

Interesting Case

R₁ Natirat Limprasert





Case Scenario

- ▶ **Case:** A Thai Male 66-year-old
- ▶ **Diagnosis:** BPH with acute urinary retention on F/C
- ▶ **Operation:** TURP



Case Scenario

- ▶ **Chief Complaint:**
แพทย์นัดมาผ่าตัดส่องกล้องทางเดินปัสสาวะ



Patient History

- ▶ **Chief Complaint:** แพทย์นัดมาผ่าตัดส่องกล้องทางเดินปัสสาวะ
- ▶ **Present Illness:** Known Case BPH with AUR with failed TWOC x II
S/P retained Foley's catheter เปลี่ยนทุก 1 เดือน
ปัสสาวะใน Urine bag สีดี ไม่มีตะกอน ไม่มีไข้ ไม่มีหนาวสั่น
ไม่มีปัสสาวะเป็นเลือด

Patient History



Underlying Disease

- ▶ Hypertension
- ▶ Diabetes mellitus with peripheral artery disease
 - ▶ S/P Rt. BK amputation (27/11/62)



Patient History

Underlying Disease (cont.)

- ▶ Hx of HFrEF (02/02/63) S/P CAG (05/09/62)
 - LMCA: free of stenosis
 - LAD: 30% stenosis at proximal segment, 30-40% diffuse stenosis at mid segment, 80% diffuse stenosis at very distal segment
 - LCX: Co-dominant vessel with 20-30% stenosis at mid segment, 20-30% stenosis at proximal OMI
 - RCA: Dominant vessel with 50% stenosis at proximal segment, 30% diffuse stenosis at mid-distal segment, 20% stenosis at distal segment, 70% diffuse stenosis at RPL, 60-70% diffuse stenosis at PDA

Conclusion: Non-significant CAD

Recommendation: Medical Treatment



Patient History

- ▶ **Chief Complaint:** แพทย์นัดมาผ่าตัดส่องกล้องทางเดินปัสสาวะ
- ▶ **Present Illness:** Known Case BPH with AUR with failed TWOC x II
S/P retained Foley's catheter เปลี่ยนทุก 1 เดือน
ปัสสาวะใน Urine bag สีดี ไม่มีตะกอน ไม่มีไข้ ไม่มีหนาวสั่น
ไม่มีปัสสาวะเป็นเลือด ไม่มีหอบเหนื่อยตอนกลางคืน นอนราบได้
หุนหัน 1 ใบ ไม่มีเจ็บแน่นหน้าอก ไม่มีจุกแน่นลิ้นปี่ ไม่มีเรอเปรี้ยว ไม่มี N/V



Patient History

Current Medication

- ▶ ASA (81) 1 tab PO OD PC (hold 05/10/63)(2 wk PTA)
- ▶ Enalapril (5) tab PO BID PC
- ▶ Carvedilol (6.25) 1 tab PO BID PC
- ▶ Lasix (40) ½ tab PO AD PC
- ▶ Spinololactone (25) 1 tab PO OD PC
- ▶ Metformin (500) 1 tab PO BID PC
- ▶ Glipizide (20) 1 tab PO OD PC
- ▶ Empagliflozin (20) 1 tab PO OD PC
- ▶ Atorvastatin (20) 1 tab PO OD PC



Patient History

Personal History

- ▶ **Drug allergy:** Penicillin, Sulfa, Peroxicam, Norgesic ผื่นคัน
- ▶ **Smoking:** Ex-smoker 30 pack-year, Quit 10+ year
- ▶ **Alcohol drinking:** Quit 10+ year

