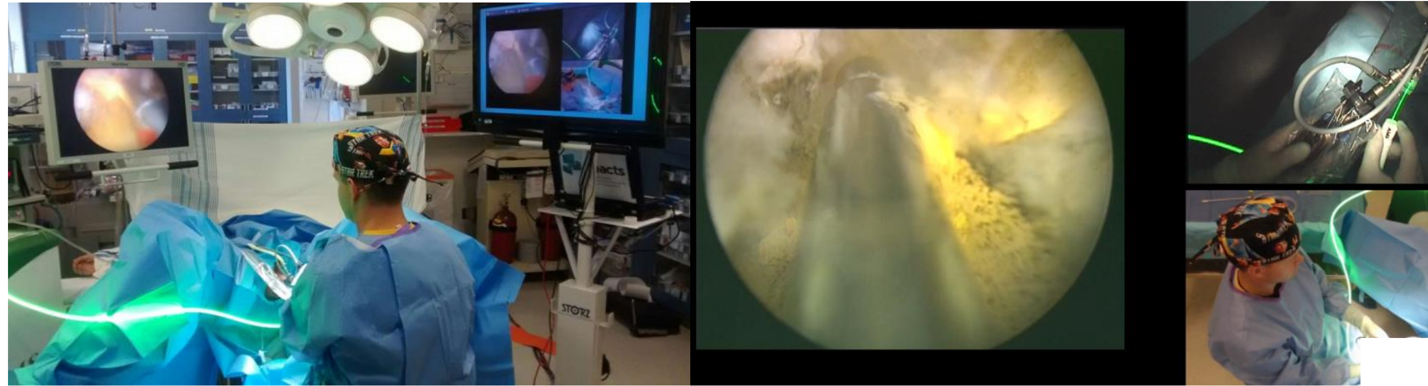
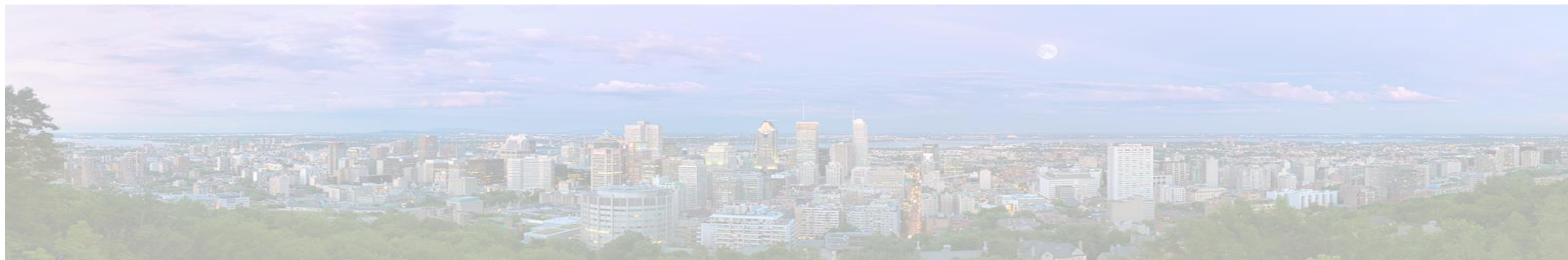
Educational Forum 6: Old, Anticoagulated and Can't Pee

TRIFECTA



Dr. Kevin C. Zorn, MD, FACS, FRCSC
Associate Professor of Urology
Director of Robotic Urology
University of Montreal Hospital Center (CHUM)



PANEL SPEAKERS

Dr. Steven A. Kaplan

Dr. Mitchell R. Humphreys

Dr. Dean S. Elterman

Dr. J. Paul Whalen

Braley-Gordan Chair of Urology

Royal Jubilee Hospital in Victoria, BC

DISCLOSURES

- Dr. Kevin Zorn
  - Proctor/lecturer/consultant
    - BSCI – Greenlight, REZUM
    - Procept BioRobotics – Aquablation
- Dr. Mitch Humphreys
  - No financial disclosures
    - Fellowship supported by Cook Medical, BSCI
    - Research supported by Olympus, Storz, Procept
- Dr. Steven Kaplan
  - PI for PLUS study – Astellas
- Dr. Dean Elterman
  - Consultant for:
    - Astellas, BSCI, Pfizer, Procept, Ferring, Meditate

BPH

Life Expectancy by Age in England and Wales, 1700-2013

Shown is the total life expectancy given that a person reached a certain age.

Life expectancy
85
80
75
70
65
60
55
50
45
40
35
30
25
Life expectancy for a 70-year old
Life expectancy for a 60-year old
Life expectancy for a 50-year old
Life expectancy for a 40-year old
Life expectancy for a 30-year old
Life expectancy for a 20-year old
Life expectancy for a 10-year old
Life expectancy for a 5-year old
Life expectancy for a 1-year old
Life expectancy at birth
1750
1800
1850
1900
1950
2000

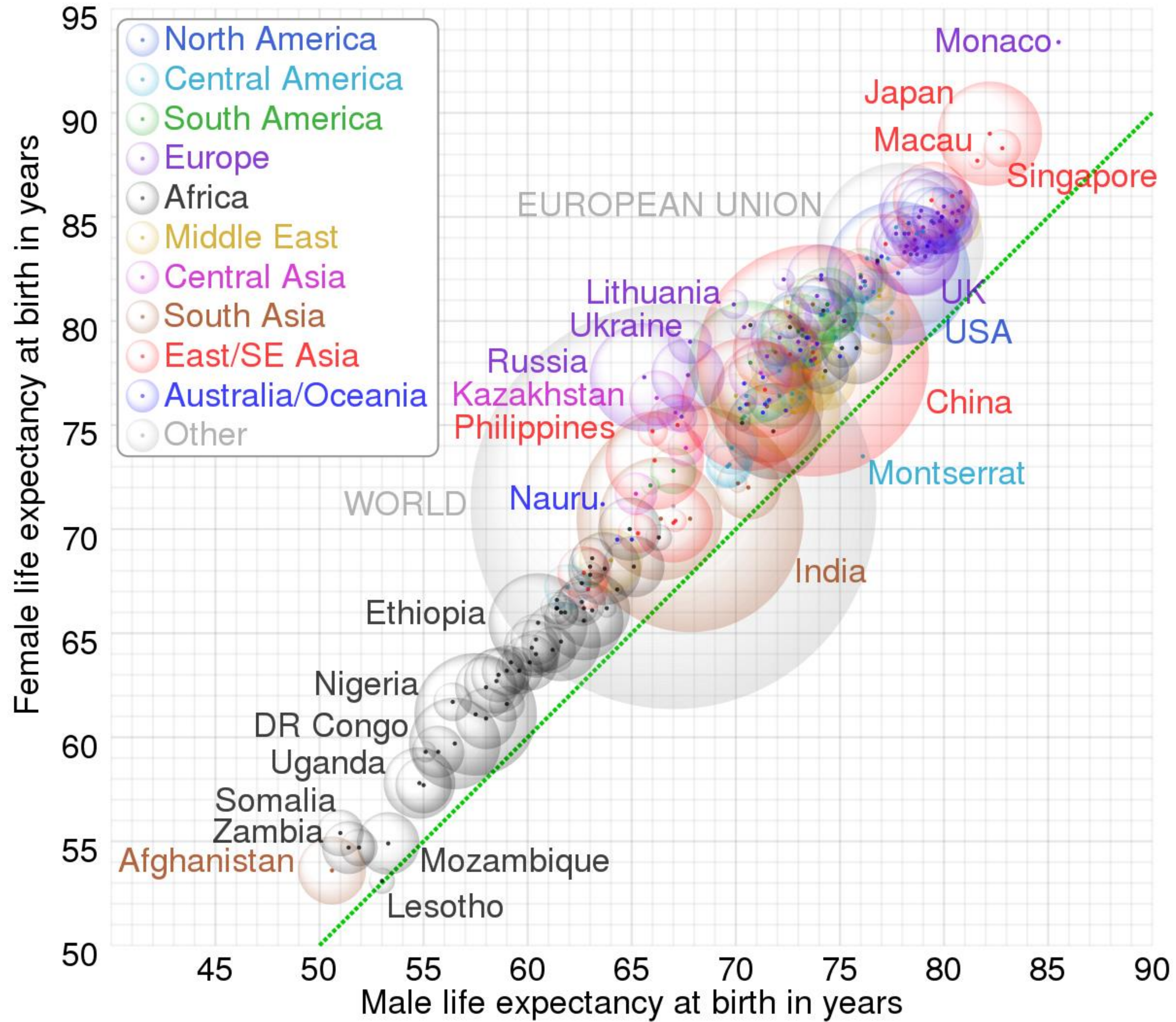
Data source: Life expectancy at birth Clio-Infra. Data on life expectany at age 1 and older from the Human Mortality Database (www.mortality.org).
The interactive data visualization is available at OurWorldinData.org. There you find the raw data and more visualizations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

Global Average Life Expectancy more than doubled since 1900

The data for life expectancy by age is taken from the Human Mortality Database. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany). Available at www.mortality.org (data downloaded on 15 April 2017).

BPH



"CIA – The World Factbook Life Expectancy At Birth". Cia.gov. Retrieved 2017-06-03.

BPH

6/2019
7.7 billion

The Big Surprise: Africa
A large, unanticipated rise in Africa's future population accounts for almost the entire increase in the 2100 global projection. Data from 2010 censuses and subsequent surveys show that African fertility rates remain higher than predicted, and death rates from AIDS have eased, thanks to better treatment. The population of Asia (*green*) will be slightly higher; that of Latin America (*orange*) will be lower.

Solid lines: U.N. 2014 projections

Dotted lines: International Institute for Applied Systems Analysis 2001 projections

Total Population (billions)

World (new projection)
World (old projection)
Dark tints: 80% probability range
Light tints: 95% probability range
Median
Asia
Africa (new projection)
Africa (old projection)
Europe
Latin America and the Caribbean
North America

13
12
11
10
9
8
7
6
5
4
3
2
1
0

2000
2050
2100

BPH Treatment Options

- Medications
  - α-blockers
  - 5ARI
  - Cialis 5
- Surgery
  - TURP (mono/bipol)
  - Laser (GL-PVP, Holmium, Thulium)
  - Enucleation + Morcellation (EEP)
  - Retropubic Prostatectomy (Open, Robotic)
  - Aquablation
- MIST
  - Urolift
  - REZUM

MORE TO COME....

