

# CASE DISCUSSION

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# CASE

A 80 years old man

Diagnosis : Closed Fracture  
Lt. Posterior Wall Acetabulum

Operation : ORIF with plate  
and screw

# PATIENT'S HISTORY

Chief complaint : ปวดสะโพกซ้าย 5 วัน PTA

## Present illness:

5 วัน PTA ลื่นล้ม สะโพกซ้ายกระทบพื้น ต้นขาซ้ายผิดรูป ปวดมาก ลุกยืนไม่ได้ ลงน้ำหนักไม่ได้ ไม่มีอาการชา ไปรักษา รพ โกลด์บ้าน วินิจฉัย ข้อสะโพกซ้ายหลุดและเบ้าสะโพกซ้ายแตก ทำการรักษาโดยการ **close reduction** ข้อสะโพกซ้ายให้เข้าที่ ก่อน **refer** มาผ่าตัดที่ รพ พระมงกุฎเกล้า

# PAST HISTORY

## Underlying disease

- HT
- Type2 DM
- DLP
- CKD stage III
- Anemia in CKD

## Current medications

- Metropolol (100) 0.5\*1 opc
- Enalapril(5) 1\*2 opc
- manidipione(20) 1\*1 opc
- Atorvastatin(40) 1\*1 ohs
- Pioglitazone(30) 1\*1 opc
- Glipizide(5) 1\*2 opc
- Linagliatin(5) 1\*1 opc
- Folic(5) 1\*1 opc
- Ferrous fumarate(200) 1\*3opc



# PAST HISTORY

- No drug and food allergy
- No history alcohol drinking
- No history of smoking
- Previous surgery :
  - Hernioplasty under SA 2561 : no complication
  - Appendectomy under GA 2508 : no complication
- Functional class I



# PHYSICAL EXAMINATION

# PHYSICAL EXAMINATION

- Vital signs
  - BP 118/56 mmHg    PR 80 BPM
  - BT 36.5°C            RR 18/min
- BW 62 kg, height 160 cm (BMI 24.22 kg/m<sup>2</sup>)
- GA : An old Thai male, good consciousness, well co-operated
- HEENT : **pale conjunctivae**, anicteric sclerae

# PHYSICAL EXAMINATION

- Airway examination
  - Mouth opening  $> 3$  cm
  - Prominent incisor : no
  - Dental caries, broken teeth
  - Upper lip bite test : class 1
  - Mallampati grade : grade 2
  - Thyromental distance  $> 6$  cm
  - Limit neck of motion : no

# PHYSICAL EXAMINATION

- Heart : pulse full, regular, normal S1 and S2, no murmur
- Lung : equal breath sound both lungs, no use of accessory muscle, no adventitious sound

# PHYSICAL EXAMINATION

- Abdomen : soft, not tender, liver and spleen can not palpable
- Back : normal spine alignment , no local skin infection , no skin dimple
- Neuro : E<sub>4</sub>V<sub>5</sub>M<sub>6</sub>, pupil 2 mm RTLBE, sensory intact
- Extremities :
  - **Affected part : Lt.Hip tender, limit ROM due to pain, no wound seen, neurovascular intact**



# INVESTIGATION

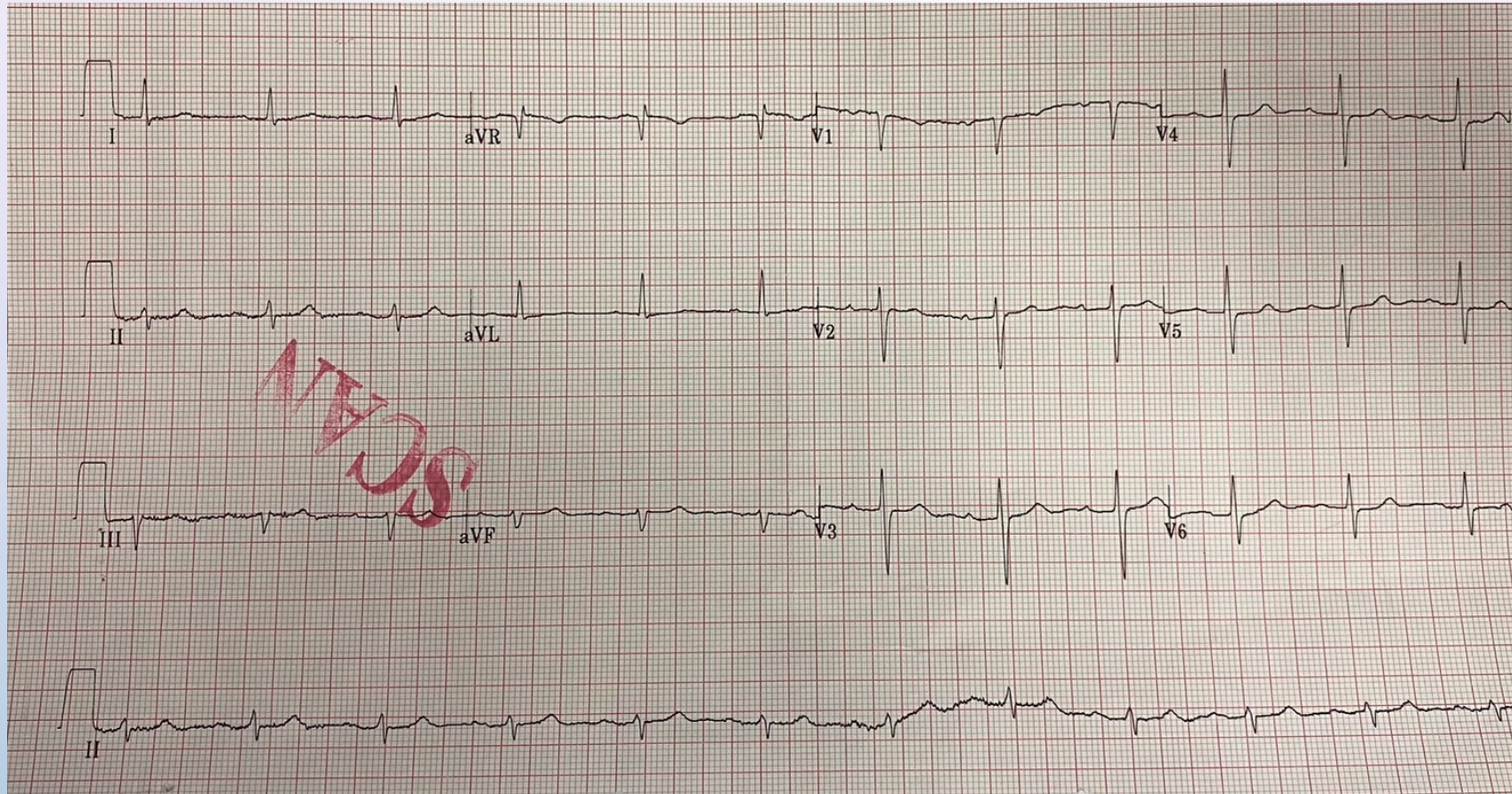
# INVESTIGATION

- CBC: Hb 8.7 gm/dl HCT 25.4 %  
platelet 356,000/mm<sup>3</sup>
- Electrolytes: Na 136 meq/l K 3.76 meq/l Cl 104.7 meq/l CO<sub>2</sub> 21.2 meq/l
- BUN: 18.7 mg/dl Cr: 1.62mg/dl GFR: 39.49 ml/min/1.73m<sup>2</sup>
- FBS 149 mg%