Family History

- ▶ ไม่มีประวัติญาติสายตรงมีภาวะแทรกซ้อนจากการดมยาสลบ



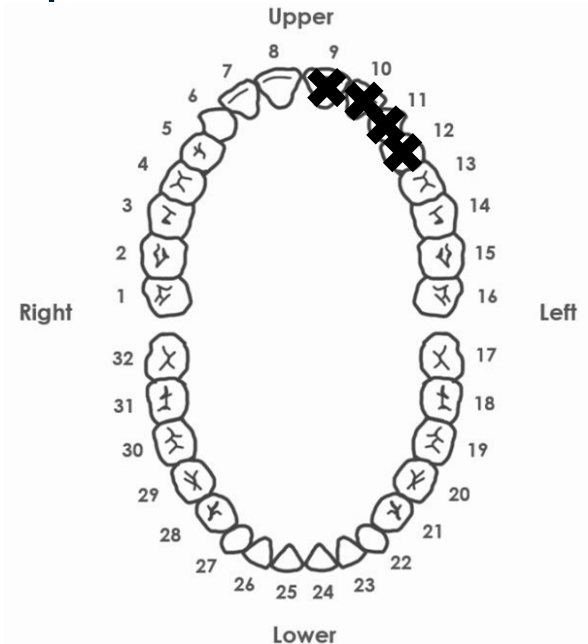
Physical Examination

- ▶ **General appearance:** Thai, Male, normostenic built, good consciousness, well cooperated, no jaundice
- ▶ **V/S:** BT 36.0 °C, BP 172/87 mmHg, PR 84 bpm, RR 20/min
Weight 83 kg, Height 181 cm, BMI 25.3 kg/m²



Physical Examination

- ▶ **Airway assessment; No Difficult intubation expected**
 - ▶ no Limit range of motion of neck
 - ▶ Thyromental distance more than 6 cm
 - ▶ Mallampati grade 1
 - ▶ Mouth opening more than 3 cm
 - ▶ no Prominent incisor
 - ▶ Upper lip bite test class I
 - ▶ Dental loss as figure:





Physical Examination

- ▶ **HEENT:** no craniofacial abnormality, not pale conjunctiva, no ictericsclera, trechea in midline
- ▶ **Lungs:** equal breath sound, no adventitious sound
- ▶ **Heart:** regular rhythm, normal S_1S_2 , no murmur, no jugular venouse distention
- ▶ **Abdomen:** normo active BS, soft, not tender
- ▶ **Back:** normal, no wound, no infection, normal spine alignment, no deformities, no dimping
- ▶ **Extremities:** no pitting edema, BK amputation Rt leg, Prayer sign negative
- ▶ **Neurological:** grossly intact; motor grade V all, intact sensory



Investigation

- ▶ **CBC:** Hb 12.6 %, Hct 37.9 %, Plt 225,000/uL
- ▶ BUN 19.1 mg/dL, Cr 1.24 mg/dL (eGFR 60.2 ml/min/1.73 m²)
- ▶ **Electrolyte:** Na 140.9, K 3.95, Cl 106.7, HCO₃ 24
- ▶ **Coagulogram:** PT 11.6, INR 0.99, PTT 24 (0.91), TT 14.2 (1.15)
- ▶ HbA₁C 8.5, DTX 152 mg%

Investigation



- ▶ **Chest X-Ray:** cardiomegaly, no new infiltration, no congestion
- ▶ **EKG 12 leads:** NSR 90 bpm, no ST-T change

Investigation



Adenosine Stress Cardiac Test (13/04/63)

- ▶ Inducible ischemia at RCA territories
- ▶ No evidence of MI
- ▶ Mildly decrease LV systolic contraction with LVEF 39%
- ▶ Basal and mid anterior, anteroseptal and inferoseptal wall hypokinesia
- ▶ Good RV systolic contraction with RVEF 59%
- ▶ Normal valvular structure and function

Problem List





Problem List

- ▶ Male 66 years with BPH
- ▶ U/D poor controlled HT and DM
- ▶ Hx of HFrEV (7 month prior to surgical planning date)

ASA Physical status: Class 3

Preoperative Evaluation





Preoperative Consideration

Patient Factor

- ▶ Comorbidities
 - ▶ Hypertension
 - Consider in a case-by-case basis with patient and surgical consideration
 - Maintain BP within 20% of patient's baseline
 - ▶ Diabetes mellitus
 - Intraoperative serum glucose levels should be maintained between 100 and 180 mg/dL

Preoperative Consideration



Patient Factor (cont.)