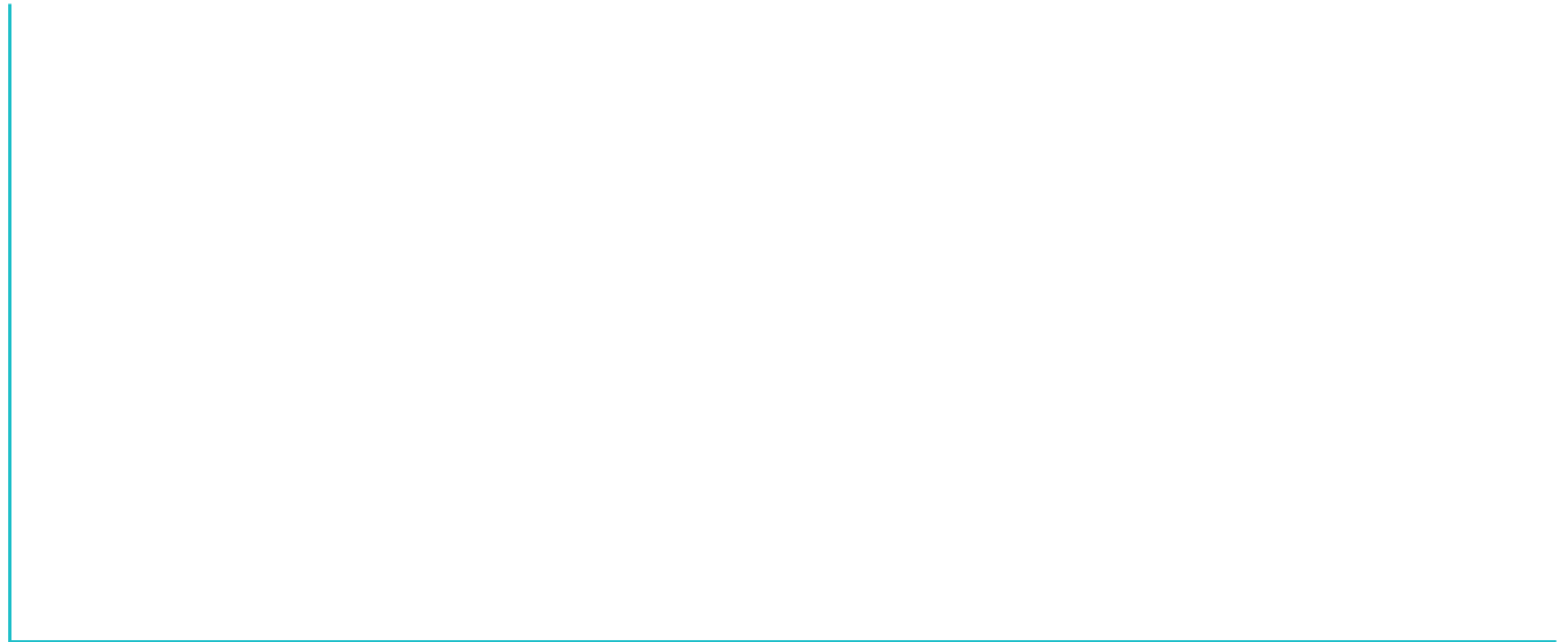
1. Prior to BPH surgical care/counselling in your practice, do you routinely perform:

- cystoscopy
- prostate ultrasound
- both cystoscopy and prostate ultrasound
- DRE only

Start the presentation to see live content. Still no live content? Install the app or get help at **PollEv.com/app**

Total Results

1. Prior to BPH surgical care/counselling in your practice, do you routinely perform:



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1. Prior to BPH surgical care/counselling in your practice, do you routinely perform:

cystoscopy

prostate ultrasound

both cystoscopy and prostate ultrasound

DRE only

Canadian Urological Association guideline on male lower urinary tract symptoms/benign prostatic hyperplasia (MLUTS/BPH): 2018 update

J. Curtis Nickel, MD[1]; Lorne Aaron, MD[2]; Jack Barkin, MD[3]; Dean Elterman, MD[4]; Mahmoud Nachabé, MD[2]; Kevin C. Zorn, MD[5]

Male LUTS:
-With absolute indications for BPH surgery
or
-Those who do not want medical treatment but request active treatment

Medical risk → LOW / HIGH

HIGH → Fit to undergo anesthesia? → YES / NO

YES → **Able to discontinue antiplatelet/ anticoagulation medication** → YES / NO

LOW → Prostate volume; YES → Prostate volume

Prostate volume:

- <30 cc:
  - **TUIP***
  - M/B-TURP
  - Urolift**
- 30–80 cc:
  - **M/B-TURP***
  - Greenlight PVP
  - HoLEP
  - BPKVP
  - Thulium laser vaporization
  - Diode laser vaporization
  - Urolift**
  - Rezum
  - TUMT**
  - Aquablation
- >80 cc:
  - **OSP***
  - HoLEP
  - Greenlight PVP
  - Thulium laser vaporization/ enucleation
  - B-TURP
  - Aquablation

Able to discontinue antiplatelet/anticoagulation medication – NO:
- **Greenlight PVP***
- HoLEP
- Thulium laser vaporization/ enucleation

Fit to undergo anesthesia – NO:
- TUMT**
- Urolift**
- Rezum
- Urethral stent

Preoperative testing: Determination of prostate size and extent of median lobe are related to procedure-specific indications (see section on Surgical Treatment). Cystoscopy should be performed to evaluate prostate size, as well as presence or absence of significant middle/median lobe. Ultrasound (US) (either by transrectal ultrasound [TRUS] or transabdominal US) is recommended if further information in regard to size of prostate and extent of median lobe presence is required when choosing modality of surgical therapy.

American Urological Association

2. Clinicians should consider assessment of prostate size and shape via abdominal or transrectal ultrasound, or cystoscopy, or by preexisting cross- sectional imaging (i.e. magnetic resonance imaging [MRI]/ computed tomography [CT]) prior to surgical intervention for LUTS attributed to BPH. (Clinical Principle)

Table 1 – Level of evidence and grade of recommendation for the assessment of non-neurogenic male lower urinary tract symptoms

Assessment tool	LE	GR
When considering surgical treatment, imaging of the prostate (either by TRUS or abdominal US) *should* be performed	3	B
Urethrocystoscopy *should* be performed in men with LUTS to exclude suspected bladder or urethral pathology and/or before minimally invasive/surgical therapies if the findings may change treatment	3	B