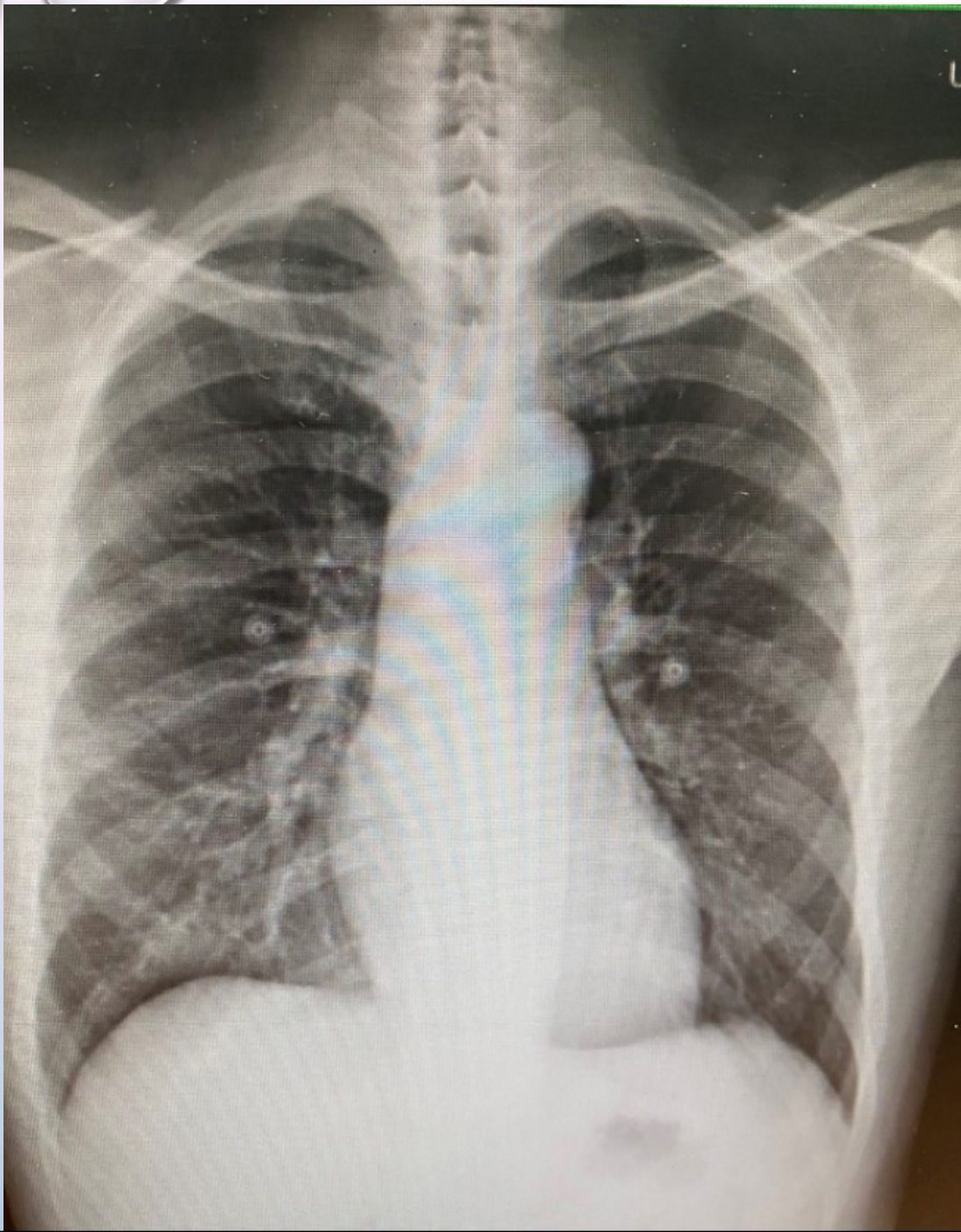


# INVESTIGATION

- EKG : 1<sup>ST</sup> Degree AV block, HR 70 bpm, no ST-T change







## INVESTIGATION

- CXR : No infiltration, no cardiomegaly



## INVESTIGATION

- Film pelvic : post wall fracture of Lt. Acetabulum





## INVESTIGATION

- Film pelvic : post wall fracture of Lt.Acetabulum



## INVESTIGATION

- CT hip : post wall fracture of Lt.Acetabulum



The background is a dark, textured surface. It features several realistic water droplets of various sizes, some with highlights and shadows, scattered across the frame. In the lower right quadrant, there is a faint, 3D-rendered pattern of letters and symbols, possibly representing a complex data set or a specific classification system, which is partially obscured by the droplets.

# PROBLEM LISTS ASA CLASSIFICATION

# PROBLEM LISTS

- Closed fracture Lt. posterior wall acetabulum
- Underlying disease
  - Hypertension
  - Type2 DM
  - CKD stage III
  - Anemia in CKD
- Aging

A teal-colored vertical bar on the left side of the slide, decorated with several translucent, 3D-rendered bubbles of varying sizes. The bubbles are positioned at the top and bottom edges of the bar.

## ASA CLASSIFICATION

- ASA CLASS III





# PREOPERATIVE EVALUATION

# PREOPERATIVE EVALUATION

- PATIENT FACTOR
- SURGICAL FACTOR
- ANESTHETIC FACTOR

# PATIENT FACTORS

- CLOSED FRACTURE LT. POSTERIOR WALL ACETABULUM
- HT
- TYPE2 DM
- CKD STAGE III
- ANEMIA IN CKD
- AGING



# ACETABULUM FRACTURE

- No associated injury
- One type of hip fracture
- High morbidity and mortality (1-year mortality up to 30%)
- Perioperative complications related to preexisting cardiac and pulmonary complications include :
  - Myocardial ischemia and dysrhythmias
  - DVT
  - Pulmonary embolism
  - Delirium



# HIP FRACTURE

- Pain and stress → myocardial ischemia
- **Early surgery (<24 hours) reduce pain and length of stay hospital** but not improve function or mortality
- Delay surgery for > 4 days have a nearly 2.5 times higher risk of death within 30 days
- Early surgery for hip fractures combined with early mobilization and rehabilitation should be the goals for medical stable patients

# HYPERTENSION

- Baseline 130-140/70-80 mmHg
- No history of myocardial infarction/cerebrovascular disease
- No clinical chest pain/discomfort, dyspnea, no orthopnea, no PND
- Current medication
  - Metoprolol (100) 1\*1 opc
  - Enalapril(5) 1\*2 opc
  - Manidipine(5) 1\*1 opc
- Premedication
  - Metoprolol (100) 0.5 tab
  - Manidipione(20) 1 tab

# TYPE 2 DIABETIC MELLITUS

- Last Hb1C 6.5 FBS 149 mg%
- Current medication
  - Pioglitazone(30) 1\*1 opc
  - Glipizide(5) 1\*2 opc
  - Linagliatin(5) 1\*1opc
- Premedication
  - 5%DNSS 1000 ml+RI 6 u+KCl 30 meq iv 80 ml/hr

# CHRONIC KIDNEY DISEASE STAGE3B

- Cr baseline 1.5-1.6 mg/dl
- GFR 30-40 ml/min/1.73m<sup>2</sup>
- Anemia in CKD : Hb 8.7 gm/d HCT 25.4 %