- ▶ **Cardiovascular and Pulmonary status**
 - ▶ Volume status
 - ▶ Restrict fluid

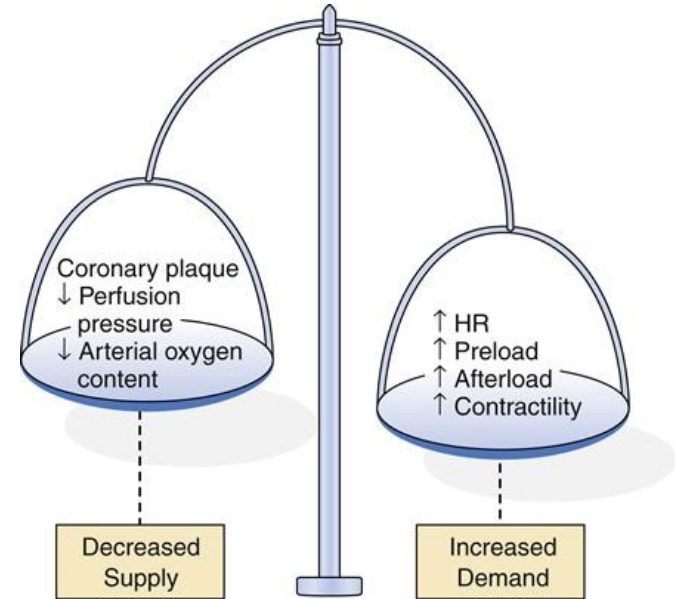


Preoperative Consideration

Patient Factor (cont.)

Cardiovascular condition

- ▶ Balancing myocardial O₂ demand and supply
- ▶ Monitoring for early detection and treatment ischemia
- ▶ Avoid persistence and excessive changing in HR and BP
 - ± 20% from baseline
- ▶ Aware of fluid redistribution





Preoperative Consideration

Patient Factor (cont.)

- ▶ Antiplaetlet: ASA
- ▶ NPO
- ▶ IV fluid



Preoperative Consideration

Surgical Factor

- ▶ Positioning
- ▶ Intraoperative bleeding
- ▶ Coagulopathy
- ▶ Hypothermia
- ▶ Surgical technique
- ▶ Transient bacterimia or/and Septicemia



Preoperative Consideration

Surgical Factor (cont.)

Positioning: Lithotomy with slight Trendelenburg tilt

- ▶ Nerve injury
 - ▷ Common peroneal nerve
 - ▷ Sciatic nerve
 - ▷ Femoral nerve



Preoperative Consideration

Surgical Factor (cont.)

Positioning: **Lithotomy with slight Trendelenburg tilt** (cont.)

- ▶ Decrease in pulmonary compliance
 - Cephalad shift of diaphragm
- ▶ Decrease in lung volume
 - Residual volume
 - Functional residual volume
 - Tidal volume
 - Vital capacity
- ▶ ± Increase in cardiac preload



Preoperative Consideration

Surgical Factor (cont.)

Intraoperative bleeding

- ▶ Average blood loss is 2 to 4 mL/min of resection time
 - Difficult to estimate blood loss due to mixing with irrigating fluid
- ▶ Prevention
 - Observe vital sign
 - Serial Hct level assessment in prolonged resection
- ▶ Treatment
 - IV fluid
 - Blood product



Preoperative Consideration

Surgical Factor (cont.)

Coagulopathy

- ▶ Increase bleeding
 - Prostate releases plasminogen activator that converts plasminogen into plasmin
 - Increases bleeding via fibrinolysis
- ▶ Disseminated intravascular coagulopathy (DIC) (Primary fibrinolysis)
 - Systemic absorption of resected prostatic tissue (thromboplastin)



Preoperative Consideration

Surgical Factor (cont.)

Hypothermia

- ▶ Body temperature decreases approximately 1° C/hr of surgery who receive room-temperature irrigation fluids
 - ▶ Shivering (16%)
- ▶ Prevention
 - ▶ Warming irrigation solutions as body temperature



Preoperative Consideration

Surgical Factor (cont.)

