29)/3	1 (0–4)/1	25.6 (1–62.5)/25.1	27 (0–637)/18
8 Yrs	[illegible]	4 (0–20)/3	0.8 (0–5)/1	25.8 (4–67.6)/25.8	27.8 (0–528)/15
[illegible] Yrs	161	3.5 (0–16)/2	0.7 (0–3)/1	26.6 (5.8–57.9)/27.1	27.1 (0–456)/15
10 Yrs	89	3.6 (0–12)/3	0.7 (0–3)/1	26.9 (6.6–44.5)/27.8	20.7 (0–654)/12

Elmansy et al. J Urol 2011; 186: 1972-1976

HoLEP en seks

Impact on Sexual Function of Holmium Laser Enucleation Versus Transurethral Resection of the Prostate: Results of a Prospective, 2-Center, Randomized Trial

Alberto Briganti, Richard Naspro, Andrea Gallina, Andrea Salonia, Ivano Vavassori, Rodolfo Hurle, Enzo Scattoni, Patrizio Rigatti and Francesco Montorsi*

From the Departments of Urology, Universitá Vita-Salute San Raffaele, Milan and Hospital Gavazzeni (IV, RH), Bergamo, Italy

Purpose: We compared the impact of HoLEP and TURP on sexual function.

Materials and Methods: Between January 2002 and January 2003, 120 patients with a mean age ± SD of 65.2 ± 7.1 years who had benign prostatic hyperplasia were enrolled in this 2-center, prospective, randomized study. A total of 60 patients with a mean age of 65.25 ± 6.9 years underwent HoLEP (group 1) and 60 with a mean age of 64.18 ± 7.2 years underwent TURP (group 2). Patients were assessed before surgery, and at 12 and 24-month followup visits. Subjective symptoms were scored by the International Prostate Symptom Score, the International Prostate Symptom Score quality of life question, IIEF, 10 nonvalidated general assessment questions, physical examination, serum prostate specific antigen and transrectal ultrasonography.

Results: A total of 32 patients (53.3%) in group 1 and 31 (51.6%) in group 2 reported various degrees of erectile dysfunction before surgery according to the IIEF-EF score. Differences between preoperative and postoperative orgasmic domain scores in each group were significant ($p < 0.001$). A slight but not significant increase in the mean IIEF-EF domain score was reported in each group at postoperative assessments without any difference between the 2 surgical approaches. According to general assessment question analysis the prevalence of subjectively reported postoperative retrograde ejaculation was significantly higher than at baseline assessment in the 2 groups with no differences between the 2 surgical procedures.

Conclusions: TURP and HoLEP significantly lowered the IIEF orgasmic function domain with no differences between techniques. This was caused by retrograde ejaculation. Marginal, nonsignificant erectile function improvement was reported after surgery in the 2 groups.

80% retrograde ejaculatie !

Briganti A et al. J Urol 2006; 175: 1817

Nadelen

Dysurie
Urineverlies
Strictures

Ejaculatie stoornissen

Hospitalisatie

Klassieke behandelingen

Open prostatectomie (>80g)

TURP (< 80g)