# HEMATOLOGY SYSTEM IN CKD

- **ANEMIA**
  - **Decreased EPO production : common**
  - Decreased life span
  - Diminished erythrocyte production
  - **Mx: EPO drug+iron → Hb 11-12 g/dl → achieved**

**AGE RELATED  
PHYSIOLOGIC  
CHANGES**

Central nervous system

Respiratory system

KUB system

# CENTRAL NERVOUS SYSTEM

- Decrease cognitive reserve
  - Postoperative delirium
  - Postoperative cognitive dysfunction (POCD)
- Increased sensitivity to anesthetic medication
- Decreased neurotransmitter
- Reduced ability to generate body temp



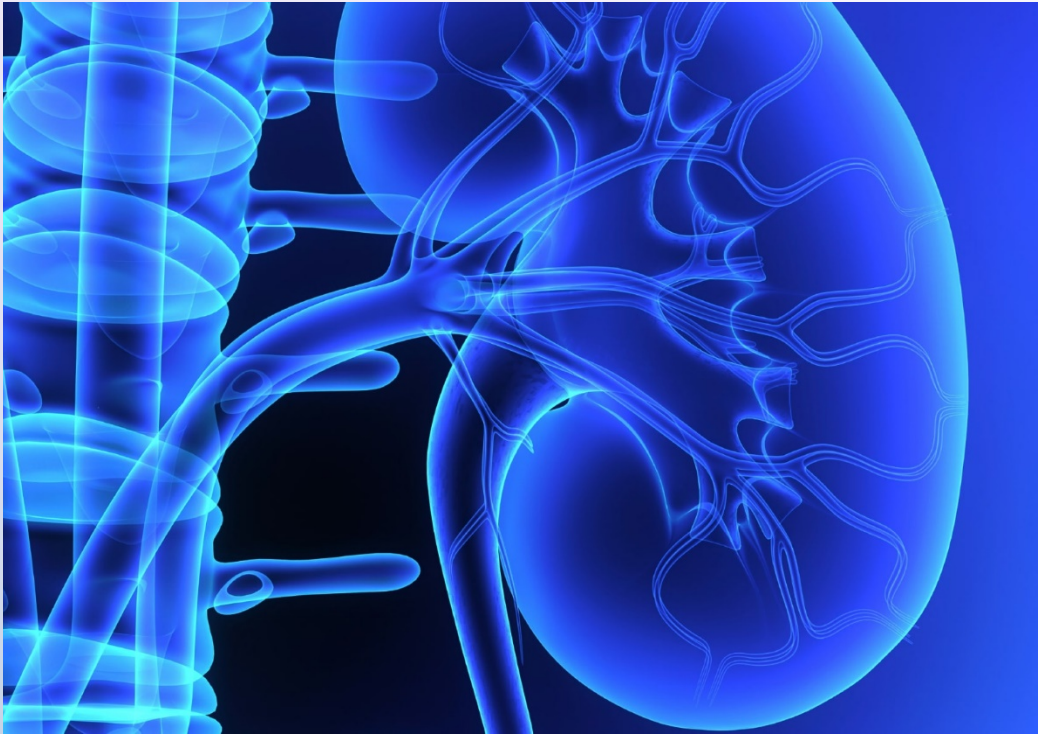


# RESPIRATORY SYSTEM

- Decreased elastic recoil
- Increased work of breathing
- Increased closing capacity > FRC : **atelectasis**
- Blunt responses to hypoxia, hypercapnia



# KUB SYSTEM



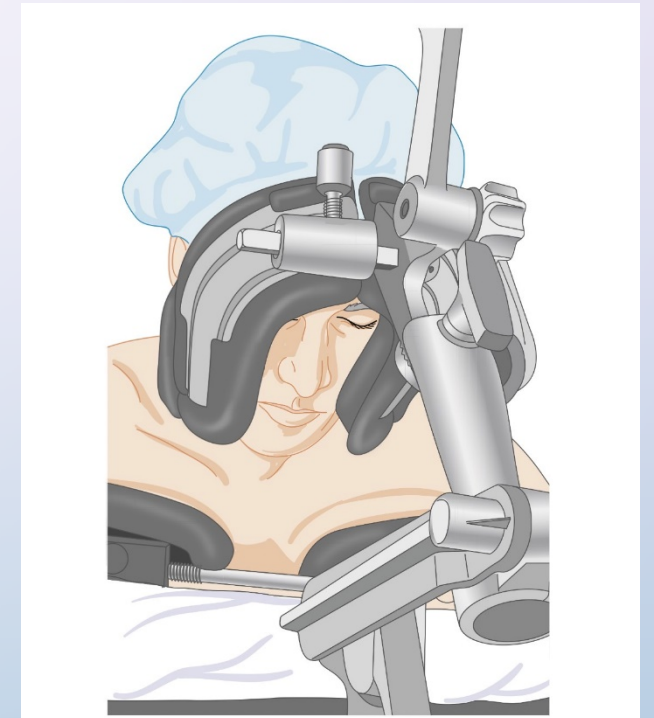
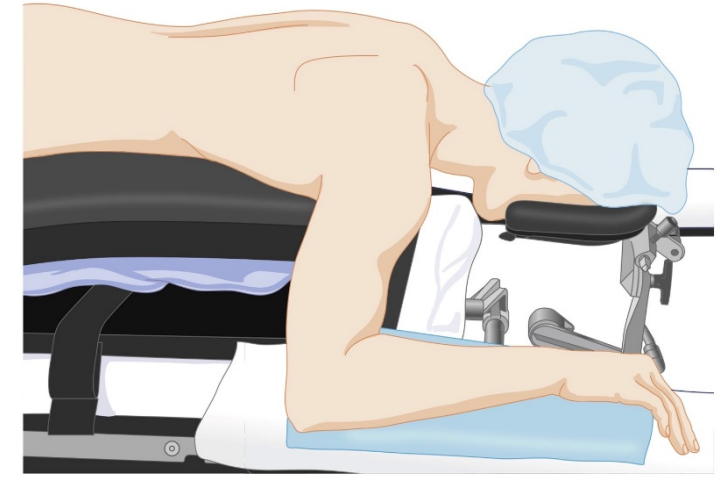
- Renal blood flow decrease about 10% per decade
- Progressive decline in Ccr with age
- Risk for dehydration and sodium depletion
- Prolongation of plasma half life of drug