Surgical technique: **Bipolar plasma vaporization** of prostate technique

- ▶ Not transmit highly ionized particle of irrigated isosmotic solution (NSS or RLS) to patient body
- ▶ Significantly reduced bleeding
 - Glides over the prostatic tissue without making direct tissue contact
 - Vaporize limited thin layer
- ▶ Produces minimal heat
- ▶ Concomitantly vaporizes and coagulatestissue



Preoperative Consideration

Surgical Factor (cont.)

Transient bacterimia or/and Septicemia

- ▶ Via opened prostatic venous sinuses
- ▶ Increase risk by indwelling catheter
- ▶ 6 - 7% may develop septicemia
- ▶ Prevention
 - Antibiotic prophylaxis

Preoperative Preparation





Preoperative Preparation

- ▶ Informed consent
- ▶ NPO
- ▶ IV + Fluid: 5%DN/2 1000 ml + KCl 20 mEq + RI 6 U IV 40 mL/hr
- ▶ DTX หลัง on IV 1 hr + เข้าวันผ่าตัด; Keep 80 - 180 mg%
- ▶ Premedication
 - ▶ Carvidilol (6.25) 1 tab PO เข้าวันผ่าตัด
- ▶ Antibiotic (Prophylaxis)
 - ▶ Ceftriazone 2 g IV OD



Preoperative Preparation

- ▶ Set Spinal + 0.5% Heavy Marcaine
- ▶ Warm IV Fluid: Acetar 1000 ml
- ▶ Blood component: G/M PRC 1 unit
- ▶ Airway equipment + difficult airway equipment
- ▶ Vasopressor

Anesthetic Consideration





Anesthetic Consideration

Choice of Anesthesia

Neuraxial block	Combined spinal–epidural	General anesthesia
Awake -> Dx of bladder or prostatic capsule perforation and TUR syndrome	length of surgery is unpredictable	length of surgery is unpredictable
Decrease blood loss	Decrease blood loss	Increase blood loss
lower CVP -> increase irrigation fluid absorption	lower CVP -> increase irrigation fluid absorption	

Anesthetic Consideration



Choice of Anesthesia

▶ Spinal Anesthesia

- ▶ Adequate anesthesia for sensory block at level of T10
 - sensory transmission from the prostate and bladder neck
- ▶ Relaxation of pelvic floor and perineum for surgeon
- ▶ Remain awake to recognize early signs and symptoms of TURP syndrome or extravasation of irrigating solution

Anesthetic Consideration



Transurethral Resection Syndrome (TUR Syndrome)

- ▶ Excessive volume expansion
- ▶ Hyponatremia
- ▶ Symptom related to specific to each of irrigating solution



Anesthetic Consideration

TABLE 59.12 Osmolality of Irrigation Solutions Used for Transurethral Resection of the Prostate

Solution	Osmolality (mOsm/kg)
Glycine, 1.2%	175
Glycine, 1.5%	220
Cytal (see text)	178
Sorbitol, 3.5%	165
Mannitol, 5%	275
Glucose, 2.5%	139
Urea, 1%	167
Distilled water	0

TABLE 49-6. PROPERTIES OF COMMONLY USED IRRIGATING SOLUTIONS FOR TRANSURETHRAL RESECTION PROCEDURES

Solution	Osmolality (mOsm/L)	Advantages	Disadvantages
Distilled water	0	Improved visibility	Hemolysis Hemoglobinemia Hemoglobinuria Hyponatremia
Glycine (1.5%)	200	Less likelihood of TUR syndrome	Transient postoperative visual syndrome Hyperammonemia Hyperoxaluria
Sorbitol (3.3%)	165	Same as glycine	Hyperglycemia, possible lactic acidosis Osmotic diuresis
Mannitol (5%)	275	Isosmolar solution Not metabolized	Osmotic diuresis Possibility of acute intravascular volume expansion

TURP, transurethral resection of the prostate.

Adapted from: Krongrad A, Droller MJ. Complications of transurethral resection of the prostate. In: Marshall FF, ed. *Urologic Complications: Medical and Surgical, Adult and Pediatric*. 2nd ed. St. Louis: Mosby-Year Book, 1990, 05, with permission.



