

Case review

서울아산병원
호흡기내과
R3 이보영

Chief Complaint

F/29

호흡 곤란 (**onset** :내원 2일전)

Present illness

재태 25주 + 5일 임신부로 내원 5주 전부터 기침, 콧물 시작되었으나 특별한 약물 치료 하지 않고, 경과 관찰 중 내원 3주 전부터 MRC grade 2~3의 호흡곤란 발생하여 타 대학병원 방문하여 심장 및 갑상선에 대한 검사 시행하였으나 특별한 이상 보이지 않음.

내원 11일전부터 기침, 호흡곤란 악화되어 같은 병원 방문하여 폐렴 진단받고 항생제 치료 (Ceftriaxone + Azithromycin) 중 본원 진료 원하여 전원 옴.

Present illness

기침 및 호흡곤란 흉부 X-선 침윤 있으나 발열, 가래 등이 뚜렷하지 않아 비전형 폐렴으로 판단하여 항생제 치료 후 내원 4일전 호전 경과 보여 퇴원함.

퇴원 후 cefpodoxime proxetil (Banan[®]) 복용 중 내원 2일전부터 기침, 흰 가래, 코막힘, 호흡곤란 다시 시작되고, 내원 당일 MRC grade 4~5로 호흡곤란 악화되어 응급실 내원함.

Past history

DM/HTN/Tuberculosis/Hepatitis (-/-/-/-)

약물 복용력 (-)

Para 1 - 0 - 0 - 1

Social history

흡연력 (-)

음주력 (-)

여행력 (-)

주부

거주지 : 서울 강동구 암사동, 15년 가량 된 주택

가습기 사용: 가습기 세정제 이용하며 사용

Family history

없음.

Review of systems

General

Weight loss (-)

Chills (-)

Fever (-)

Fatigue (-)

Head/Eye/ENT

Headache (-)

Rhinorrhea (-)

Sore throat (-)

Visual disturbance (-)

Dry mouth (-)

Oral ulcer (-)

Respiratory

Hemoptysis (-)

Wheezing (-)

Review of systems

Cardiovascular

Chest pain(-)

Palpitation(-)

Gastrointestinal

Anorexia(-)

Nausea(-)

Vomiting(-)

Constipation(-)

Diarrhea(-)

Abdominal pain(-)

Genitourinary

Frequency(-)

Dysuria(-)

Musculoskeletal

Raynaud phenomenon(-) Arthralgia (-)

Physical examination

Initial Vital Signs

143/86 mmHg – 117 회/min - 28 회/min – 37.3 °C

General appearance

Appearance: acute-ill looking

Mental status: alert

Head/Eye/ENT

Conjunctiva: pale

Sclera: anicteric

Tonsillar hypertrophy (-)

Pharyngeal injection (-)

Cervical LN (-)

Jugular vein distention (-)

Physical examination

Chest

Symmetric expansion without retraction

Rt. upper, ant. coarse breathing sound
with inspiratory crackle and expiratory wheezing

Heart

Regular rhythm

Normal heart sound without murmur

Abdomen

Normoactive bowel sound

Soft and flat

No organomegaly

Tenderness / rebound tenderness (-/-)

Physical examination

Back /Extremities

Costovertebral angle tenderness (-/-)

Pretibial pitting edema (-/-)

Skin

Rash/Petechiae (-/-)

Initial laboratory data

CBC WBC $16.0 \times 10^3 /\text{mm}^3$ - Hb 13.6 g/dl - Platelet $336 \times 10^3 /\text{mm}^3$
(Neutrophil 72.7% lymphocyte 20.6% monocyte 4.6% eosinophil 1.9%)

Chemistry

Calcium 9 mg/dL	Phosphorous 3.8 mg/dL
Creatinine 0.3 mg/dL	BUN 7 mg/dL
Protein 6.4 g/dL	Albumin 2.9 g/dL
AST (SGOT) 23 IU/L	ALT (SGPT) 18 IU/L
ALP 100 IU/L	Bilirubin, total 0.3 mg/dL