# SURGICAL FACTOR

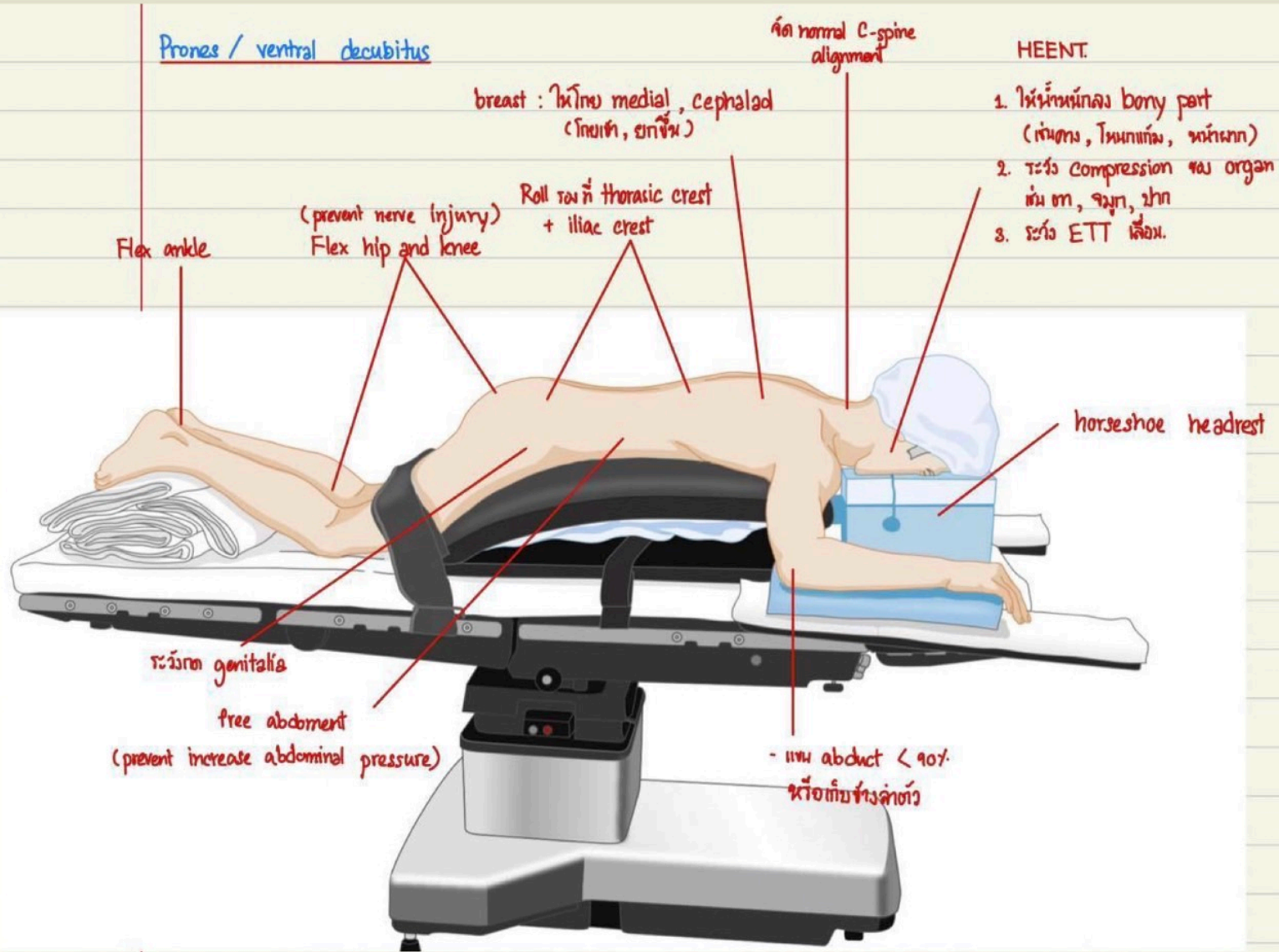
Prone Position

Intraoperative Bleeding

# PRONE POSITION



# Prone position





# PRONE POSITION

## Complication of the prone position

Airway	ETT kinking, dislodgment, upper airway edema
Neck	Hyperextension or hyperflexion Cervical rotation—compromised blood flow to brain
Eyes	Orbital pressure— central retinal artery occlusion, supraorbital nerve, corneal abrasion
Abdomen	Pressure transmitted to epidural vein, increased bleeding
Upper extremity	Ulnar nerve compression— arm at the side
Lower extremity	Flexion of hips— occlusion of femoral vein, DVT, kinking of vascular grafts Pressure lateral to fibula—peroneal nerve palsy Pressure on iliac crest – lateral femoral cutaneous nerve

# INTRAOPERATIVE BLEEDING

- ORIF with Plate and screw for acetabular fracture is risk for intraoperative bleeding
- Anemia in CKD : baseline Hb 8.7 gm/dl HCT 25.4 %
- Prepare blood component : LPRC and FFP

# ANESTHETIC FACTOR



# ANESTHETIC FACTOR

- CHOICE OF ANESTHESIA
  - GENERAL ANESTHESIA VS REGIONAL ANESTHESIA

# GENERAL ANESTHESIA

## Advantages

- Speed of onset
- Duration: can be maintained as long as need
- Allow multiple procedures for multiple injuries
- Greater patient acceptance
- Allow positive-pressure ventilation

## Disadvantages

- Impairment of global neurologic examination
- Requirement for airway instrumentation
- Hemodynamic management more complex
- Need analgesic : opioids
- Risk PONV
- Delayed recovery

# REGIONAL ANESTHESIA

## Advantages

- Allow continued assessment of mental status
- Increased vascular blood flow
- Decreased blood loss
- Decreased incidence of DVT
- Improved postoperative analgesia
- Early mobilization
- Lower incidence of long term pain syndrome

## Disadvantages

- Peripheral nerve function difficult to assess
- Patient refusal common
- Requirement for sedation
- Hemodynamic instability with placement
- Longer time to achieve anesthesia
- Not suitable for multiple body regions

# REGIONAL ANESTHESIA

Associated with

- **lower morbidity** including
  - DVT
  - Pulmonary embolism
  - Respiratory complications
  - Intraoperative blood loss
- **Lower mortality**

A teal-colored vertical bar on the left side of the slide, decorated with several white, semi-transparent bubbles of varying sizes. The bubbles are scattered across the bar, with some near the top and some near the bottom.

# CHOICE OF ANESTHESIA

- GA WITH ETT





# PREOPERATIVE PREPARATION

# PREOPERATIVE PREPARATION

- Inform consent
- NPO
- 5%DNSS 1000 ml+RI 6 U+KCl 30 meq iv 80 ml/hr
- G/M LPRC 4 U FFP 4 U
- Warm IV fluid, large bore intra-venous access
- IV anesthetic drug
- Force air warmer
- Antibiotic : cefazolin 3 g to OR
- Transamine 3 g to OR
- Prone head rest pad, axillary roll, chest roll, arm board

# PREMEDICATION

- Hold enalapril
- Hold pioglitazone, glipizide, linagliatin
- 5% DNSS 1000 ml + RI 6 u + KCl 30 meq iv 80 ml/hr
- Continue med
  - Metoprolol (100) 0.5 tab
  - Manidipione(20) 1 tab

The background is a light blue, semi-transparent image of a hospital operating room. It features medical equipment, including a patient on a table and a monitor displaying vital signs. The monitor shows a heart rate of 80, SpO2 of 99%, and other metrics. The scene is overlaid with several realistic water droplets of various sizes, giving it a clean, clinical feel.