Laser enucleatie

HoLEP

ThuLEP, Greenlight,…

Treatment options : MIST

Minimally invasive surgical treatments : MIST

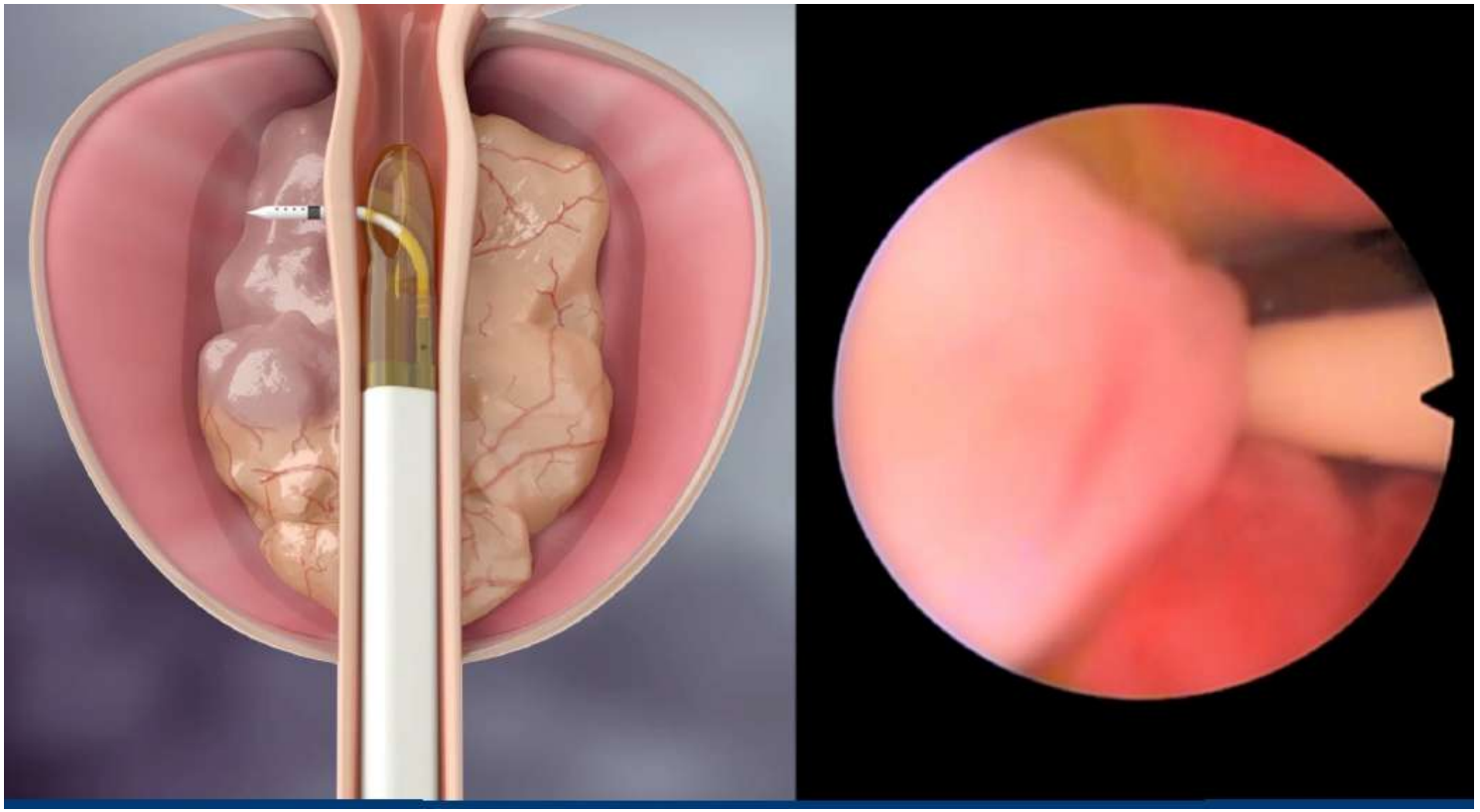
TUMT
TUNA
Urolift
iTIND
Prostatic Artery Embolisation
Aquablation
Rezum

Rezum

Stoom opgewekt door radiofrequentie (103°C)

Stoom in prostaatweefsel leidt tot necrose en krimpen van de prostaat

FDA approved sinds 2015



Praktisch

Anesthesie: algemeen of lokaal

Makkelijke procedure (5 min) in daghospitalisatie

Na de procedure

Patienten gaan naar huis met transurethrale sonde (3 à 7 dagen)

Verbetering van symptomen na één maand

Prostaatmedicatie kan nog enkele weken worden gecontinueerd

Na de procedure

Patienten gaan naar huis met transurethrale sonde (3 à 7 dagen)

Verbetering van symptomen na één maand

Prostaatmedicatie kan nog enkele weken worden gecontinueerd

Echo na zes maanden : 18% volumereductie

Mollengarden et al. Prostate Cancer and Prostatic Diseases, 2017

De literatuur…

1 randomised controlled trial : McVary et al. (2016, 2017, 2018, 2019)

1 prospective observational trial: Dixon et al. (2015, 2016)

2 retrospective observational trials: Mollengarden et al. (2018), Darson et al. (2017)

Eén Randomized Controlled Trial : McVary et al.