Anesthetic Consideration

Transurethral Resection Syndrome (TUR Syndrome)

Classical triad in awake patient

- ▶ Hypertension (increase in both SBP and DBP)
- ▶ Bradycardia
- ▶ Mental status change



Anesthetic Consideration

TABLE 49-7. SIGNS AND SYMPTOMS OF ACUTE HYPONATREMIA

Serum Na⁺ (mEq/L)	CNS Changes	ECG Changes
120	Confusion	Possible widening of QRS complex
115	Restlessness Somnolence	Widened QRS complex Elevated ST segment
110	Nausea Seizures	Ventricular tachycardia or fibrillation
	Coma	

CNS, central nervous system; ECG, electrocardiogram.

Adapted from: Jensen V. The TURP syndrome. *Can J Anaesth.* 1991;38:90, with permission.

Anesthetic Consideration



TABLE 59.13 Signs and Symptoms of Transurethral Resection of the Prostate Syndrome

Cardiovascular and Respiratory	Central Nervous System	Metabolic	Other
Hypertension	Agitation/confusion	Hyponatremia	Hypoosmolality
Bradycarrhythmias, tachycarrhythmias	Seizures	Hyperglycinemia	Hemolysis
Congestive heart failure	Coma	Hyperammonemia	Acute renal failure
Pulmonary edema and hypoxemia	Visual disturbances (blindness)		
Myocardial infarction			
Hypotension			



Anesthetic Consideration

Transurethral Resection Syndrome (TUR Syndrome)

Treatment

- ▶ Recognized cardiovascular or neurologic complications
- ▶ Informed surgeon to complete or terminate procedure ASAP
- ▶ Restore extracellular tonicity by serum Na correction
 - Symptomatic hyponatremia with serum Na < 120 mEq/L
 - Hypertonic saline: 3% NaCl
 - Chronic hyponatremia -> 0.5 mEq/L/hr
 - Goal
 - Asymptomatic
 - Serum Na > 120 mEq/L



Anesthetic Consideration

Transurethral Resection Syndrome (TUR Syndrome)

Treatment

- ▶ Complication
 - Central pontine myelinolysis
(Demyelinating central nervous system lesions)
 - Severe life-threatening symptoms
 - Rapid increase in plasma osmolarity
 - Shinken of brain cell
 - No reports after Tx of acute TUR Syndrome

Anesthetic Consideration



TABLE 49-8. TREATMENT OF THE TRANSURETHRAL RESECTION SYNDROME

- Ensure oxygenation and circulatory support
- Notify surgeon and terminate procedure as soon as possible
- Consider insertion of invasive monitors if cardiovascular instability occurs
- Send blood to laboratory for evaluation of electrolytes, creatinine, glucose, and arterial blood gases
- Obtain 12-lead electrocardiogram
- Treat mild symptoms (with serum Na^+ concentration >120 mEq/L) with fluid restriction and loop diuretic (furosemide)
- Treat severe symptoms (if serum $\text{Na}^+ <120$ mEq/L) with 3% sodium chloride IV at a rate <100 mL/h
- Discontinue 3% sodium chloride when serum $\text{Na}^+ >120$ mEq/L



Anesthetic Consideration

Surgical perforation

- ▶ Cause
 - Surgical instrumentation
 - Overextension of bladder with irrigating solution
- ▶ Early sign
 - Decrease in the return of irrigating solution
- ▶ Late sign
 - Abdominal distension due to significant volume of fluid accumulation



Anesthetic Consideration

Surgical perforation (cont.)

- ▶ Prostate capsule
 - Retroperitoneal perforation
 - Pain localized to lower abdomen and back
- ▶ Bladder
 - Intraperitoneal perforation
 - Abdominal and shoulder pain
 - Secondary to diaphragmatic irritation