# INTRAOPERATIVE MANAGEMENT

# INTRAOPERATIVE MANAGEMENT

- STANDARD MONITORING
  - NIBP, EKG, ETCO<sub>2</sub>, O<sub>2</sub> SAT, TEMP
- POSITION : PRONE



Ward 09.12/1 - 7 (110) Code: ven. Op. No. 30-1  
 Anesthetic technique GA CETT ERTI Service: Ortho Tr.  
 Remark FES = 60 as usual covig (6mmHg): Not detected  
 Monitoring: NIBP, O<sub>2</sub> Sat, EKG, TCO, A-line, CVP, PAP, TEMP  
 Other: Force air warmer. ROOM No. 39

AGENTS/TIME	09.30	10.00	11.00	12.00	13.00
Desflurane	✓				
Sevoflurane					
Propofol					
Vecuronium					
O <sub>2</sub> Sat	96	100	100	100	100
IV FLUID INTAKE	NSF	300	N.M.S.S	500	M.P.N.S
BP	108/56				
PULSE	91				
START ANES	34				
START	32				
END ANES	24				
TEMP	36				
F/C URINE					
FLUID	57.0ml (2000ml) + 21.60 + kcl 34 + Mg 95 + ml held, IV. CATH. NO. 22, 20, 16 SITE 2H, 2H, 2A				

**IN OR 09.30**  
**Monitor BP 108/56 mmHg PR 91 BPM O2 sat 96% EKG SR**

PRECURARIZATION			
INDUCTION AGENT	Propofol 100		
INTUBATION AGENT	Vecuronium 100		
INTUBATION AGENT	Vecuronium 100		
SEDATIVE			
ANALGESIC	Vecuronium 100		
REVERSE	Atropine 1.2 + Neostigmine 2.5		
OTHER	Vasopressin: Ephedrine 30 mg + Ephedrine 12 mg		

CONSENT	<input checked="" type="checkbox"/> YES
PRE-OP VISIT	<input checked="" type="checkbox"/> YES
POSITION	<input checked="" type="checkbox"/> PRONE
LAB	<input checked="" type="checkbox"/> Hct <input checked="" type="checkbox"/> Blood Sugar
TOTAL URINE OUTPUT	150 ml

**TREATMENT**

- NS 1000 ml
- Transaminase 1 g @ 9.50 v
- Vecuronium 2.5 @ 7.55 v
- FFP 800 ml @ 2.51 m
- FFP 900 ml @ 2.56 m
- FFP 900 ml @ 3.02 m
- FFP 900 ml @ 3.02 m
- NS 1000 ml
- Infloran 1000 mg
- Transaminase 500 mg @ 2.40 v push. ml @ 2.00

Max dose Vecuronium = 24 mg  
 DTx at 08.00 212 mg  
 Prone position + point free eye, nose, mouth  
 DTx chest, abdomen, genitalia (FFP)  
 Approved by H.A. 2020



Ward 09.12/1 → (110) Code: ven. Op. No. 39-1  
 Anesthetic technique **GAZETT ERJ** Service: ortho Tr. Monitoring: **NIBP, O<sub>2</sub>Sat, EKG, TCO<sub>2</sub>, A-line, CVP, PAP, TEMP**  
 Remark **FES = 60** as usual covid (6 months): Not detected Other Force air warmer. ROOM No. 39

AGENTS/TIME	09:30	10:00	11:00	12:00
Propofol	100	100	100	100
Desflurane	0.5	0.5	0.5	0.5
Vecuronium	10	10	10	10
Morphine	6	6	6	6
Ephedrine	30	30	30	30
O <sub>2</sub> Sat	96	100	100	100
BP	108/56	82/50	82/50	82/50
PULSE	36	32	31	30
TEMP	36	36	36	36

IV FLUID INTAKE  
 In or 09:30  
 C 240  
 EVC 220  
 PULSE 36  
 START ANES 34  
 END ANES 26  
 TEMP 36

URINE: 300 ml  
 BLOOD: 300 ml  
 FLUID: 5% D1W2 (1000 ml) + 0.9% NaCl (300 ml) held, IV CATH NO. 22, 20, 16 SITE 2

PRECURARIZATION mg  
 INDUCTION AGENT Propofol 100 mg  
 INTUBATION AGENT 2% Lidocaine 100 mg  
 INTUBATION AGENT Air: O<sub>2</sub> 0.5:0.5 Des up to 6%  
 SEDATIVE mg  
 ANALGESIC fentanyl 100 mcg, Morphine 6 mg  
 REVERSE Atropine 1.2 mg + Neostigmine 2.5 mg  
 VASOPRESSOR: Ephedrine 30 mg, Ephedrine 12 mg

AIR WAY  NASAL  ORAL  
 UNDER MASK  LMA  
 TRACHEAL TUBE  NASAL  ORAL  
 & TECHNIQUE  BLIND  DIRECT  
 CUFF  PACK

OTHER BS (RT) = L. Dorsalis silviana type 6  
 SIZE 8 DEPTH 22 cm  
 TECHNICAL DIFFICULTY Nil

APGAR 1: 100%  
 FLUID SUMMARY  
 DEXTROSE - WATER -  
 DEXTROSE - SALINE 1700 ml  
 ACETATE/LRS -  
 WB PRQ 3.0  
 FFP = 2 U  
 553

- At 9.45 am
  - Induction : propofol 100 mg
  - Intubation : Succinylcholine 100 mg
  - Maintenance : Air:O<sub>2</sub> 0.5:0.5 desflurane up to 6%
  - AP 18 mmHg before prone position
  - Oral packing
  - Temperature monitoring
- At 9.50 am
  - Transamine 1 g
- At 9.55 am
  - ATB : cefazolin 2 g IV
- At 9.57am
  - BP 82/50 mmHg → ephedrine 6 mg

305 H. 1107  
 ④ FFP 87.8 (0.251 ml)  
 ⑤ LPRC 91.8 (0.250 ml)  
 ⑥ FFP 91.8 (0.302 ml)  
 ⑦ LPRC 91.8 (0.263 ml)  
 ⑧ RBC 1000 ml  
 ⑨ Infloran 1000 mg  
 ⑩ Transamine 500 mg (shortly push, ml 0.00)  
 - Max dose 0.5% Morphine = 24 ml  
 - DTx at hard 08.00 212 mg  
 - Prone position \* point free Eye, Nose, Mouth  
 DTx chest, Abdomen, Genitalia (P)  
 Approved 18.00.00