Electrolyte

Sodium 138 mmol/L	Potassium 3.9 mmol/L
Chloride 105 mmol/L	Total CO2 20.9 mmol/L

CRP(quant) 1.95 mg/dL	D-dimer 0.97 ug/mL
Procalcitonin <0.05 ng/mL	lactic acid : 1.6 mmol/L

ABGA 7.48 – 29 mmHg – 45 mmHg – 22mmEq/L - 84%

Initial chest x-ray

Admission 12days ago (2011.3.31)



Admission 7days ago (2011.4.4)



Admi:



Initial problem list

#1. Dyspnea with hypoxemia

#2. Cough

#3. Diffuse ground glass opacity on chest x-ray

#4. Leukocytosis

#5. Pregnancy

Initial assessment & plan

- #1. Dyspnea with hypoxemia
- #2. Cough
- #3. Diffuse ground glass opacity on chest x-ray
- #4. Leukocytosis

A> Atypical pneumonia, partially controlled

P>

1. Diagnostic plan

- recheck atypical pneumonia lab, PCR
- respiratory virus multiplex RT-PCR
- blood culture and repeat sputum culture, AFB smear culture

2. Therapeutic plan

- Change of antibiotics → Levofloxacin
- O₂ supplement

Initial assessment & plan

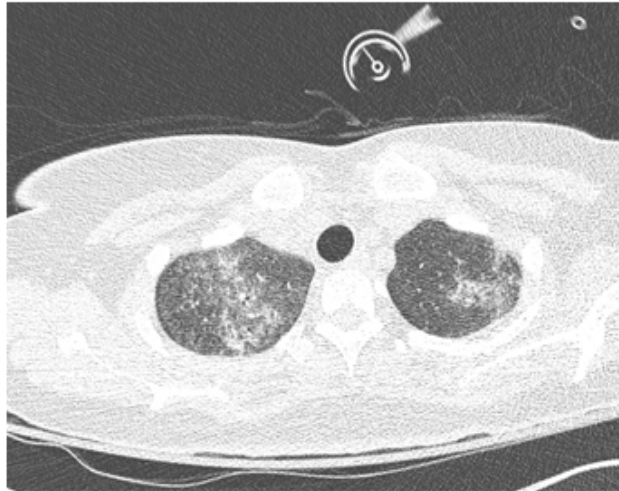
#5. Pregnancy

A> Pregnancy (PA 25+5 weeks)

P>

Consult OBY for US to check fetal well-being

Hospital course (chest CT, 2011.4.13)



Hospital course

HD #9 (2011.4.19)

오후 1시경

Inspir. pressure 26
cmH₂O, PEEP 4 cmH₂O,
TV 420 mL

ABGA > FiO₂ 55%

7.02 - >115 mmHg - 65
mmHg -38 mEq/L -80%

Hypercapnic

Respiratory failure로

VV ECMO insertion

Lt. lingular BAL 시행함

HD #12 (2011.4.22)

Antiviral agent

IVIg 500 mg/kg q 48hr

Total 5 doses

Try ECMO weaning

RBC	90 /mm ³
WBC	130 mm ³
Neutrophil	44%
Eosinophil	4%
Alveolar macrophage	49%

HD #15 (2011.4.25)

ECMO weaning 위하여
flow 0로 유지하던 중
desaturation, BP drop.

CXR >

bilateral pneumothorax

Rapidly progressive

respiratory failure

with lung fibrosis,

with pneumothorax

→ chest tube insertion

Hospital course

HD #22 (2011.5.2)

ECMO > FiO₂ 60%

gas flow 10L/min

Ventilator > FiO₂ 40%,

PEEP 4 cmH₂O,

Insp. pressure 22 cmH₂O,
TV 350mL

ABGA > FiO₂ 40%

7.49 - 45 mmHg - 76 mmHg
- 24 mEq/L - 95%

Hematuria 지속되어

ECMO off.