Anesthetic Intraoperative Flow





Choice of Anesthesia

- ▶ Spinal Anesthesia
- ▶ Monitoring: NIBP, EKG, SpO₂
- ▶ Position: Lithotomy

Phramongkutkiao Hospital Anesthetic Record		ASA 1 2 3 4 5 E	WT. 85kg	HT. 181 cm	Hct. 37.9%			
Date 20 Oct 2563	HN. [redacted]	AN. [redacted]	Bl. Group -	Bl. Request -				
Name [redacted]	Age 66	Sex ♀	PRE-Medication -					
Ward 13/2	Code. [redacted]	Op. No. 14-4						
Anesthetic technique SA	Service. URO		Monitoring NIBP, O ₂ Sat, EKG, ETCO ₂ , A-line, CVP, PAP, TEMP.					
Remark unlin penicillin, sulfa, pexnicam, morphic (aropi/uro)			Other force air warmer	ROOM No. 16				
AGENTS/TIME		15:30	16:00	17:00	18:00	19:00	20:00	CONSENT
N ₂ O								<input checked="" type="checkbox"/> YES
O ₂								<input type="checkbox"/> NO
O ₂ sat		99%	100	100	100	98	97	PRE - OP VISIT
IV FLUID INTAKE		Acetar 300 ml ▶ Acetar 50 ml ▶						<input checked="" type="checkbox"/> YES
BP	HR	240	SR	SR	SR	SR	SR	<input type="checkbox"/> NO
PULSE	38							POSITION
START ANES	34							<input type="checkbox"/> SUPINE
START	30							<input type="checkbox"/> PRONE
END ANES	26							<input checked="" type="checkbox"/> LITHOTOMY
TEMP	24							<input type="checkbox"/> SITTING
	22							<input type="checkbox"/> TRENDEL
								<input type="checkbox"/> R.LATERAL
								<input type="checkbox"/> L.LATERAL
								<input type="checkbox"/> JACK-KNIFE
								<input type="checkbox"/> OTHER
								LAB
								<input type="checkbox"/> Hct
								<input type="checkbox"/> Blood Sugar
								<input type="checkbox"/> Electrolyte
								<input type="checkbox"/> ABG
URINE								TOTAL URINE
BLOOD								OUTPUT - ml
FLUID								
PRECURARIZATION	-	mg						TREATMENT
INDUCTION AGENT	-	mg						<input type="checkbox"/> EPIDURAL <input checked="" type="checkbox"/> SPINAL <input type="checkbox"/> OTHER
INTUBATION AGENT	-	mg						SITE L3-4 NEEDLE No. 27
INHALATION AGENT	-	%						preload 300 ml @ non SA c
M.RELAXANT	-	mg						record v/s q 2 min until stable
SEDATIVE	-	mg						DRUG 0.5% Heavy Mavaine 2.4 ml
ANALGESIC	-	mg						ANEST LEVEL : PRE - OP T ₁₀
								POST - OP T ₁₀

in OR 15:30

- ▶ Monitoring: NIBP, EKG, SpO₂
- ▶ IV cath No.20 at LH was checked
- ▶ 5%DN/2 1000 ml + KCl 20 mEq + RI 6 U ยกมา 450 ml (hold)
- ▶ V/S: BP 180/90 mmHg, PR 81 bpm, RR 18/min SpO₂ 100% (RA)
- ▶ Acetar 1000 ml IV Preload 300 ml IV ก่อน SA