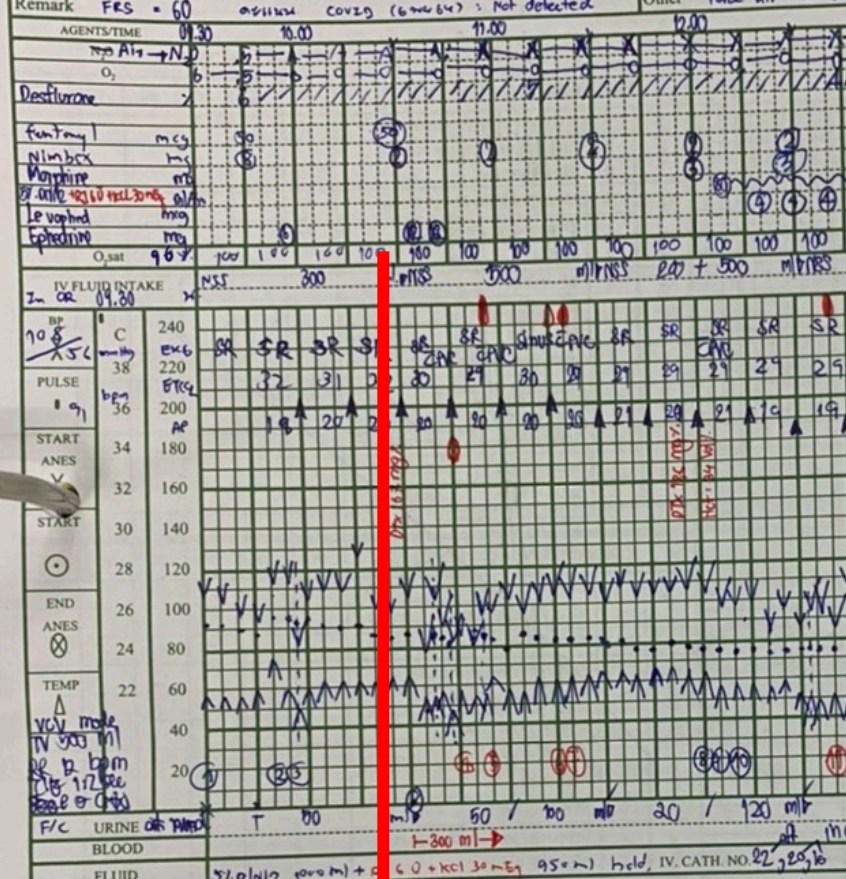


Ward No. 12/1 - 7 (10) Code: van Op. No. 30-1  
 Anesthetic technique BAETT ERJ Service: Ortho Tr. Monitoring: NIBP, O<sub>2</sub> Sat, EKG, TCCO, A-line, CVP, PAP, TEMP  
 Remark FRS = 60 as usual covg (6m64): Not detected Other Force air warmer ROOM No. 39  
 AGENTS/TIME 09:30 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00  
 Desflurane 0 0 0 0 0 0 0 0 0 0 0 0  
 Sevoflurane 0 0 0 0 0 0 0 0 0 0 0 0  
 Fentanyl mcg 50 50 50 50 50 50 50 50 50 50 50 50  
 Nitrous oxide ml 100 100 100 100 100 100 100 100 100 100 100 100  
 Morphine mg 0 0 0 0 0 0 0 0 0 0 0 0  
 Ephedrine mg 0 0 0 0 0 0 0 0 0 0 0 0  
 O<sub>2</sub> Sat 96.7 100 100 100 100 100 100 100 100 100 100 100  
 IV FLUID INTAKE In OR 09:30 X NSS 300 Z NSS 500 ml NSS 200  
 BP 108/58 108/58 108/58 108/58 108/58 108/58 108/58 108/58 108/58 108/58 108/58 108/58  
 PULSE 36 36 36 36 36 36 36 36 36 36 36 36  
 START ANES 34 180  
 END ANES 26 100  
 TEMP 22  
 URINE 0 0 0 0 0 0 0 0 0 0 0 0  
 BLOOD  
 FLUID 5% D1W 1000 ml + 2% C 0 + KCl 30 meq 950 ml held, IV. CATH. NO. 22, 25, 26 SITE LH, RH, RA  
 PRECURARIZATION mg  
 INDUCTION AGENT propofol 100 mg  
 INTUBATION AGENT rocuronium 100 mg  
 INITIAL ANESTHETIC AGENT Ar<sub>2</sub>O<sub>2</sub> 0.5 Des up to 6%  
 SEDATIVE mg  
 ANALGESIC fentanyl 100 mcg Morphine 6 mg  
 REVERSE Atropine 1-2 mg + Neostigmine 2.5 mg  
 Vasoactive: Ephedrine 30 mg Levosimendan 12 mg  
 AIR WAY  
 TRACHEAL TUBE & TECHNIQUE  
 OTHER BS (Rt = C) Jovanovic silicone tube 5 mm I.D.  
 SIZE 8 DEPTH 22 cm  
 TECHNICAL DIFFICULTY Nil stylet LV air 1 bag mounted on BLT  
 EPIDURAL SPINAL LA OTHER  
 SITE Saphiric site NEEDLE No. 29  
 ATTEMPT Multiple BY n.p.m.r.a.d  
 DRUG 0.5% Morcaine 20 ml  
 ANEST LEVEL: PRE-OP  
 POST OP  
 BABY DELIVERED TIME (7) LRC gr. B' @ 2:53 m  
 (8) Deflazolin 1 mg Qm  
 (9) 11:17  
 APGAR  
 FLUID SUMMARY  
 DEXTROSE - WATER  
 DEXTROSE - SALINE 1700 ml  
 ACETATE/LRS  
 WB PRQ 3 U F16  
 FFP 2 U 553  
 TREATMENT  
 (1) NS 1000 ml @  
 (2) Transamine 1 g @ st 9.50 v  
 (3) referin 2 g @ st 7.55 u  
 (4) FFP gr. B' @ 2.51 m  
 (5) UPRC gr. B' @ 2.55 m  
 (6) FFP gr. B' @ 3.02 m  
 (7) LRC gr. B' @ 2:53 m  
 (8) NSS 1000 ml @  
 (9) Infloran 1000 mg @  
 (10) Transamine 500 mg @ daily push ml @ 0.0  
 Max dose 0.5% Morcaine = 24 ml  
 O<sub>2</sub> at hand 08:00 212 mg?  
 Prone position 7 point free Eye, Nose, Mouth, chest, Abdomen, Genitalia (MS)  
 APPROXIMATE 15 min 4.00

**At 10.00 am**

- Prone position
- 7 points free
- AP 20 mmHg
- Equal both lung
- V/S BP 109/60 HR 82





**At 10.30 am start operation**

- V/S BP 109/65 HR 82
- Fentanyl 50 mcg
- DTX 87 mg%

**At 10.35am**

- BP 80/50 mmHg → ephedrine 12 mg

**At 10.40 am**

- BP 82/47 mmHg → ephedrine 12 mg

**At 10.45 am**

- 300 ml Bleeding
- LPRC 1 U , FFP gr B+ 1 U

PRECURARIZATION	mg	<input type="checkbox"/> EPIDURAL <input type="checkbox"/> SPINAL <input checked="" type="checkbox"/> OTHER
INDUCTION AGENT	Propofol 100 mg	SITE Supradle site NEEDLE No.29
INTUBATION AGENT	Sch 100 mg	ATTEMPT Multiple BY 11.11.2020
INTUBATION AGENT	Ar 0.2 0.5 : 0.5 Des upto 6 mg	DRUG 0.5% Marcaine 20 ml
ANALGESIC (fentanyl 100 mcg, Morphine 6 mg)	mg	ANEST LEVEL : PRE-OP
REVERSE Atropine 1.2 mg + Neostigmine 2.5 mg	mg	POST OP
Vasopressor : Ephedrine 30 mg, Ephedrine 12 mg	mg	BABY DELIVERED TIME (1) LPRC gr B+ 263 ml
AIR WAY <input type="checkbox"/> NASAL <input type="checkbox"/> ORAL		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE (2) Deflazim 100 mg
TRACHEAL TUBE & TECHNIQUE <input checked="" type="checkbox"/> CUFF <input type="checkbox"/> PACK		APGAR 9.5/10
OTHER BS (Rt = G) 2000 ml silone type C		FLUID SUMMARY
SIZE 8 DEPTH 22 cm		DEXTRROSE - WATER -
TECHNICAL DIFFICULTY Nil		DEXTRROSE - SALINE 1300
		ACETATE/LRS -
		WBFRQ 3 U 776
		FFP = 2 U 553

**TREATMENT**

- NS 1000 ml
- Transamine 1 g @ 2.50 v
- rephedrin 2.5 @ 2.55 u
- FFP gr B+ @ 251 ml
- LPRC gr B+ @ 250 ml
- FFP gr B+ @ 302 ml
- LPRC gr B+ @ 263 ml
- NS 1000 ml
- Inflagan 1000 mg
- Transamine 500 mg @ slowly push. mid @
- Max dose of Marcaine = 24 ml
- DTX at 08.00 212 mg%
- Prone position + point free; Eye, Nose, Mouth, chest, Abdomen, Genitalia (FFP)
- Approved to ...