ABGA > FiO₂ 50%

7.41 - 52 mmHg - 90 mmHg
- 34 mEq/L - 97%

HD #24 (2011.5.4)

Ventilator > FiO₂ 50%,

PEEP 4 cmH₂O,

Insp. pressure 26 cmH₂O,

TV 230mL

ABGA > FiO₂ 50%

7.22 - 106 mmHg -

93 mmHg - 43 mmEq/L -
96%

→ change to VCV mode
(TV 300 mL), plateau
pressure 34 cmH₂O

ABGA > FiO₂ 50%

7.33 - 85 mmHg -

114 mmHg - 45 mmEq/L -
98%

HD #27 (2011.5.7)

ABGA > FiO₂ 45%

7.37 - 88 mmHg - 92 mmHg
- 51 mmEq/L - 97%

Rapidly progressive
respiratory failure with
lung fibrosis 로

Lung transplantation

Transplantation 전 f/u
chest CT 시행

Updated problem list

#1. Dyspnea with hypoxemia

→ Rapidly progressive respiratory failure with lung fibrosis

#2. Cough

→ #1

#3. Diffuse ground glass opacity on chest x-ray

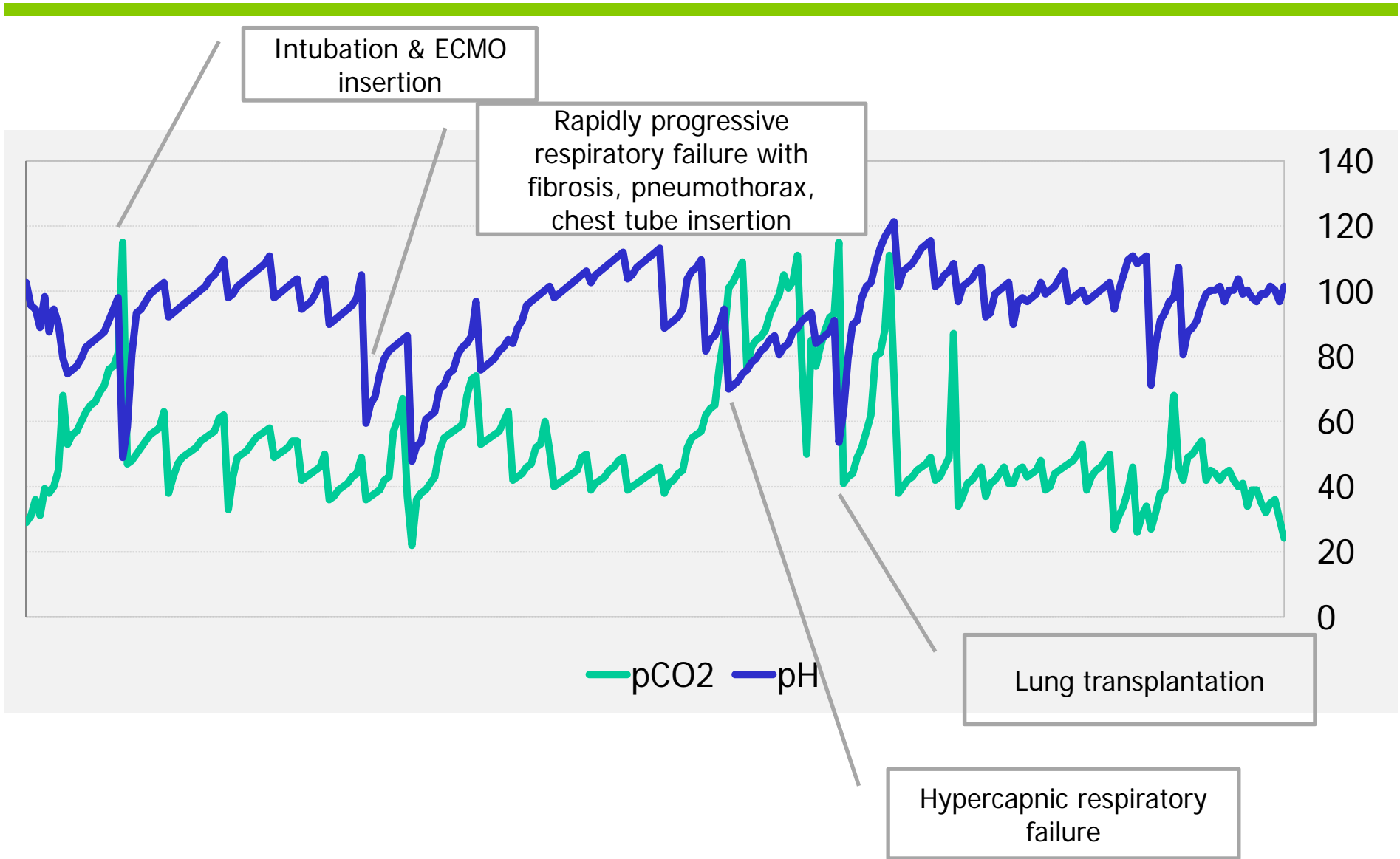
→ #1

#4. Leukocytosis

→ #1

#5. Pregnancy

→ s/p emergent Cesarean section



HD #28 POD#1 (2011.5.8)

O> V/S: 99/65 mmHg - 101 회/min
- 20 회/min - 36.2°C

Fully sedated state

BFS>

Intact anastomosis site, moderate
ischemic change of mucosa

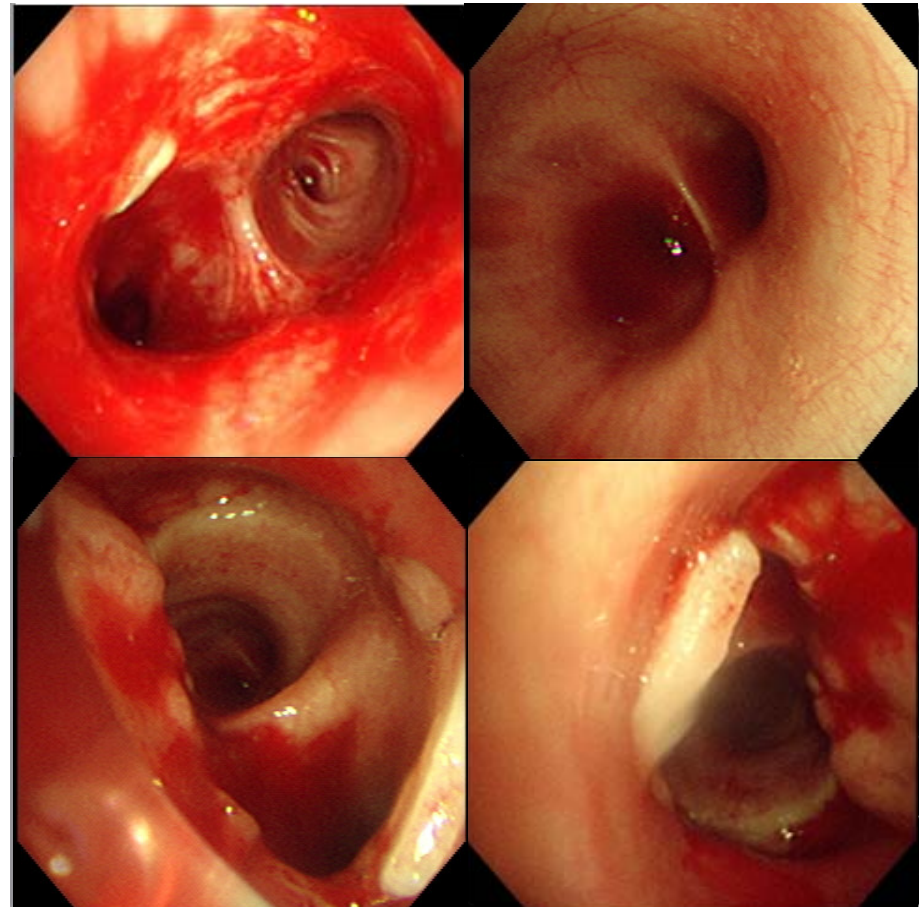
Ventilator: VCV mode

TV 480 mL, FiO₂ 50%, PEEP 10
cmH₂O, Plateau pr. 24 cmH₂O

A> Rapid progressive resp. failure
s/p Lung transplantation

P> 1. Start prophylactic antibiotics
(voriconazole)