Phramongkutkiao Hospital Anesthetic Record		ASA	1	2	3	4	5	E	WT.	85kg	HT.	181 cm	Hct.	37.9%
Date	20 Oct 2563	HN.		AN.		Bl. Group		Bl. Request						
Name		Age	66	Sex	♀	PRE-Medication								
Ward	13/2	Code	ursn	Op. No.	14-4	Monitoring	NIBP	O ₂ Sat	EKG	ETCO ₂	A-line	CVP	PAP	TEMP
Anesthetic technique	SA	Service	URO	Remark	urin penicillin, sulfa, pexnicam, morphic (aropi/ursn)	Other	force air warmer							ROOM No. 16
AGENTS/TIME														
N ₂ O		15:30		16:00		17:00		18:00		19:00		20:00	CONSENT	
O ₂													<input checked="" type="checkbox"/> YES	
													<input type="checkbox"/> NO	
PRE - OP VISIT														
													<input checked="" type="checkbox"/> YES	
													<input type="checkbox"/> NO	
POSITION														
													<input type="checkbox"/> SUPINE	
													<input type="checkbox"/> PRONE	
													<input checked="" type="checkbox"/> LITHOTOMY	
													<input type="checkbox"/> SITTING	
													<input type="checkbox"/> TRENDEL	
													<input type="checkbox"/> R.LATERAL	
													<input type="checkbox"/> L.LATERAL	
													<input type="checkbox"/> JACK-KNIFE	
													<input type="checkbox"/> OTHER	
LAB														
													<input type="checkbox"/> Hct	
													<input type="checkbox"/> Blood Sugar	
													<input type="checkbox"/> Electrolyte	
													<input type="checkbox"/> ABG	
IV FLUID INTAKE														
													Acetar 300 ml ▶ Acetar 50 ml ▶	
BP	170/90	80		240									SR SR SR SR SR	
PULSE	81	38		200									W	
START ANES	X	34		180									W	
START	30	30		140									W	
END ANES	⊗	26		100									W	
TEMP	Δ	24		80									W	
URINE													on F/C No. 22 morpho CBT	
BLOOD													-	
FLUID													5% D ₂ O 1000 ml + KCl 20 meq + RI 6.5 @ 300 ml chd	
PRECURARIZATION	-												mg	
INDUCTION AGENT	-												mg	
INTUBATION AGENT	-												mg	
INHALATION AGENT	-												%	
M.RELAXANT	-												mg	
SEDATIVE	-												mg	
ANALGESIC	-												mg	
TREATMENT														
													<input type="checkbox"/> EPIDURAL <input checked="" type="checkbox"/> SPINAL <input type="checkbox"/> OTHER	
													SITE L ₃₋₄ NEEDLE No. 27	
													ATTEMPT 1 BY W. K. S. S.	
													DRUG 0.5% Heavy Marcaine 2.4 ml	
													ANEST LEVEL : PRE - OP T ₁₀	
													FO292-1 POST - OP T ₁₀	
													① Acetar 1000 ml ② preload 300 ml @ non SA ③ record v/s q 2 min until stable	

SA at 15:50

- ▶ Spinal needle No.27
- ▶ Agent: 0.5% Heavy marcaine 2.4 mL
- ▶ Site: L₃-L₄
- ▶ CSF: clear
- ▶ Pre-op anesthetic level: T10
- ▶ V/S after S/A:
BP 165-170/90-95 mmHg,
PR 75-80 bpm
- ▶ Monitor V/S every 2 min until stable
- ▶ Position after SA: Lithotomy