Can Urol Assoc J 2018;12(10):303-12. http://dx.doi.org/10.5489/cuaj.5616

clarius

WIRELESS HANDHELD ULTRASOUND IN UROLOGY

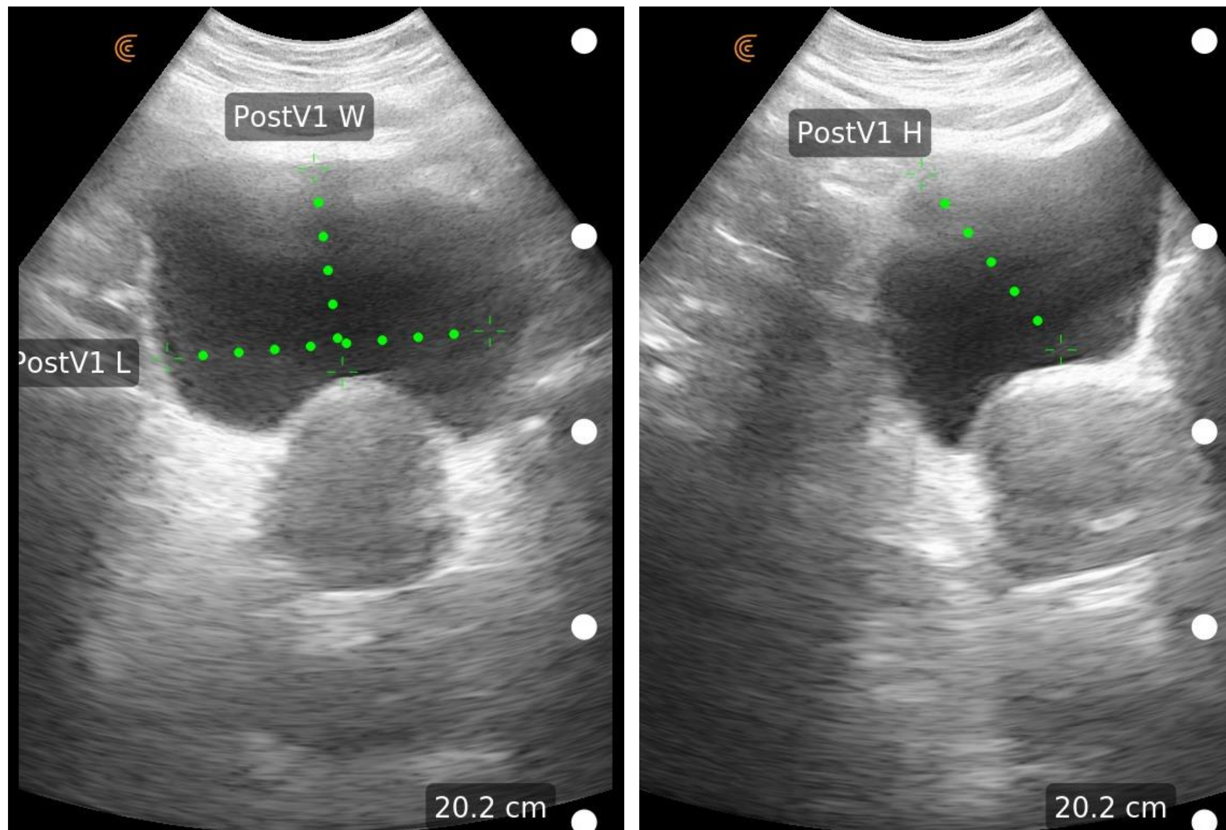
Dr Kevin Zorn, FACS, FRCSC

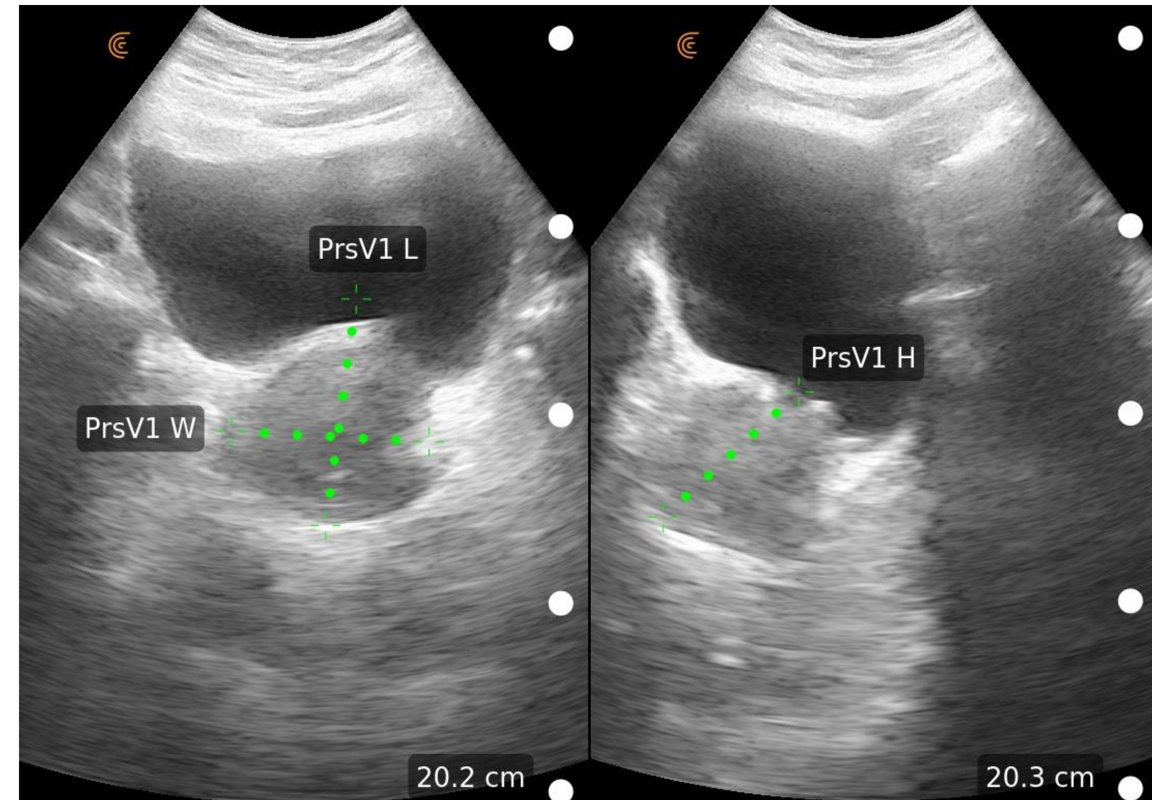
Associate Professor

University of Montreal Hospital Center (CHUM)