Ward 02.12.1 - 7 (10) Code: 020 Op. No. 30-1  
 Anesthetic technique GAETT ERJ Service: Ortho Tr.  
 Monitoring: NIBP, O<sub>2</sub> Sat, EKG, TCO<sub>2</sub>, A-line, CVP, PAP, TEMP  
 Remark FRS = 60 asinin covg (6mmHg): not detected Other Force air w/airway  
 ROOM No. 39  
 1400 CONSENT

AGENTS/TIME	09:30	10:00	11:00	12:00
Desflurane				
Propofol				
Vecuronium				
Morphine				
Levophed				
Ephedrine				
O <sub>2</sub> sat	96%	100	100	100

IV FLUID INTAKE	09:30	10:00	11:00	12:00
NS	300	300	300	300
MNSS				
Other				

BP	C	240	220	200	180	160	140	120	100	80	60	40	20
108/55	38	37	31	27	27	27	27	27	27	27	27	27	27
PULSE	89	86	86	86	86	86	86	86	86	86	86	86	86
START ANES	34	32	30	28	26	24	22	20	18	16	14	12	10
END ANES	26	24	22	20	18	16	14	12	10	8	6	4	2
TEMP	36	36	36	36	36	36	36	36	36	36	36	36	36

URINE	09:30	10:00	11:00	12:00
Output	0	0	0	0

PRECURARIZATION	mg	mg	mg	mg
INDUCTION AGENT	Propofol	100		
INTUBATION AGENT	Vecuronium	100		
INITIATION AGENT	Ar <sub>2</sub> O <sub>2</sub>	0.5	0.5	Des up to 6%
ANALGESIC	Morphine	6		
REVERSE	Atropine 1.2 mg + Neostigmine 2.5 mg			
SEDATIVE	Vecuronium	100		
OTHER	Vecuronium 30 mg, Levophed 12 mg			

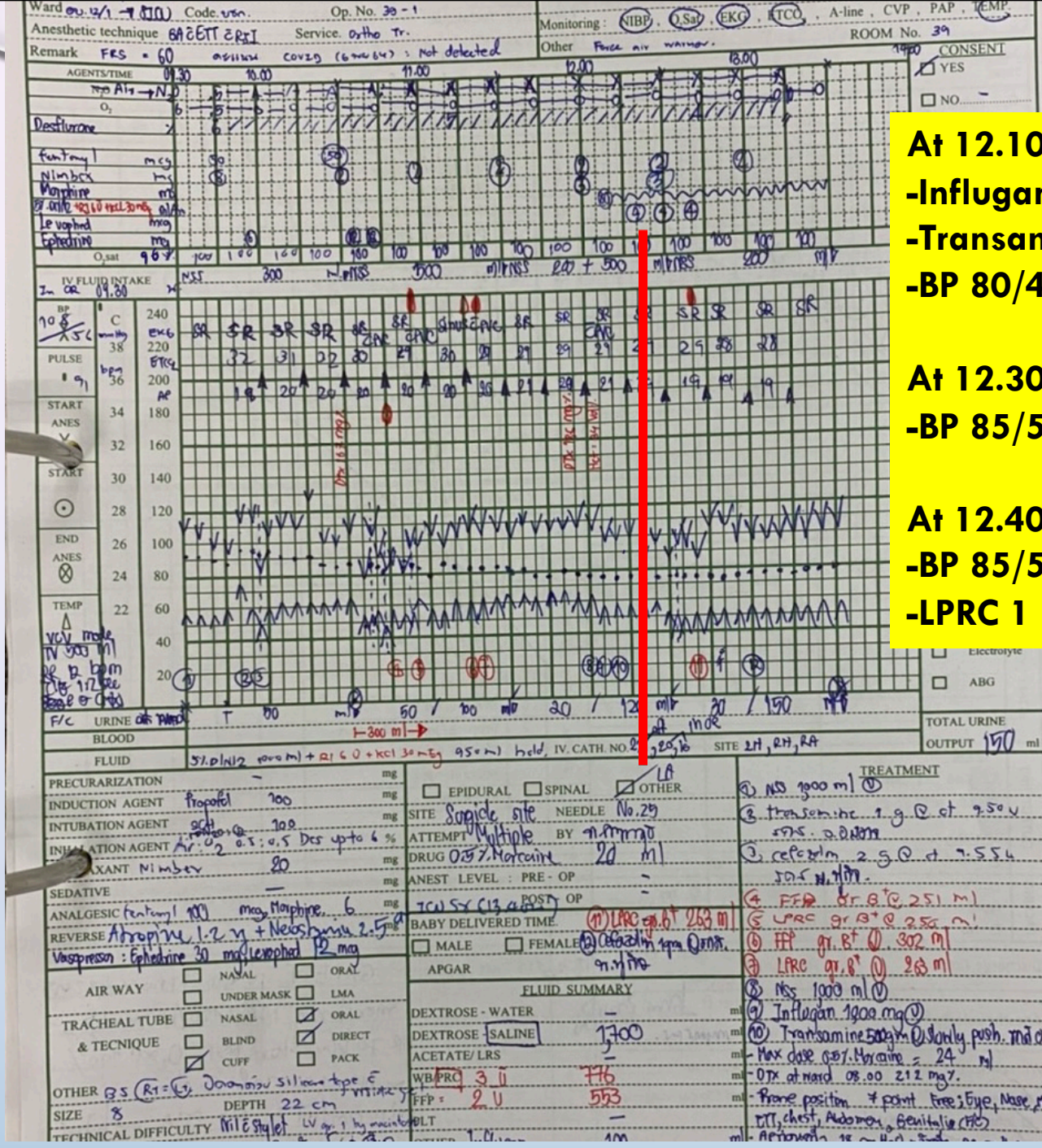
  

TREATMENT
1. NS 1000 ml
2. Transamine 1 g @ 9.50 v
3. Vecuronium 2.5 @ 7.5.5.4
4. FFP 4 x 8 @ 2.5.1 ml
5. LPRC 91.8 @ 2.5.5.1 ml
6. FFP 91.8 @ 3.02 ml
7. LPRC 91.8 @ 2.63 ml
8. NS 1000 ml
9. Inj Papan 1000 mg
10. Transamine 500 mg @ slowly push. ml 0.00
Max dose 0.57 Morphine = 24 mg
DTX at hard 08.00 212 mg
Prone position + point free 3 type, nose, no
ETT, chest, abdomen, genitalia (FF)
APGAR 10 - 10

At 11.15am  
 - LPRC 1 U , FFP gr B+ 1 U

At 12.00 am  
 - Hct หลังเลือดหมด 34%  
 - DTX 126 mg%  
 - MO 5 mg





At 12.10 pm  
 -Influgan 1 g IV  
 -Transamine 500 mg iv slowly push  
 -BP 80/47 mmHg → levophred 4 mcg iv

At 12.30 pm  
 -BP 85/52 mmHg → levophred 4 mcg iv

At 12.40 am  
 -BP 85/50 mmHg → levophred 4 mcg iv  
 -LPRC 1 U



Ward 02/1 -> (T10) Code van. Op. No. 39-1  
 Anesthetic technique **BAEETT ERSI** Service. ortho Tr.  
 Monitoring: NIBP, J.Sat, EKG, TCCO, A-line, CVP, PAP, TEMP.  
 Other Face air warmer. ROOM No. 39  
 Remark FES = 60 as usual cov29 (6m64): not detected