Dubbel blind (eerste drie maanden)

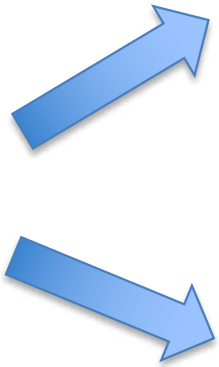
15 centers in US

197 mannen

IPSS >= 13
Qmax <= 15ml/s

prostate volume tusen 30ml en 80ml
postmictioneel residu < 250ml

McVary et al. Urology 126, 2019

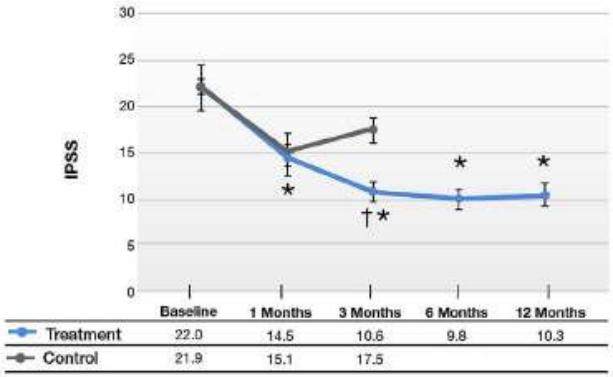


Rezum (136 patiënten)

Sham procedure (61 patiënten): rigide cystoscopie + activatie van generator

McVary et al. Urology 126, 2019

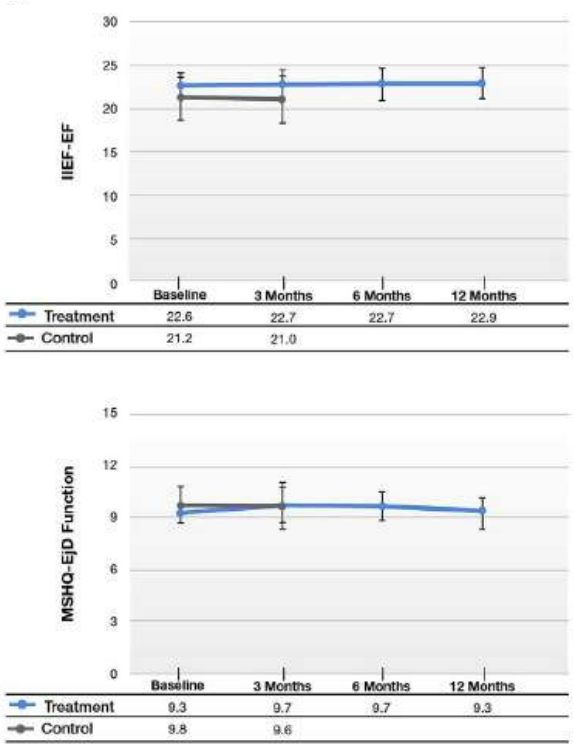
Functioneel



IPSS significantly beter dan “sham” na 3 maanden

Mc Vary et al. J Sex Med 13, 2016

Seksueel



Mc Vary et al. J Sex Med 13, 2016

Neveneffecten

17% dysurie

12% hematurie

4% retentie

4% UWI

Allen verdwenen na drie weken (al dan niet met behandeling)

Table 5. Summary of adjudicated adverse events during the blinded 3-month study period