EVALUATION OF BPH and BLADDER EMPTYING

Clarius

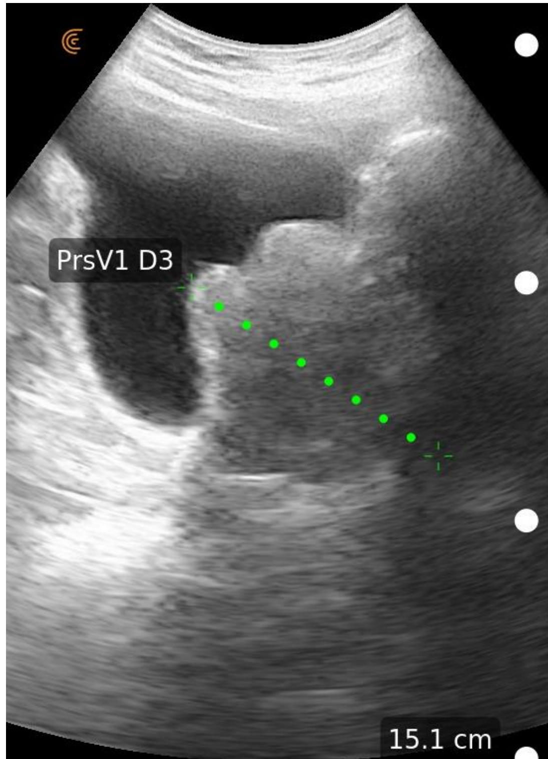


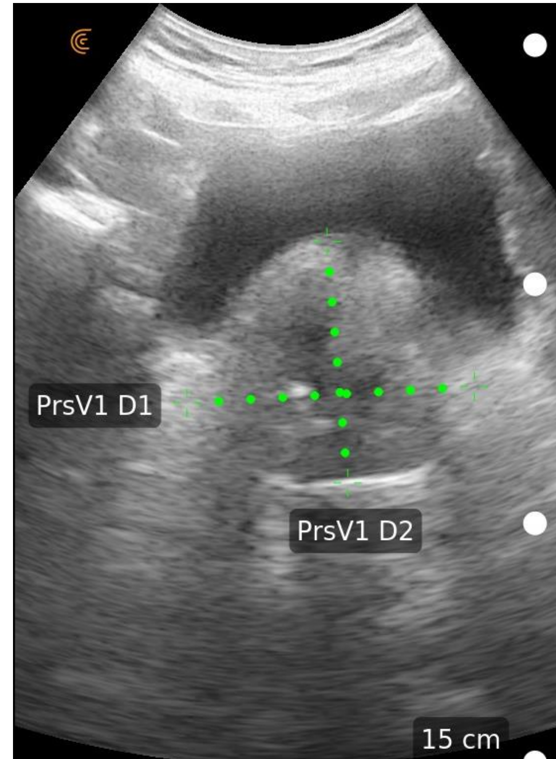


PVR = 155 cc

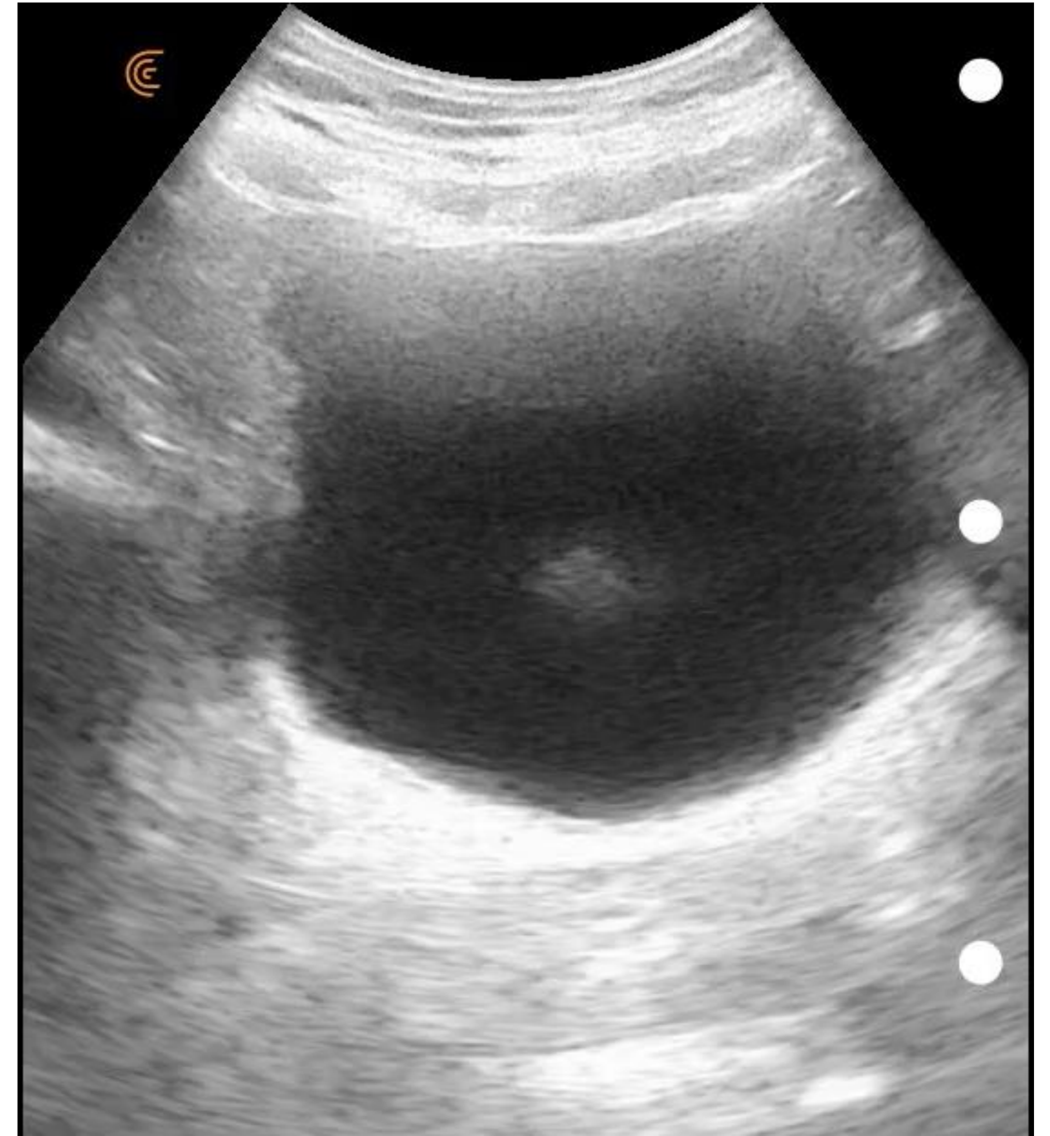
Prostate Volume = 65cc

PREOPERATIVE EVALAUTION OF BPH

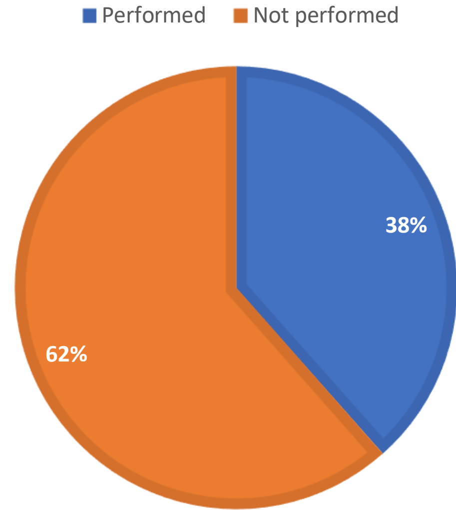


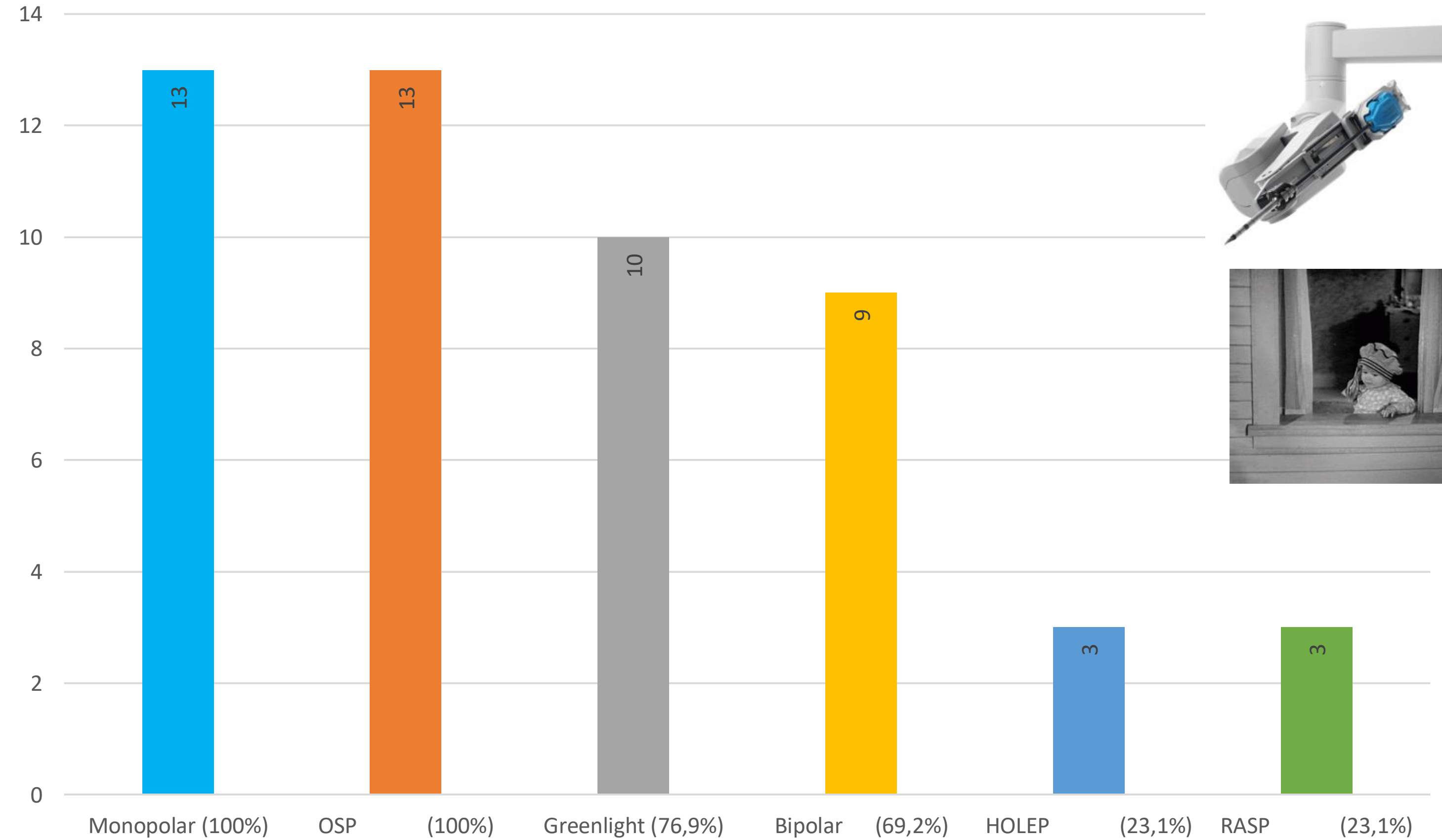


Prostate Volume = 130cc



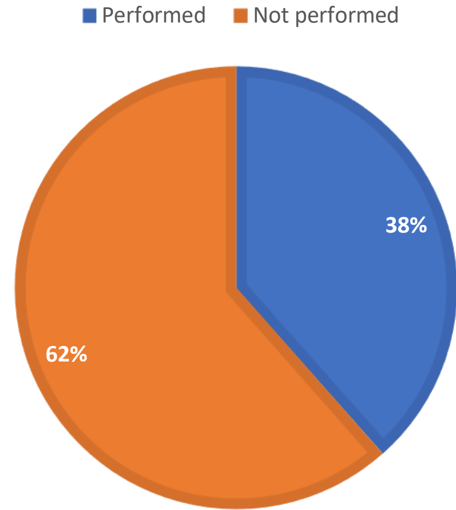
Canadian Discordance in Training





Canadian Discordance in Training

PRE-OPERATIVE TRANSRECTAL ULTRASOUND



Number of open simple prostatectomy performed per year

4.7 OSP / year

Mean
Manitoba
Ottawa
Laval
McMaster
Dalhousie
UBC
Queen's
Toronto
Montréal
McGill
Western
Sherbrooke
Edmonton

0 2 4 6 8 10 12

Canadian Discordance in Access and Reimbursement

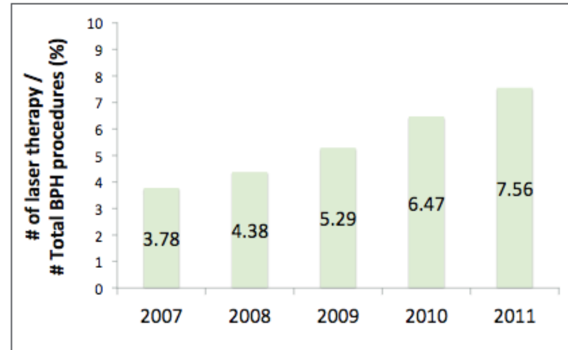


Fig. 2. Number of laser procedures performed in Canada for benign prostatic hyperplasia (BPH).

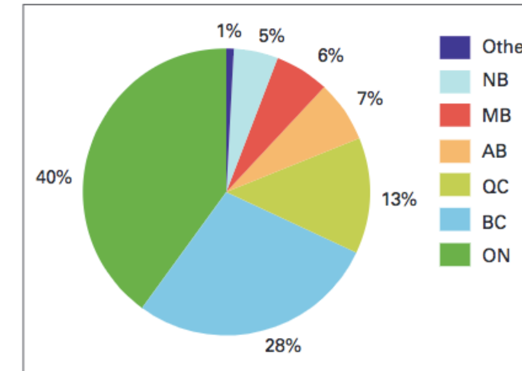


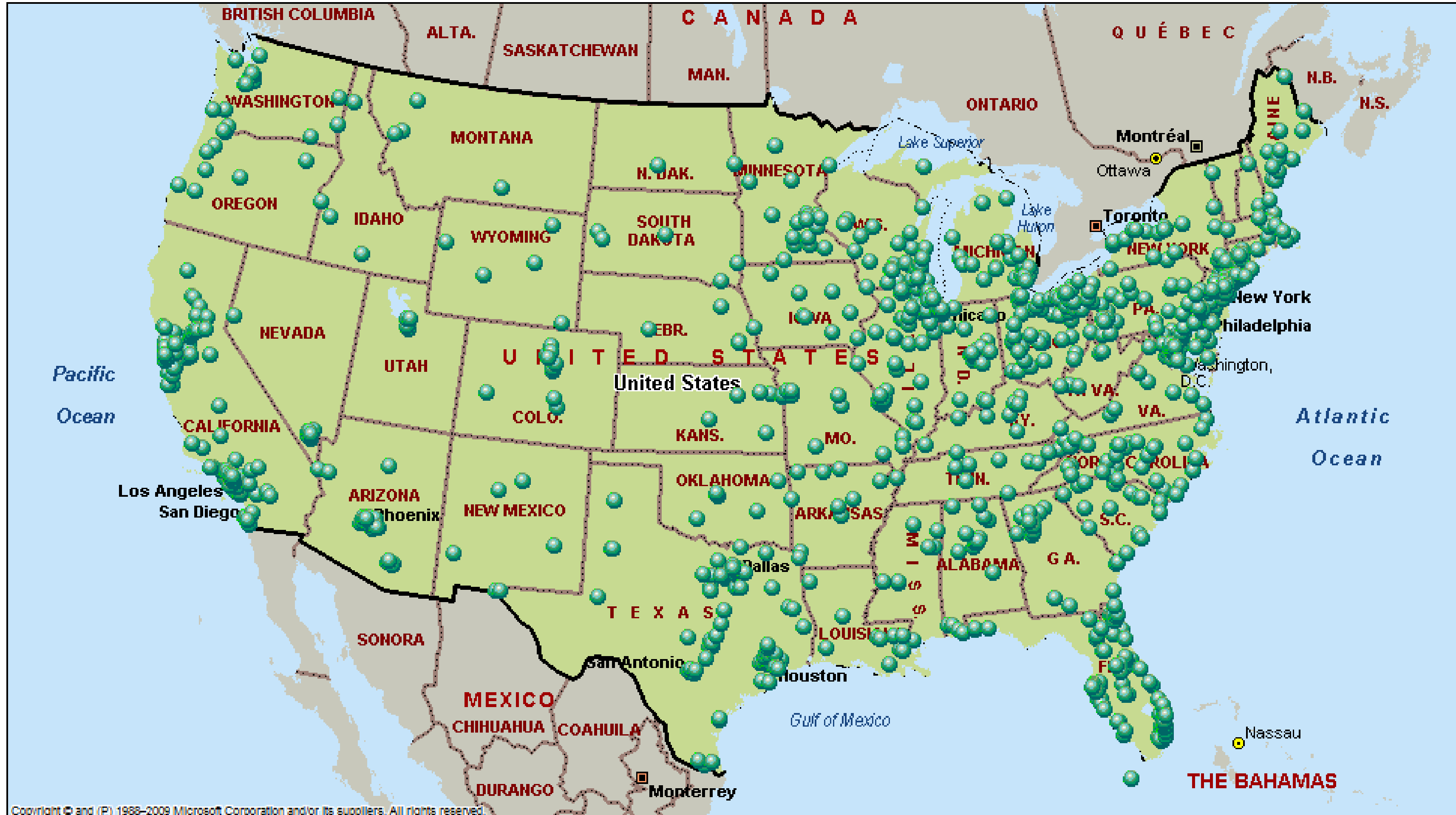
Table 2. National TURP and laser reimbursement codes for urologists for 2010

2010	AB	BC	MB	NB	NL	NS	ON	PEI	QC	SK
TURP										
Code	72.1A	8311	4321	1394	97640	72.1B	S655	8584	6247	123R
Fee (CAN$)	*488.5*	*465.2*	*512.7*	*394*	*514.6*	*540*	*450*	*514.6*	*394*	*586*
Laser										
Exception Code Fee (CAN$)	PVP 72.1C 659.48	HoLEP >60 g PS81311 930.4	Idem	Idem	Idem	Idem	Idem	Idem	All laser 6239 363	Idem

TURP: transurethral resection of the prostate; HoLEP: holmium enucleation of the prostate; AB: Alberta; BC: British Columbia; MB: Manitoba; NB: New Brunswick; NL: Newfoundland; NS: Nova Scotia; ON: Ontario; PEI: Prince Edward Island; QC: Quebec; SK: Saskatchewan.