Phramongkutkiao Hospital Anesthetic Record			ASA	1	2	3	4	5	E	WT.	85kg	HT.	181 cm	Hct.	37.9%	
Date	20 October 2563	HN.		AN.						Bl. Group	-	Bl. Request	-			
Name	[REDACTED]		Age	66	Sex	♀				PRE-Medication	-					
Ward	13/2	Code.	ursn.	Op. No.	14-4					Monitoring	NIBP, O ₂ Sat, EKG, ETCO ₂ , A-line, CVP, PAP, TEMP.					
Anesthetic technique	SA	Service.	URO							Other	force air warmer	ROOM No.	16			
Remark	urbin penicillin, sulfa, pexnicam, morphic (arbutin/urba)															
AGENTS/TIME																
N ₂ O	15:30	16:00	17:00	18:00	19:00	20:00	CONSENT									
O ₂							<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO									
PRE - OP VISIT																
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO																
POSITION																
<input type="checkbox"/> SUPINE <input type="checkbox"/> PRONE <input checked="" type="checkbox"/> LITHOTOMY <input type="checkbox"/> SITTING <input type="checkbox"/> TRENDEL <input type="checkbox"/> RLLATERAL <input type="checkbox"/> LLLATERAL <input type="checkbox"/> JACK-KNIFE <input type="checkbox"/> OTHER																
O ₂ sat	99%	100	100	100	98	97	LAB									
<input type="checkbox"/> Hct <input type="checkbox"/> Blood Sugar <input type="checkbox"/> Electrolyte <input type="checkbox"/> ABG																
IV FLUID INTAKE																
Acetar 300 mL ▶ Acetar 50 mL ▶																
BP	180	170	160	150	140	130	<input type="checkbox"/> URINE <input type="checkbox"/> BLOOD <input type="checkbox"/> FLUID									
PULSE	81	80	78	76	74	72	<input type="checkbox"/> TOTAL URINE <input type="checkbox"/> OUTPUT									
START ANES	X						<input type="checkbox"/> PRECURARIZATION <input type="checkbox"/> INDUCTION AGENT <input type="checkbox"/> INTUBATION AGENT <input type="checkbox"/> INHALATION AGENT <input type="checkbox"/> M.RELAXANT <input type="checkbox"/> SEDATIVE <input type="checkbox"/> ANALGESIC									
START	30						<input type="checkbox"/> EPIDURAL <input checked="" type="checkbox"/> SPINAL <input type="checkbox"/> OTHER									
END ANES	⊗						<input type="checkbox"/> SITE L ₃₋₄ NEEDLE No. 27 <input type="checkbox"/> ATTEMPT 1 BY [Signature] <input type="checkbox"/> DRUG 0.5% Heavy Marcaine 2.4 ml <input type="checkbox"/> ANEST LEVEL : PRE - OP T ₁₀ <input type="checkbox"/> POST - OP T ₁₀									
TEMP	36						<input type="checkbox"/> TREATMENT <input checked="" type="checkbox"/> ① Acetar 1000 mL <input checked="" type="checkbox"/> ② preload 300 mL @ non SA c <input checked="" type="checkbox"/> record v/s q 2 min until stable									
URINE	-						<input type="checkbox"/> on F/C No. 22 morpho CBI <input type="checkbox"/> IV. CATH. NO. 22 SITE RH									
BLOOD	-															
FLUID	5% O ₂	1000 mL	+ KCl	20	-Eq	+ RI	6.5									

at 16:05

- ▶ Start operation

at 16:45

- ▶ End operation
- ▶ Operation Time 40 min
- ▶ EBL: cannot evaluate
- ▶ F/C was inserted and connected with CBI
- ▶ Total IV Fluid: 350 mL
- ▶ Irrigation with NSS 1000 ml × 10 bottles
- ▶ Transfer to PACU

Postoperative





Postoperative Consideration

- ▶ Postoperative bleeding
- ▶ Bladder, prostatic capsule, or urethral perforation
- ▶ Fever/bacteremia/sepsis
- ▶ Hypothermia
- ▶ Minimal post-op pain



Postoperative Day 1

- ▶ **S:** ผู้ป่วยตื่นดี ไม่ปวดแผล P/S at rest 0/10, P/S at movement 0/10
ไม่มีปัสสาวะเป็นเลือด ไม่มีไข้ ไม่มีหนาวสั่น
กินอาหารได้ปกติ ไม่มี N/V
ไม่มีหอบเหนื่อย นอนราบได้ ไม่มีแน่นหน้าอก
- ▶ **O:** V/S: BT 36.1 °C, BP 132/75 mmHg, PR 78 bpm, RR 16 bpm
F/C: no bleeding clot
I/O: 1205/2200 mL
- ▶ **A:** BPH with AUR S/P TUR-P Post-op Day 1 -> Stable
- ▶ **P:** Observe hematuria, fever



Postoperative Day 2

- ▶ **S:** ผู้ป่วยตื่นดี ไม่ปวดแผล P/S at rest 0/10, P/S at movement 0/10
ไม่มีปัสสาวะเป็นเลือด ไม่มีไข้ ไม่มีหนาวสั่น
กินอาหารได้ปกติ ไม่มี N/V
ไม่มีหอบเหนื่อย นอนราบได้ ไม่มีแน่นหน้าอก
- ▶ **O:** V/S: BT 37.0 °C, BP 138/72 mmHg, PR 80 bpm, RR 18 bpm
F/C: no bleeding clot
I/O: 1170/2700 mL
- ▶ **A:** BPH with AUR S/P TUR-P Post-op Day 2 -> Stable
- ▶ **P:** Off Foley's catheter, Observe voiding,
Observe hematuria, fever, Plan D/C พรุ่งนี้

Thank You