2. Keep NO for pul. HTN



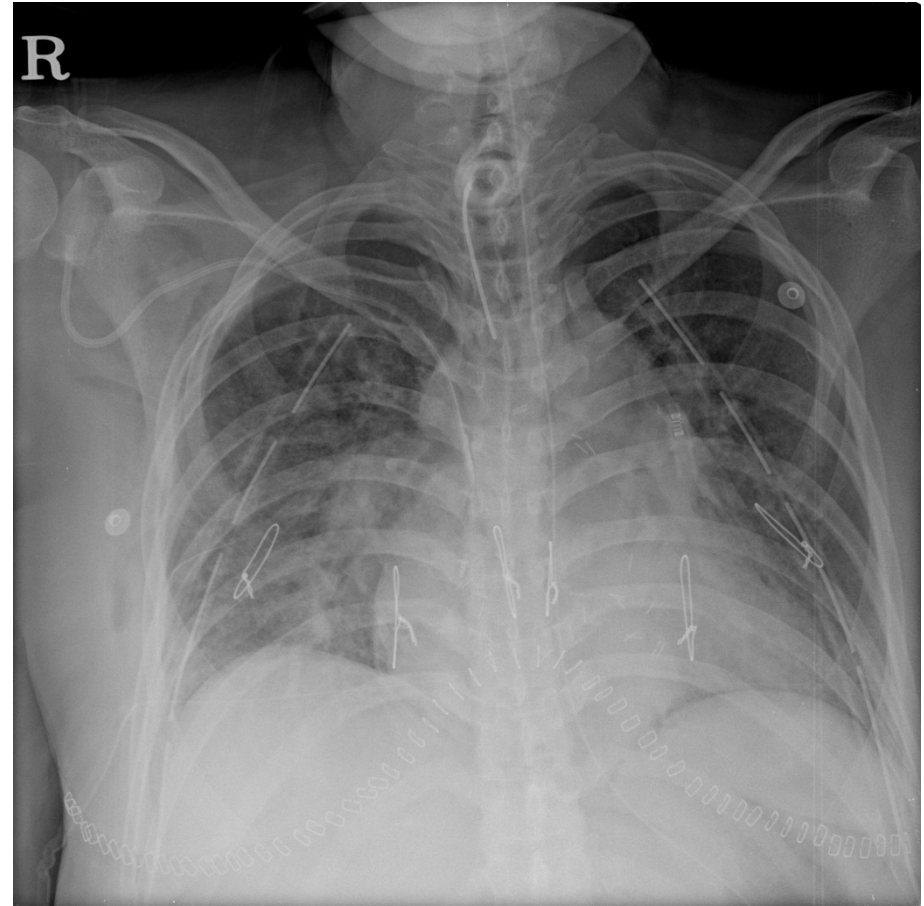
HD #29 POD#2 (2011.5.9)

- O> V/S: 110/68mmHg -91 회/min -
15 회/min - 36.2°C
수술 전 bleeding으로 heparin
free로 ECMO유지하였고 pretibial
pitting edema있어 시행한 CT에서
DVT있어 IVC filter insertion 시행
BFS>
No significant change
- A> Rapid progressive resp. failure
s/p Lung transplantation
- P> 1.immunosuppressant
(Mycophenolate mofetil +
tacrolimus)
2. TDM f/u