Hueber PA, Zorn KC. CUAJ 2013

Canadian Geographic Discordance to Access



US GreenLight Console Access

2721 active XPS acounts

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Canadian Geographic Discordance to Access

Canada GreenLight Console Install Base

	XPS
AB	4
BC	22
NB	3
NL	3
ON	25
QC	10
SK	3

60 active XPS acounts

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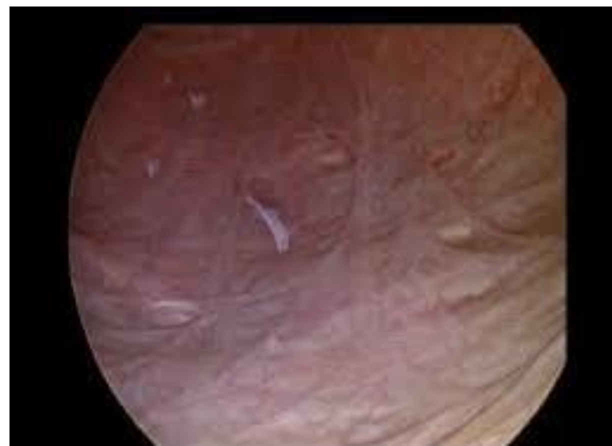
CASE STUDY 1

- Mr. JMV
- 89 years old
- PMHx:
    - Orchidopexy
    - CAD with stents 2004, 2009, 2012
    - Cardiac valve 2014 → Pradaxa
    - Pacemaker 2015
    - DM
    - DLP
- INDWELLING FOLEY x <u>1 year</u>

CASE STUDY 1

- Mr. JMV

- 89 years old
- Qmax =3
- VV = 45
- PVR =455
- Cysto:

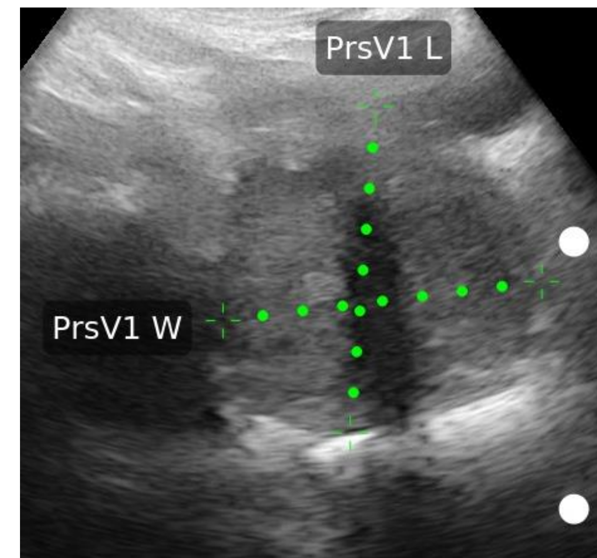


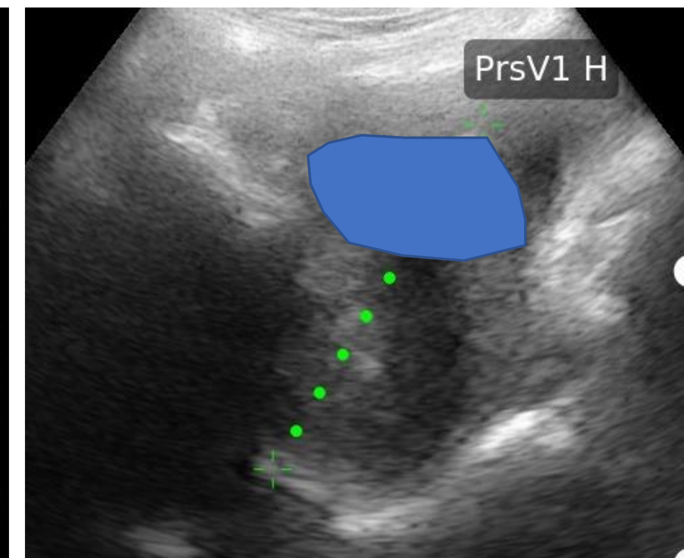
TRUS Imaging

Output	Value
Prostate 1 Volume (1)	132.4 cc

Calculations

Label	Value
PrsV1 L (1)	6.126 cm
PrsV1 W (1)	5.998 cm
PrsV1 H (1)	6.882 cm





2. Given this complex BPH patient, how would you treat such a gentleman at your center?

- Hold/Bridge ACO and perform TURP (mono / bipolar)
- Perform Greenlight PVP
- Perform HOLEP
- Refuse BPH surgery and recommend CIC/chronic Foley
- Refer to university center

Start the presentation to see live content. Still no live content? Install the app or get help at **PollEv.com/app**

Total Results

2. Given this complex BPH patient, how would you treat such a gentleman at your center?

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Perform Greenlight PVP

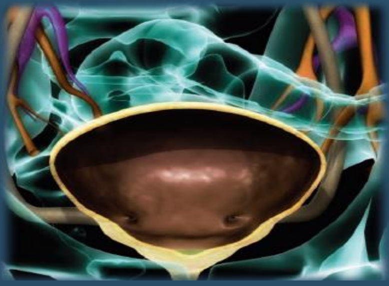
Perform HOLEP

Refuse BPH surgery and recommend CIC/chronic Foley

Refer to university center

CUA – BPH Case1a

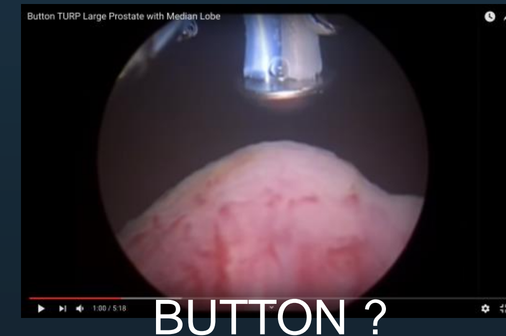
- 1) **Urodynamics**
  - assess detrusor contractility, detrusor underactivity is concern
- 2) **Choice would be PVP (GreenLight)**
  - Hemostatic (Power 80-140W)
  - Able to operate on large gland
  - Ablative surgery to remove tissue



Case 1

- **Not the healthiest dude**
- **PV 120 with middle lobe**
  - **Middle Lobe Only – bTURP**

Ejaculation Preserving Middle Lobe Only Transurethral Resection of the Prostate: 12 Year Experience
-(2005-2017), 312 consecutive been with IPP>1cm
- MSHQ ejaculation was preserved
-2.2%required a repeat TURP surgery
- 6% of men resuming medical therapy for BPH

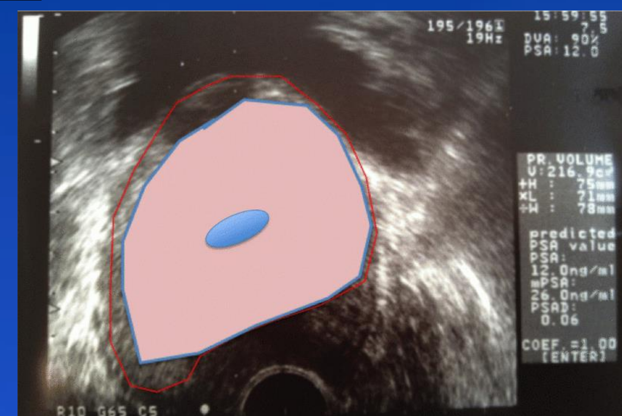


BUTTON ?

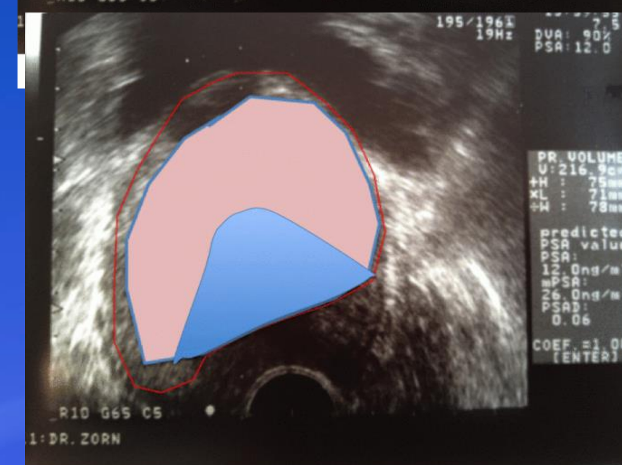
Case 1 Options

- SPANNER CATHETER

- HOLEP



- Median Lobe Only HOLEP



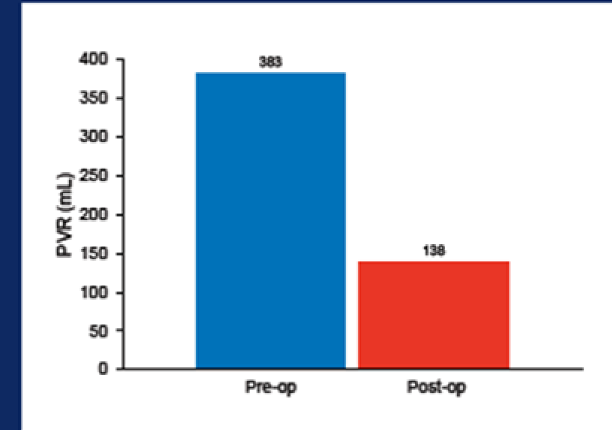
*Unpublished data

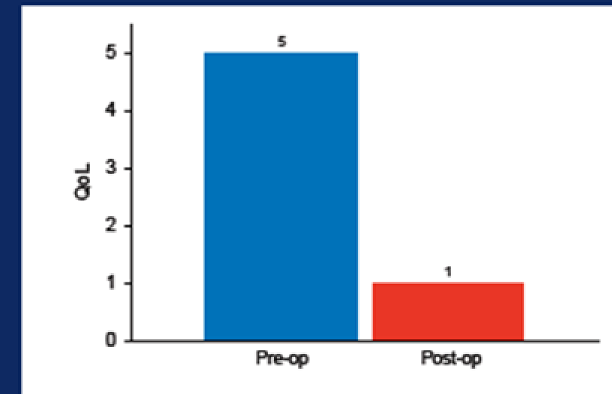
MAYO CLINIC

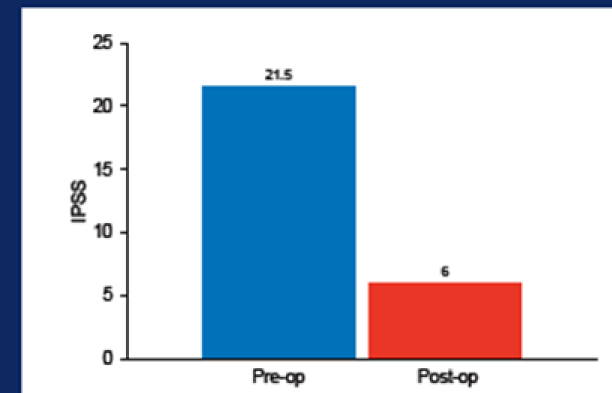
Median Lobe Only HoLEP

- Median lobe only
- 20 patients
  - Median Age 67
  - Mean Follow-up 18 months
- 3 month data
- To date only 4 patients (20%)

→additional treatment







*Unpublished data

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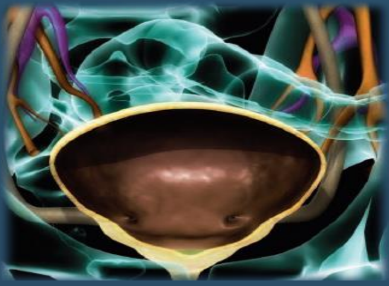
How would you manage ACO?