	Thermal treatment group (n = 136)		Control group (n = 61)	
AEs	Events, n	Subjects, n (%)	Events, n	Subjects, n (%)
Serious AEs	8	7 (5.1)	0	0 (0)
Related serious AEs	3*	2 (1.5)	0	0 (0)
All non-serious AEs	164	59 (43.4)	27	14 (23)
Related AEs	138	52 (38.2)	11	6 (9.8)
Dysuria	23	23 (16.9)	1	1 (1.6)
Hematuria, gross	16	16 (11.8)	0	0 (0)
Hematospermia	10	10 (7.4)	0	0 (0)
Urinary frequency	8	8 (5.9)	0	0 (0)
Urinary urgency	8	8 (5.9)	0	0 (0)
UTI, suspected	6	5 (3.7)	0	0 (0)
Urinary retention	5	5 (3.7)	0	0 (0)
Decrease in ejaculatory volume	4	4 (2.9)	0	0 (0)
Anejaculation	4	4 (2.9)	0	0 (0)
Epididymitis	4	4 (2.9)	1	1 (1.6)
UTI, culture proven	4	4 (2.9)	0	0 (0)
Pain or discomfort, pelvic	4	4 (2.9)	0	0 (0)

AE = adverse event; UTI = urinary tract infection.
*Three serious AEs in two subjects: one with de novo extended urinary retention and one with nausea and vomiting owing to alprazolam and hospitalized overnight for observation.

Mc Vary et al. J Sex Med 13, 2016

Rezum

geeft verbetering van plasklachten bij patiënten met prostaatvolumes tussen 30 en 80g

Maar…

Wat met de lange termijn resultaten ?

NO DATA AVAILABLE

Resultaten na 5 jaar follow up

Herbehandeling na 5 jaar : 15.5%

11.1 % BPH medicatie
4.4% chirurgisch

LBA01-06

FIVE YEAR RESULTS OF THE PROSPECTIVE, RANDOMIZED CONTROLLED TRIAL OF WATER VAPOR THERMAL THERAPY FOR TREATMENT OF LOWER URINARY TRACT SYMPTOMS DUE TO BENIGN PROSTATIC HYPERPLASIA

Kevin McVary, Maywood, IL; Claus Roehrborn, Dallas, TX*

INTRODUCTION: We report the five-year results for the active treatment arm of the multicenter, randomized, controlled trial of water vapor thermal therapy in men with moderate-to-severe lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) with the inclusion of the final surgical and BPH medication retreatment rates.

METHODS: 197 subjects ≥50 years old with IPSS ≥13, maximum flow rate (Qmax) 5-15 ml/s and prostate volume 30-80 cc were randomized 2:1 (thermal therapy Rezum System: sham control rigid cystoscopy). Thermal therapy involved injection of water vapor into obstructive tissue, possibly including the middle lobe and/or enlarged central zone. The primary outcome was change in IPSS; other outcomes assessed included changes in quality of life and Qmax. The study assessed each subject for retreatment of BPH after the index procedure. Subjects who received secondary surgical treatment for LUTS/BPH were included in the surgical retreatment results and subjects who initiated BPH medication (alpha-blocker, or 5-ARIs) were included in the medication retreatment results.

RESULTS: In the randomized comparison at 3 months, mean IPSS reduction from baseline was 11.2 and 4.3 pts for active (n=136) and control (n=61) subjects, (Rezum: Sham respectively) $p<0.0001$. Reduction in IPSS was sustained in the active treatment arm at five years, with a mean reduction from baseline of 10.4 points. The change from baseline in maximum urinary flow rate was 6.4 ml/sec at 3 months and 4.3 ml/sec at five years. Within the active treatment group, the surgical retreatment rate was 4.4%, while 11.1% of the treatment-arm subjects initiated BPH medication at 5 years. On a per subject basis, improvements of symptoms (50% IPSS), quality of life (46% IPSS-QOL, 46% BPH Impact Index) and flow rate (69% Qmax) occurring within ≥3 months were sustained to five years with improvements of 48%, 46%, 49%, and 49%, respectively ($p<0.0001$).

CONCLUSIONS: Treatment-arm results show that the minimally invasive water vapor thermal therapy offers significant improvements in LUTS, QOL and flow rate sustained through 5 years.