AGENTS/TIME	09.30	10.00	11.00	12.00	13.00
Propofol	100	100	100	100	100
Desflurane					
Fentanyl	30	30	30	30	30
Morphine					
Levophed					
Ephedrine					
O <sub>2</sub> sat	98%	100	100	100	100

IV FLUID INTAKE  
 In OR 09.30  
 1000 ml NS, 300 ml NSS, 500 ml NSS, 200 ml NSS + 500 ml NSS

BP	C	PULSE	START ANES	START	END ANES	TEMP
108/55	240	38	34	30	26	36
91	220	32	32	28	24	36
	200	31	32	28	24	36
	180	27	32	28	24	36
	160	27	32	28	24	36
	140	27	32	28	24	36
	120	27	32	28	24	36
	100	27	32	28	24	36
	80	27	32	28	24	36
	60	27	32	28	24	36
	40	27	32	28	24	36
	20	27	32	28	24	36

F/C URINE 0 ml  
 BLOOD  
 FLUID 5% D1W 1000 ml + 200 ml + KCl 30 mg 950 ml held, IV. CATH. NO. 22, 25, 16 SITE 2H, 2H, 2A

PRECURARIZATION	INDUCTION AGENT	INTUBATION AGENT	INTUBATION AGENT	SEDATIVE	ANALGESIC	REVERSE	AIR WAY	TRACHEAL TUBE & TECHNIQUE	OTHER
-	Propofol 100	Propofol 100	Propofol 100	-	Fentanyl 100, Morphine 6	Atropine 1.2 mg + Neostigmine 2.5 mg	NASAL	NASAL, ORAL	BS (RT) = 4, 20mmHg silico type E

PRECURARIZATION mg  
 INDUCTION AGENT mg  
 INTUBATION AGENT mg  
 INTUBATION AGENT mg  
 SEDATIVE mg  
 ANALGESIC mg  
 REVERSE mg  
 AIR WAY mg  
 TRACHEAL TUBE & TECHNIQUE mg  
 OTHER mg

EPIDURAL  SPINAL  OTHER  LA  
 SITE Sagittal site NEEDLE No. 29  
 ATTEMPT Multiple BY n.m.m.m.  
 DRUG 0.5% Marcain 20 ml  
 ANEST LEVEL: PRE-OP -  
 TCCO SX C13 & POST OP  
 BABY DELIVERED TIME  
 MALE  FEMALE  
 APGAR 9/10

FLUID SUMMARY  
 DEXTROSE - WATER ml  
 DEXTROSE - SALINE 1700 ml  
 ACETATE/LRS ml  
 WB/PRC 3 U 776 ml  
 FFP = 2 U 553 ml

TREATMENT  
 1. NS 1000 ml  
 2. Transamine 1 g @ st. 7.50 v  
 3. ceftazim 2 g @ st. 7.55 u  
 4. FFP gr. B<sup>+</sup> 251 ml  
 5. LRS gr. B<sup>+</sup> 250 ml  
 6. FFP gr. B<sup>+</sup> 302 ml  
 7. LRS gr. B<sup>+</sup> 268 ml  
 8. NS 1000 ml  
 9. Infilgan 1000 mg  
 10. Transamine 500 mg @ slowly push. ml @ 0  
 - Max dose cef. Marcain = 24 ml  
 - DTx at ward 08.00 212 mg  
 - prone position \* point free eye, nose, ear  
 - RTT, chest, Abdomen, Genitalia (PES)  
 - Arteriovenous to head - End...

At 13.30 pm End operation  
 -Operation time 4 hr  
 -total fluid intake 3209 ml  
 -no complication  
 -EBL 850 ml

# POST OPERATIVE DAY 0

- **s** : ผู้ป่วยมีภาวะเพื่อ **Delirium** ตามตอบไม่รู้เรื่อง จำไม่ได้ ไม่มีไข้
- **o** : V/S BT 36.8 ° C BP 100/60 PR 80 bpm RR 16/min O<sub>2</sub> Sat 100%
  - GA: drowsiness, disorient to time, place and person
  - HEENT : pale conjunctiva, no icteric sclera
  - Heart : normal S1 S2, no murmur
  - lung :clear Abd : soft, not tender
  - Ext: no bloody discharge per wound
- **A** : S/P ORIF with P&S : postop delirium
- **P** : hold PCA morphine
  - Control pain : Acupan 60 mg iv+NSS 500 ml iv drip in 24 hr
  - MO 2 mg iv prn q 2 hr
  - NPO
  - Omeprazole 40 mg IV OD
  - Restrain
  - Observe neuro sign

# POST OPERATIVE DAY 1

- **S** : ผู้ป่วยเริ่มตื่นดี ถามตอบรู้เรื่อง ปวดแผลมาก PS at rest =5, movement=10
- **O** : V/S BT 36.5 ° C BP 110/70 PR 85 bpm RR 16/min  
GA: good consciousness, orient to time, place and person  
HEENT : pale conjunctiva, no icteric sclera  
Heart : normal S1 S2, no murmur  
Lung :clear Abd : soft, not tender  
Ext: no bloody discharge per wound  
Lab Hct 27.4% DTX 178 mg%
- **A** : S/P ORIF with P&S day 1 : clinical stable
- **P** : LPRC 1 U  
On PCA MO dose 2 mg, lockout interval 5 min , bolus 40 mg /4 hour  
basal rate 0.5 mg/hr  
ondansetron 4 mg iv prn q 6 hr  
CPM 10 mg iv prn q 6 hr  
Soft diet



# POST OPERATIVE DAY 2

- **S** : ผู้ป่วยตื่นรู้สึกตัวดี กินได้ ไม่ปวดแผลเวลานอนเฉยๆ PS at rest =0, movement=2 , มีคลื่นไส้ อาเจียนเมื่อตื่น เข้านี้ไม่มีคลื่นไส้อาเจียนแล้ว

**O**: V/S BT 36.5 ° C BP 110/70 PR 85 bpm RR 16/min

GA: good consciousness, orient to time, place and person

HEENT : mild pale conjunctiva, no icteric sclera

Heart : normal S1 S2, no murmur

lung :clear abd : soft, not tender

Ext: no bloody discharge per wound

Lab Hct 30.5% DTX 168 mg%

- **A** : S/P ORIF with P&S : clinical stable

- **P** : off IV, off foley cath, off RD, off PCA

control pain : dynastat 40 mg iv q 12 hr , ultracet 1 tab po q 8 hr

MO 4 mg iv prn q 4 hr, plasil 10 mg iv prn q 8 hr

soft diet ต่อ

consult PMR for non-weight bearing ambulation

# TAKE HOME MESSAGE

- Older age often have multiple comorbid conditions must be considered in perioperative care
- Perioperative complication related to preexisting cardiac and pulmonary complications include MI, DVT, PE and Delirium
- Early surgery(<24 hours) reduce pain and length of stay hospital
- Delay surgery for > 4 days have a nearly 2.5 times higher risk of death within 30 days
- Complication of prone position : Airway, neck, eyes, abdomen ,upper extremity and lower extremity

# REFERENCES



Miller's Anesthesia, Ninth Edition,  
Manuel C.Pardo, Jr., Ronald D. Miller



Clinical Anesthesia, Eight Edition, Paul  
G Barash



**THANK YOU**