- Difference between:
  - ASA
  - COUMADIN
  - DIRECT ORAL ANTICOAGULANTS (DOACS)
    - apixaban (Eliquis®) ➔ andexanet alfa (AndexXa®)
    - betrixaban (BevyxXa®)
    - dabigatran (Pradaxa®)
    - edoxaban (Savaysa®)
    - rivaroxaban (Xarelto®) ➔ andexanet alfa (AndexXa®)

How would your management / options differ if this patient's prostate volume was **60cc?**

CUA – BPH Cases

- Case 1b – PrVol 60mL
- 1) Urodynamics
- 2) Smaller gland, age and comorbidities consider a MIST (UroLift or Rezum), enough to get him voiding
- PVP still has highest likelihood of success
  - Balance risks of surgery vs MIST



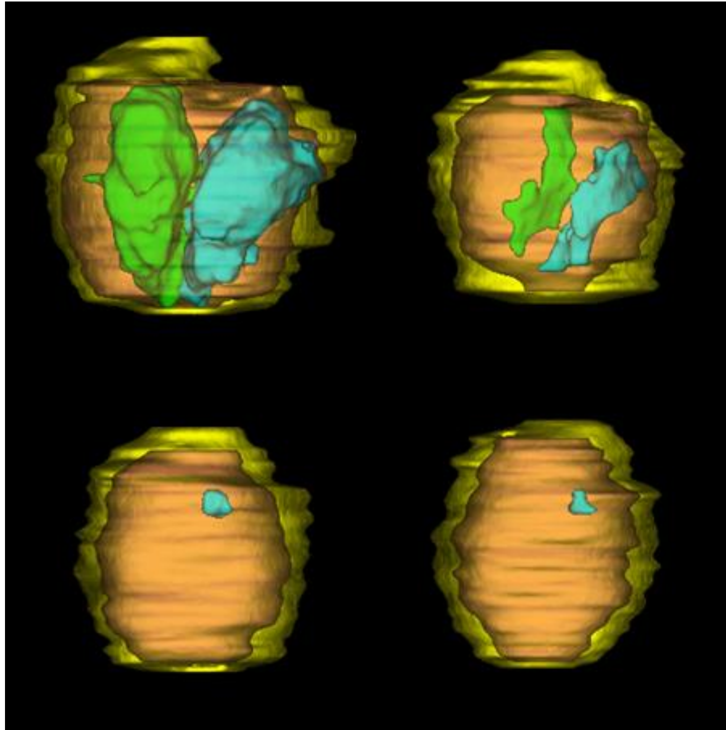
Case 1b

- PV 60
  - MLO – TURP
  - Rezum

rezūm®

powered by
Convective WAter Vapor Energy (WAVE)®

Significant Lesion Creation/Resolution and Volume Reduction[7]



6-Month Measurements vs. 1 Week	
Lesion resolution	99.5%
Transition zone volume reduction	-52.7%
Prostate volume reduction	-46.2%

Entire Study Group

	Time	N	Mean (cm^3)	Mean (cm^3)	
Lesion Volume	1 Week	59	8.5		
	1 Month	57	3.5	-5.0	-58.8%
	3 Months	55	0.7	-7.8	-91.8%
	6 Months	54	0.3	-8.2	-96.5%
Transition Zone Volume	1 Week	59	40.1		
	1 Month	57	33.1	-7.0	-17.5%
	3 Months	55	28.0	-12.1	-30.2%
	6 Months	54	24.8	-15.3	-38.2%
Prostate Volume	1 Week	59	67.8		
	1 Month	57	58.5	-9.3	-13.7%
	3 Months	55	51.7	-16.1	-23.7%
	6 Months	54	47.2	-20.6	-30.4%

This study includes parameters outside of the US cleared indication

UroPH-620208-AA 03/19

Case 1b Options

- Median Lobe Only HOLEP (n~10-15/yr)
- HOLEP (depends on Pdet - UDS)

- ALTERNATIVES
  - REZUM
  - SUPRAPUBIC FOLEY (option)

MAYO CLINIC

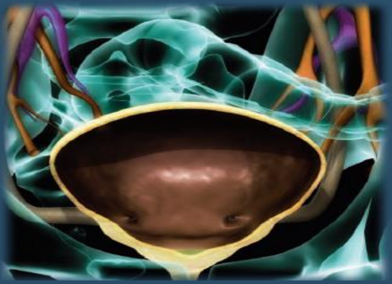
*Unpublished data

How would your management / options differ if this patient’s prostate volume was **250cc?**

CUA – BPH Cases

- Case 1c – PrVol 250mL
- 1) Urodynamics
- 2) PVP is best option for VERY large gland
  - No time limit, under long acting spinal
  - Lowest risk of bleeding

  3) If available, might consider PAE (frail elderly)



Case 1c

- PV 250
  - PAE
  - Then, whatever

Case 1c Options

- HOLEP

- Can consider **PAE** –but my experience HIGH failure rate (60%)
    - ++ OR time
    - ++ Contrast
    - ++ Cost. (1400 vs. 2600. €)
    - ++++ RADIATION

1 PAE =

5-10 Abdo-pelvic CT
-586 CXR
-4.4. Barium Swallow
-8.8 VCUG

- EXPERIMENTAL therapy in all guidelines

*Unpublished data

MAYO CLINIC

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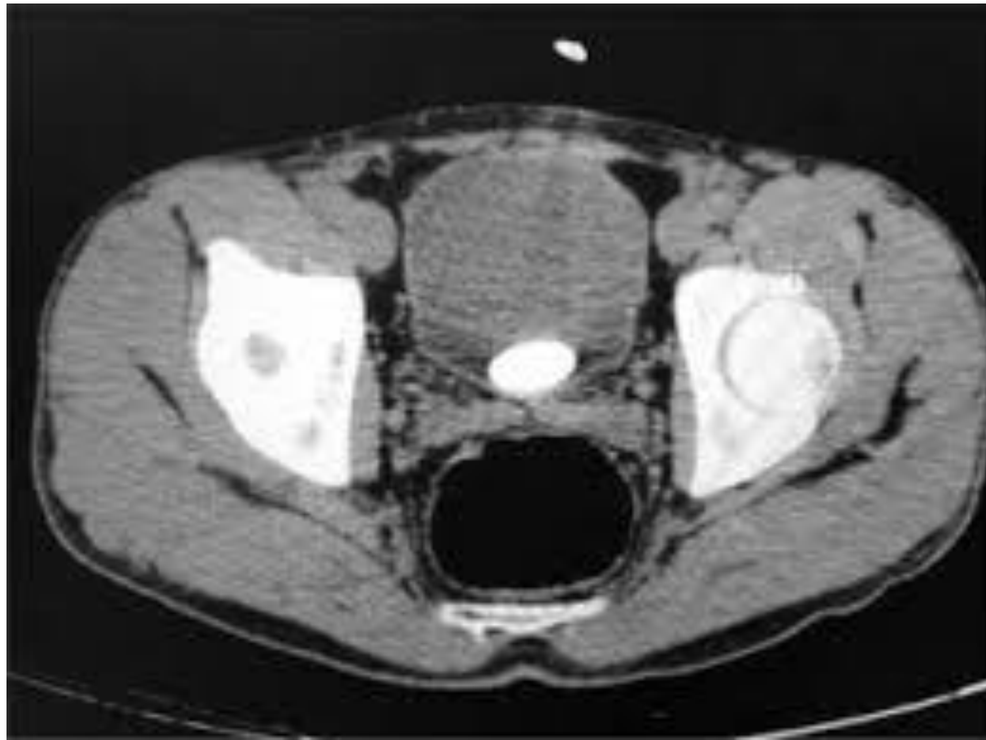
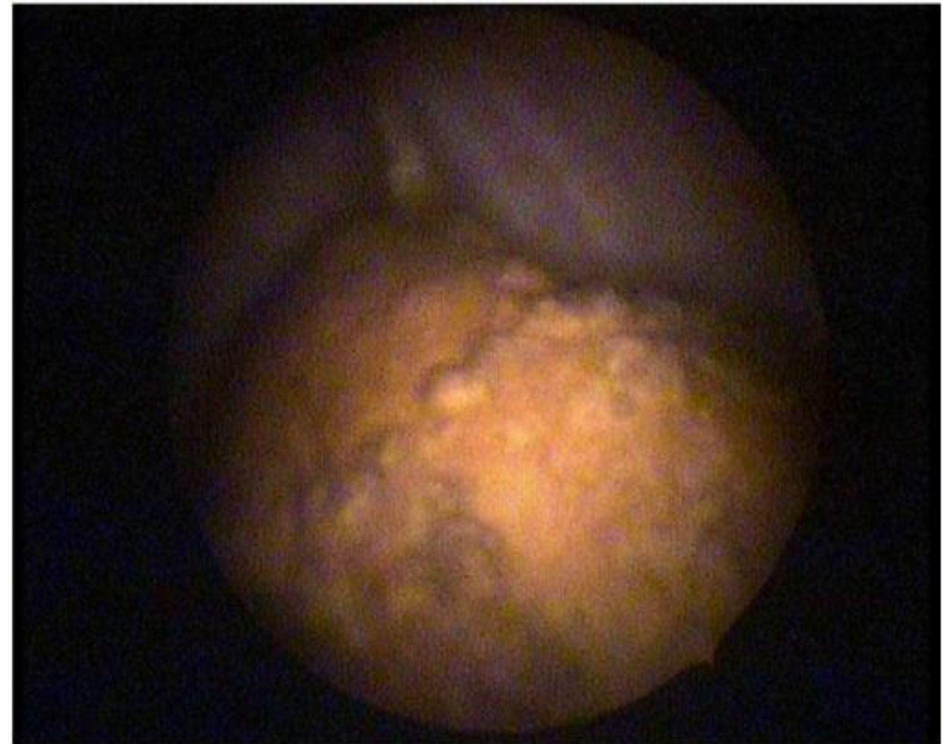
How would your management / options differ if this patient had a <u>**large 2x3cm bladder stone?**</u>

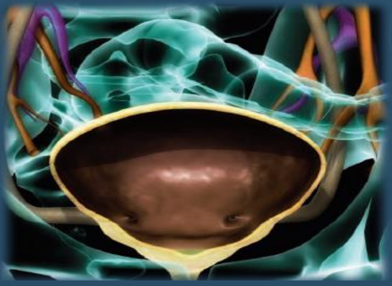




CUA – BPH Cases

- Case 1d – 120PV but bladder Stone
- 1) Holmium laser cystolithopaxy
- 2) GreenLight PVP