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McVary et al. Abstract AUA 2020

Rezum

geeft verbetering van plasklachten bij patiënten met prostaatvolumes tussen 30 en 80g

Maar…

Wat met de lange termijn resultaten ?

NO DATA AVAILABLE

Wat met grote prostaten (>80g)?

NO GOOD DATA AVAILABLE

Wat met patiënten met urineretentie?

Randomized Controlled Trial

- Alleen mannen met prostaatvolumes tussen de 30 en 80g
- Alleen mannen met beperkt residu (< 250ml)
- Gemiddeld residu veranderde niet na Rezum

Table 2. *Outcome changes after convective RF thermal therapy from baseline through 24 months*

Outcome	1 Mo	3 Mos	6 Mos	12 Mos	24 Mos
PVR:*					
No. paired values	131	133	125	118	106
Mean ± SD baseline	81.5 ± 51.4	82.4 ± 51.8	83.4 ± 51.9	82.5 ± 51.2	84.9 ± 54.0
Mean ± SD followup	77.8 ± 68.1	71.8 ± 72.2	75.0 ± 81.8	78.6 ± 79.9	84.6 ± 92.0
Change ± SD	−3.6 ± 68.1	−10.6 ± 68.3	−8.4 ± 75.8	−3.9 ± 82.7	−0.3 ± 85.3

Roehrborn, McVary et al. J Urol 197, 2017

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Wat is het verschil met TURP en HoLEP?

Rezum

Medical therapy

TRUS (6 months after Rezum): **18% volume reduction**

Mollengarden et al. Prostate Cancer Prostatic Dis 2017

TRUS (6 months after finasteride): **18% volume reduction**

Chiu et al. J Chin Med Assoc 2004

Enucleation

TRUS (6 months after HoLEP): **64% volume reduction**
Wilson et al. Eur Urol 2006