- Same seating can remove stone and adenoma, outpatient, can stay on blood thinner



Case 1d

- PV 120 with middle lobe
  - MLO – TURP
- Stone changes little

Case 1d Options

- HOLEP

- CYSTOLITHOPAXY <u>FIRST</u>

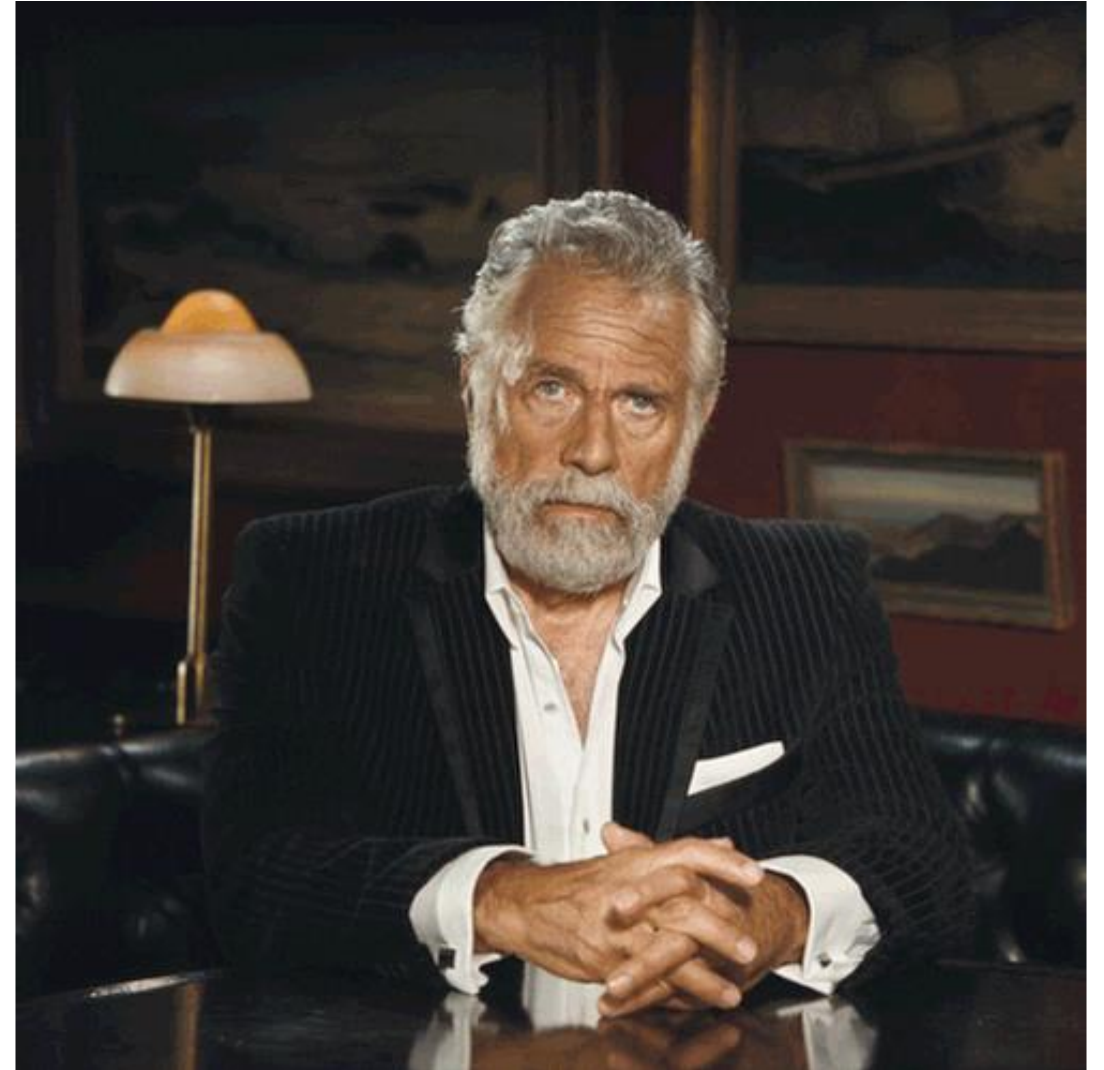
OFFSET NEPHRSCOPE

*Unpublished data

MAYO CLINIC

CASE STUDY 2

- Mr. DE
- 62 years old
- PMHx:
  - HTN
  - GERD
  - BPH
    - DUAL THERAPY x 5 years
      - (AVODART/FLOMAX)
- **NO ACO**



CASE STUDY 2

- Mr. DE

- 62 years old
- IPSS=20.   QOL=5
- Qmax =6
- VV=150cc. PVR= 225cc

- **Prostate Volume TRUS =80cc**

3. Given this index BPH patient, how would you treat such a gentleman at your center?

- Perform TURP (mono / bipolar)
- Perform Greenlight PVP
- Perform HOLEP
- Open/Robotic RP
- MIST (REZUM/UROLIFT)

Start the presentation to see live content. Still no live content? Install the app or get help at **PollEv.com/app**

Total Results

3. Given this index BPH patient, how would you treat such a gentleman at your center?

Perform TURP (mono / bipolar)

Perform Greenlight PVP

Perform HOLEP

Open/Robotic RP

MIST (REZUM/UROLIFT)

Start the presentation to see live content. Still no live content? Install the app or get help at **PollEv.com/app**

3. Given this index BPH patient, how would you treat such a gentleman at your center?

Perform TURP (mono / bipolar)

Perform Greenlight PVP

Perform HOLEP

Open/Robotic RP

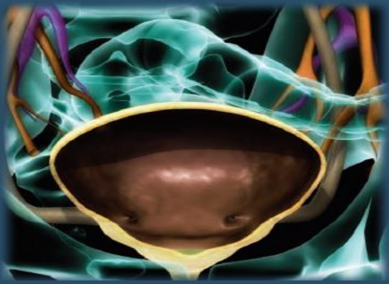
MIST (REZUM/UROLIFT)

Start the presentation to see live content. Still no live content? Install the app or get help at **PollEv.com/app**

CUA – BPH Cases

- Case 2a – 62M, 80mL, Dual Medical therapy
- 1) Assess priorities (off meds, preserve sexual function, improve symptoms)
- 2) Offer MIST (UroLift vs Rezum)
  - Consider median lobe
  - Retreatment rates (advantage Rezum)
  - Speed of recovery (slight advantage UroLift)

LETS SAY NO MIDDLE LOBE?

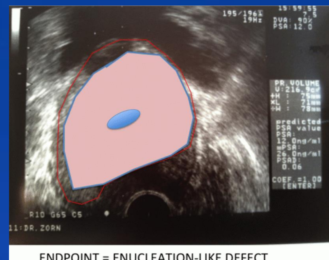


Case 2a

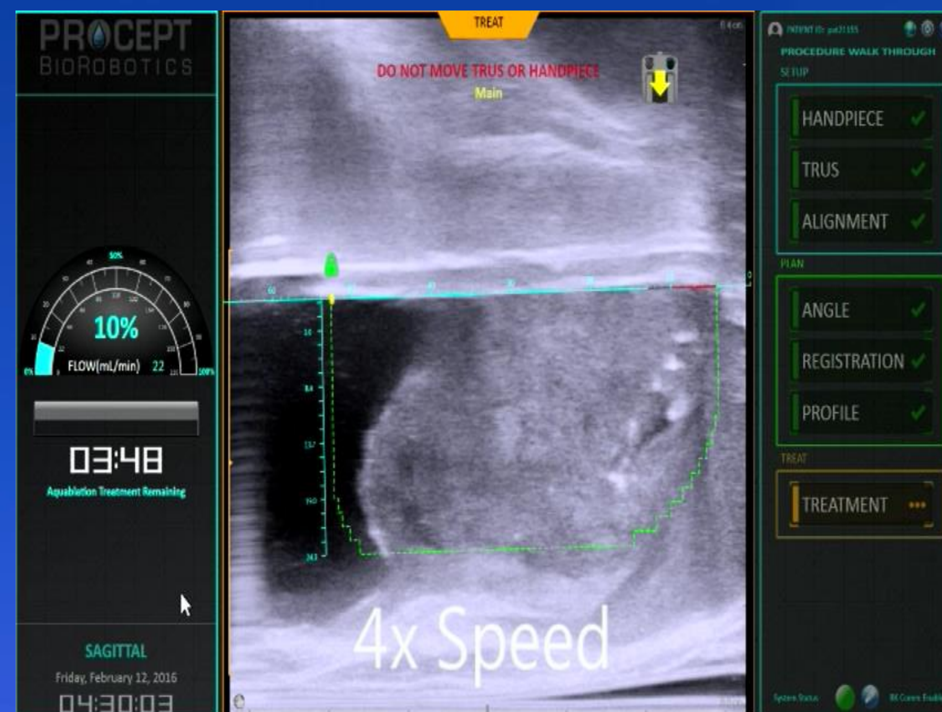
- Whatever! (US and Canada differ)

Case 2a Options

- HOLEP



- AQUABLATION



- MIST

*Unpublished data

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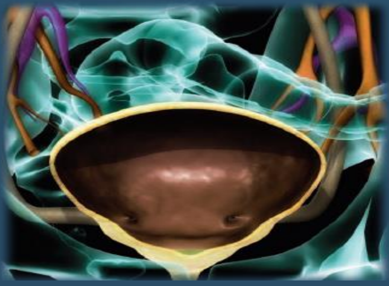
How would your management / options differ if this 80cc prostate patient was on **ACO?**

CUA – BPH Cases

- Case 2b – 62M, Pr Vol 80, Dual MRx, *ACO for Afib*
- 1) Assess priorities/values
- 2) Usually able to hold ACO – then offer all options MIST, PVP, Aquablation

UHN
Toronto General
Toronto Western
Princess Margaret
Toronto Rehab
COURAGE LIVES HERE

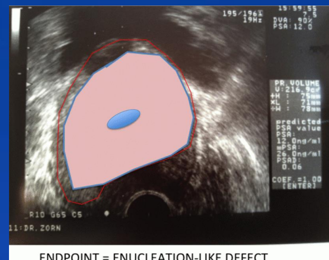


Case 2b

- Whatever! (US and Canada differ)
- ACO doesn't change battle plan

Case 2b Options

- HOLEP



- Continue ASA
- Coumadin drop INR<2.0

- PLAVIX and DOAC

*Unpublished data

How would your management / options differ if this 80cc prostate patient was remarried to younger partner and <u>**desires natural pregnancy**</u>?

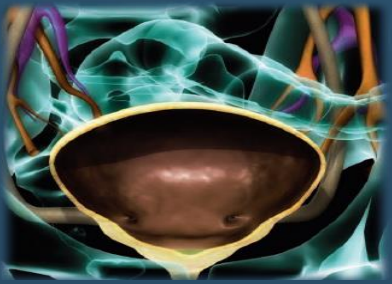
ANTEGRADE EJACULATION

CUA – BPH Cases

- Case 2b – 62M, 80mL, Dual MRx, *Fertility*

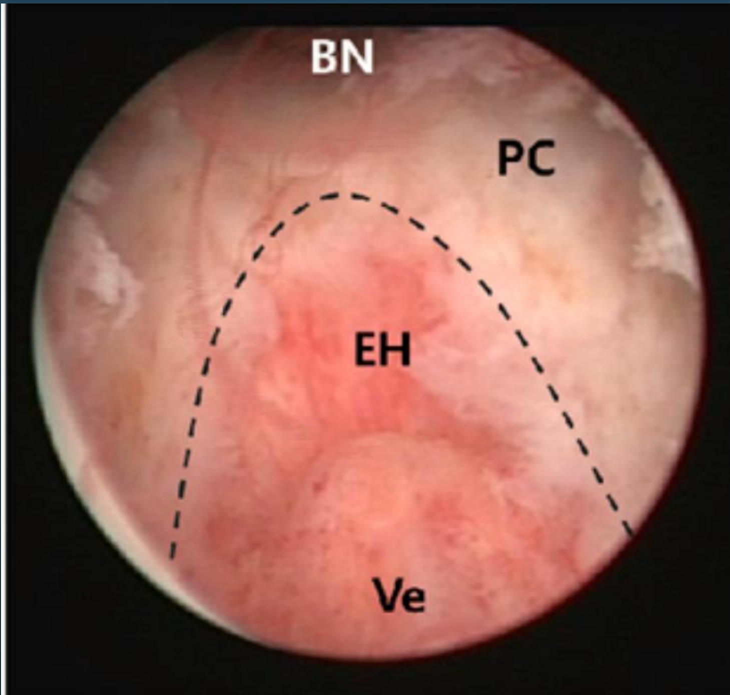
- 1) Urolift vs Rezum
  - Urolift has 0% risk retrograde ejaculation
  - Rezum has 0% risk retrograde ejaculation
  - (some reduced ejaculatory volume)
  - -Neither has risk of de novo ED

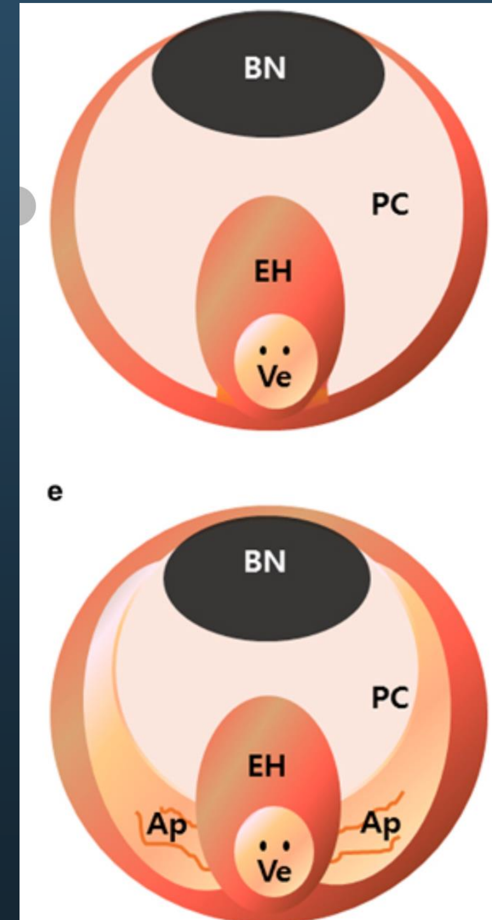
WHICH IS YOUR PREFERENCE?



Case 2

- Ah, yes,,,the younger partner
  - Keep apical tissue





Conventional

Apex sparing

Case 2a Options

- AQUABLATION

WHAT IS REPORTED RETROGRADE/ANEJACULATION RATE?

- MIST

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*Unpublished data

MANAGEMENT OF POST BPH SURGERY LUTS

Management of Lower Urinary Tract Symptoms Related to Benign Prostatic Hyperplasia in Real-life Practice in France: A Comprehensive Population Study

Bertrand Lukacs [a,*,†], *Jean-Nicolas Cornu* [a,b,†], *Mounir Aout* [c], *Natacha Tessier* [c], *Christophe Hodée* [d], *François Haab* [a], *Olivier Cussenot* [a], *Yvon Merlière* [e,f], *Véronique Moysan* [f,g], *Eric Vicaut* [c]

EUROPEAN UROLOGY 64 (2013) 493–501

OAB
NOCTURIA

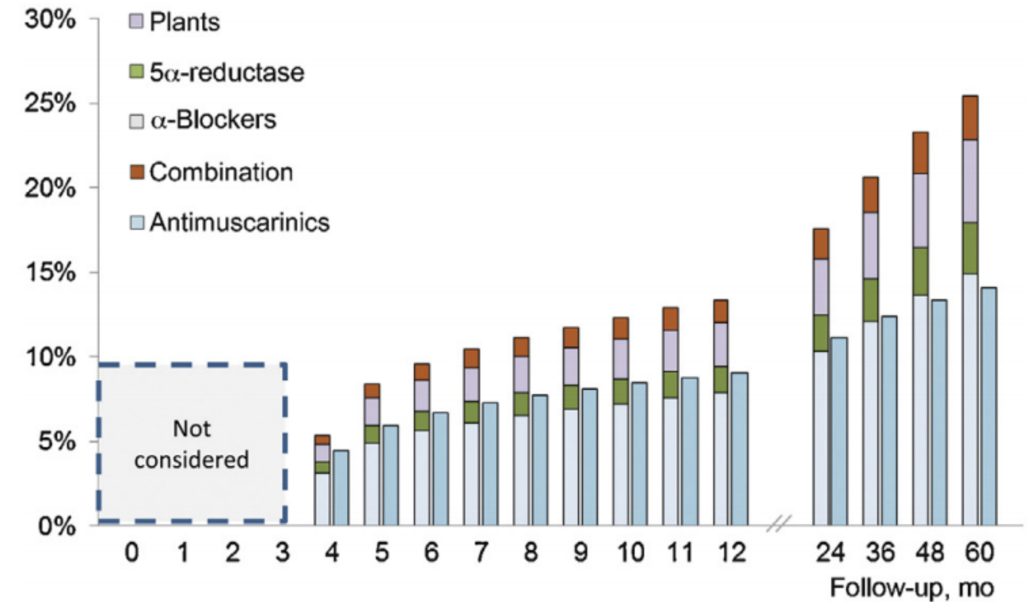

Fig. 7 – Cumulative incidence of medical treatment prescribed after surgical treatment. To avoid overestimating drug prescriptions after surgery, the first three postoperative months were not considered. The share of each treatment (α-blockers, 5α-reductase inhibitors, plants, or combination) was based on annual prescription volumes in patients with a history of surgical treatment of benign prostatic hyperplasia (Supplementary Table 3). Cumulative incidence is described monthly for the first year and yearly after 12 mo.

Management of Post-Operative LUTS

- ***OAB Symptoms (FUN)***
- 1) Majority are self-limited, give time
- 2) Prefer Anti-Muscarinic over B3 Agonist (prevent detrusor contractions)
- 3) Terrible frequency/dysuria is usually related to technique in PVP (too much charring)
  - Some give short course steroids or anti-inflammatory

Nocturia

- One of the most distressing sx for men (≥ 2 night)
- Associated with increased depression, increased falls and fractures, CHF, increased all cause mortality
- Low bladder volume or void
- Increased night time urine production
- Sleep disturbances
  - **50% of patients have OSA**

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Treatment

- Behavioral modification
- BPH medications
- Anticholinergics
- Self Catheterization (Hypotonic bladder postop)
- **Desmopressin**
  - Recommended for men < 65 yrs
  - Sublingual tablet, intranasal, oral tablet
  - Monitor sodium prior, 1 week after, 1 month after, and 3-7 days after each dose change
  - Associated with compensatory daytime diuresis.

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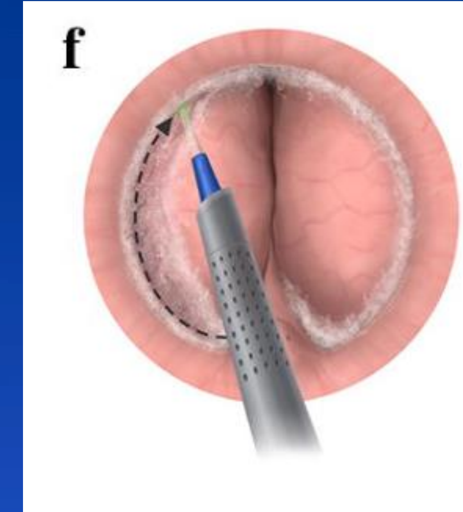
Technical Variations in SURGICAL TECHNIQUE to Minimize Functional Side Effects

- STRESS INCONTINENCE. (SUI)
- RETROGRADE EJACULATION
- BLADDER NECK CONTRACTURE (BNC)

Technical modification to minimize side effects

- **Stress Urinary Incontinence**
  - Preservation of the verumontanum
  - Preservation of the apical tissue
  - Description of an “apical pad”
  - Limit energy at the apex
  - “Top down” technique to limit stress on the membranous urethra



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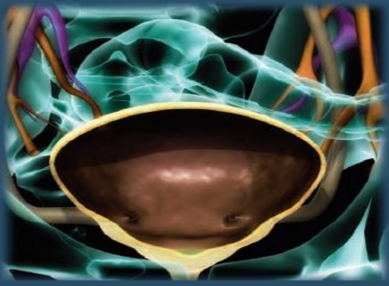
Technical Variations

- 1) **SUI** – demarcate veru at start of case
  - Be aware of EUS at all times
  - Understand forward angle EUS anteriorly
- 2) **Retrograde Ejac:**
  - Spare floor, colliculus seminalis, leave apical tissue as flap over ejac. ducts
- 3) **BNC**
  - low energy, don’t over cauterize
  - Higher risk in small prostate <30cc (TUIP)



How to Minimize Functional Adverse Events?

- Wide proximal resection
- Keep apex
- Remember anatomy

74th Annual Meeting
June 29 – July 1

74e Congrès annuel
29 juin – 1 juillet

QUÉBEC
2019

Educational Forum 6:
Old, Anticoagulated and Can’t Pee

TRIFECTA