TURP

TRUS (6 months after TURP): **36% volume reduction**
Wilson et al. Eur Urol 2006

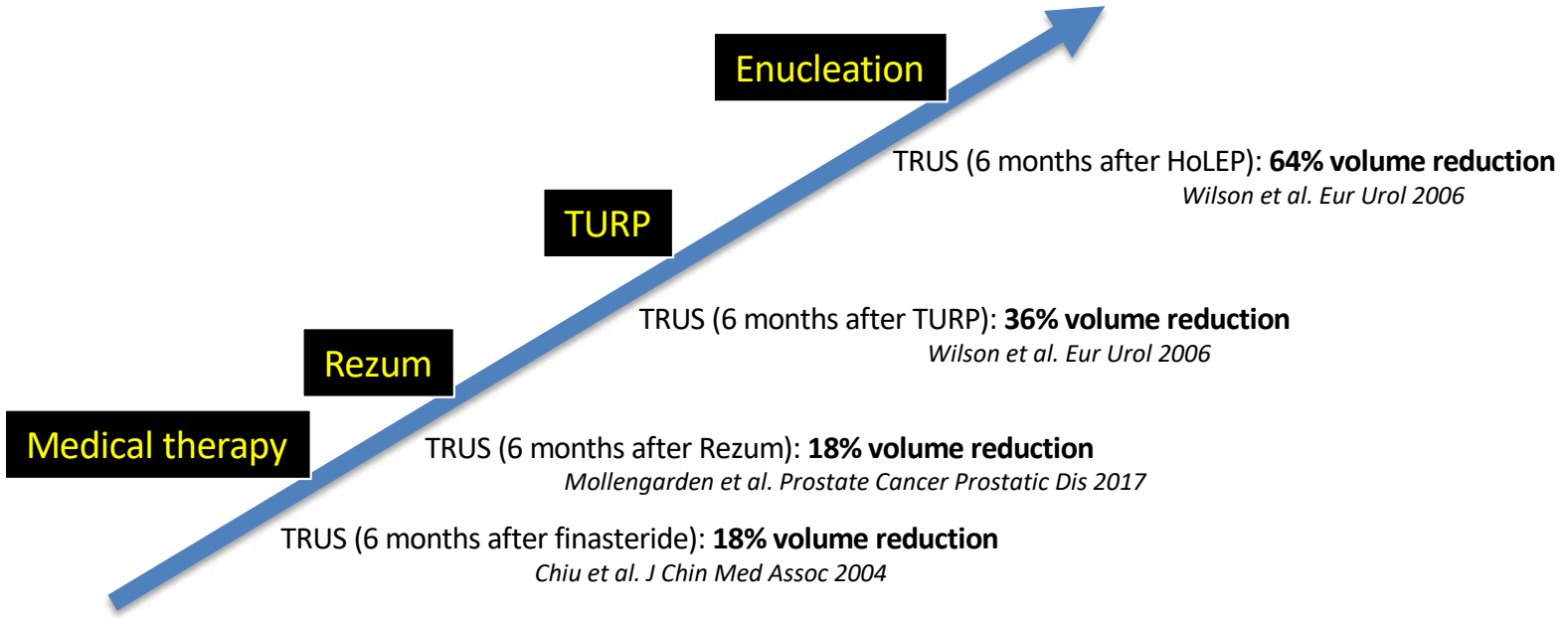
Rezum

Medical therapy

TRUS (6 months after Rezum): **18% volume reduction**
Mollengarden et al. Prostate Cancer Prostatic Dis 2017

TRUS (6 months after finasteride): **18% volume reduction**
Chiu et al. J Chin Med Assoc 2004

Volledige verwijdering adenoom



Geen verwijdering adenoom

IPSS

- 50%

- 60%

- 70%

	Rezum	TURP	HoLEP
Baseline	22	24	26
3 months	-11	-22	-21
12 months	-12	-19	-21
Long term	-10 (4 y)	-14 (8y)	-18 (8y)

McVary et al.
Urology 2019

Gilling et al.
BJUI 109, 2011

Herbehandeling nodig ?

Rezum

Na 5 jaar : 15.5%

11.1 % medicatie
4.4% chirurgisch

McVary et al. AUA 2020

TURP

Na 5 jaar: 5.8%

Madersbacher et al. Eur Urol 47, 2005

HoLEP

Na 7 jaar: 1.4%

Gilling et al. Eur Urol 53, 2008

Seksuele resultaten

Rezum

- Geen veranderde erectiele functie

McVary et al. Urology 2019

HoLEP & TURP

- Geen veranderde erectiele functie

Montorsi et al. J Urol 2004

Seksuele resultaten

Rezum

- Geen veranderde erectiele functie
- Verminderd ejaculatie volume : 3%

McVary et al. Urology 2019

HoLEP & TURP

- Geen veranderde erectiele functie

Montorsi et al. J Urol 2004

- Anejaculation: 76% (HoLEP), 78% (TURP)

Briganti et al. J Urol 2006

Hoeveel dagen met sonde?

Rezum	4	*Dixon et al. Res Rep Urol 2016*
TURP	2 à 3	*Gilling et al. BJUI 2011*
HoLEP	1 à 2	*Gilling et al. BJUI 2011*

Leercurve

Rezum	5 casussen	*NxThera Website*
TURP	20 casussen	*Yamaçake et al. Turk J Urol 2015*
HoLEP	50 casussen	*Bunckhorst et al. J Urol 2015*

One more thing…

Kost

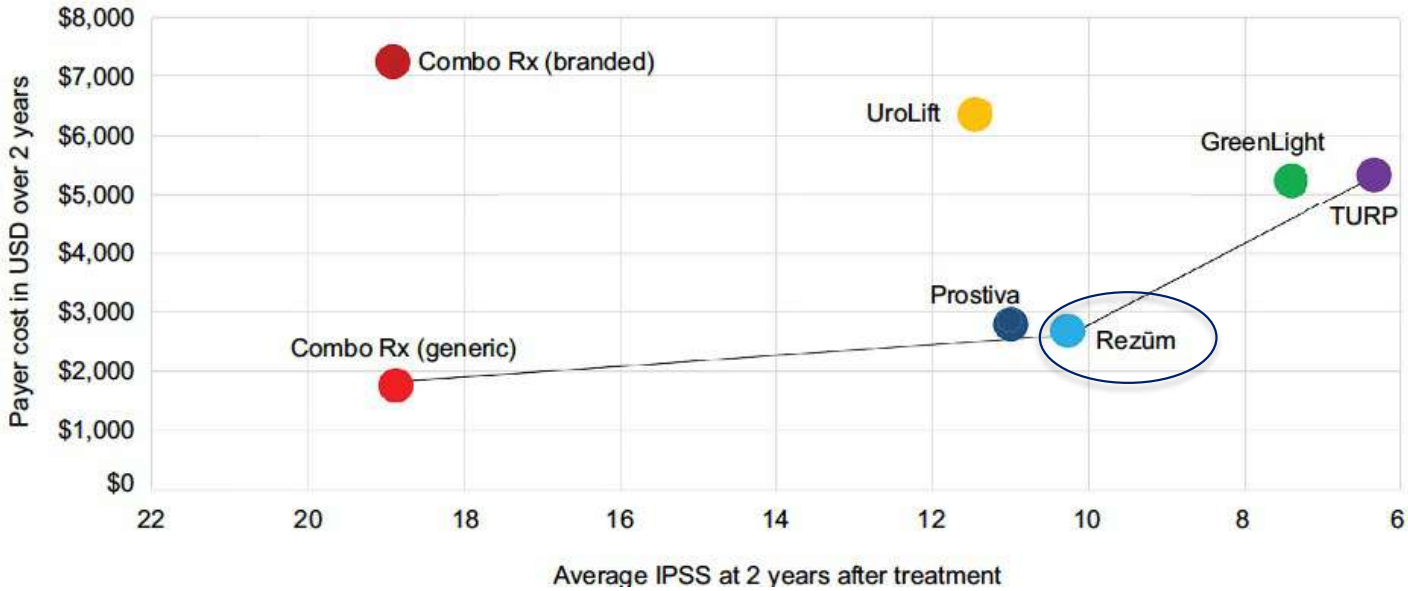
Handstuk

1600 euro (éénmalig gebruik)

Generator

30 000 euro

Kost

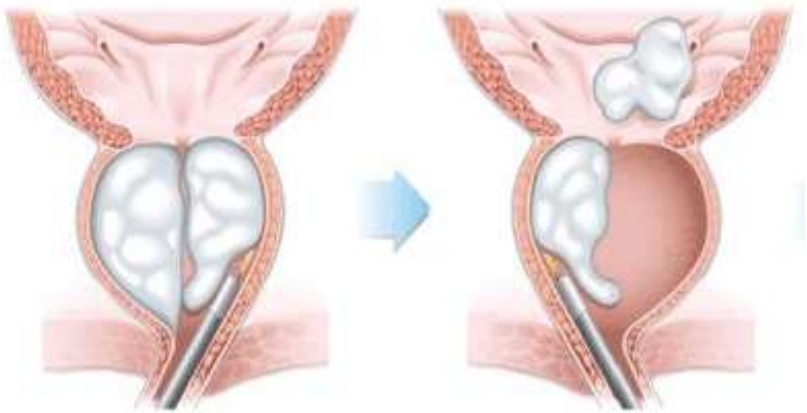


Ulchaker et al. ClinicoEcon 2018

HoLEP

Holmium Laser Enucleatie van de Prostaat

- prostaatweefsel wordt uitgesneden met laser
- efficiënte techniek met uitstekende lange termijn resultaten, met echter herstelperiode en risico op complicaties
- de nieuwe referentie in de behandeling van goedaardige prostaatvergroting



Rezum

- prostaatweefsel krimpt door toedienen van stoom
- lagere werkzaamheid dan TURP en HoLEP, echter nog minder invasief met minder risico's en neveneffecten
- Een nieuwe speler in de behandeling van plasklachten bij patiënten met

prostaatvolume tussen de 30 en 80g
postmictioneel residu < 250ml

Bedankt voor uw aandacht!

Vragen?

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