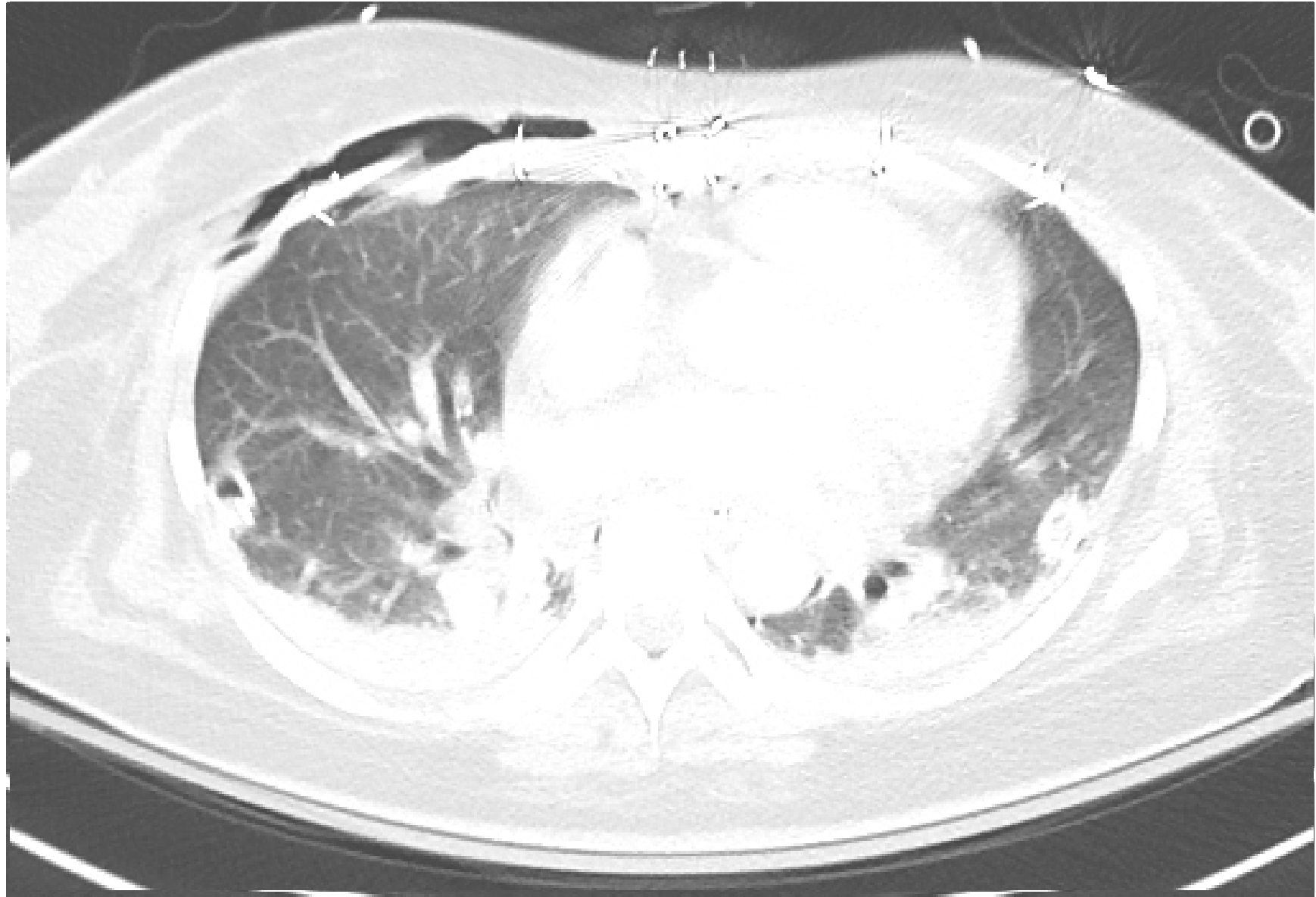


HD #35 POD#9 (2011.5.16)

- S> 언제 병실로 가나요?
- O> V/S: 113/62 mmHg - 95 회/min
-16 회/min - 36.7°C
chest tube에서 air leakage
간헐적으로 지속됨
- A> Rapid progressive resp. failure
s/p Lung transplantation
persistent air leakage
- P> 1. 우선 air leakage에 대하여
CS상의, observation 하기로 함.
2. Gancyclovir for CMV
prophylaxis



HD #38 POD#11 (2011.5.18)



HD #39 POD#12 (2011.5.19)

S> 수술한 곳이 아파요

O> V/S: 122/70 mmHg -
111 회/min - 24 회/min - 36.4 °C

OP>

Wedge resection, RUL, VATS

수술 후 Air leak (-)

A> Rapidly progressive RF
s/p Lung transplantation
s/p Wedge resection of
bullae (2011.5.19)

P> 1. General condition

호전되면 ventilator
weaning 시도

2. Pulmonary rehabilitation 시작



HD #46 POD#19 (2011.5.26)

S> 숨차지 않아요

O> V/S: 122/76 mmHg -

101 회/min - 14 회/min - 36.5 °C

T-piece FiO2 35%

ABGA>

7.46 - 42mmHg - 95 mmHg

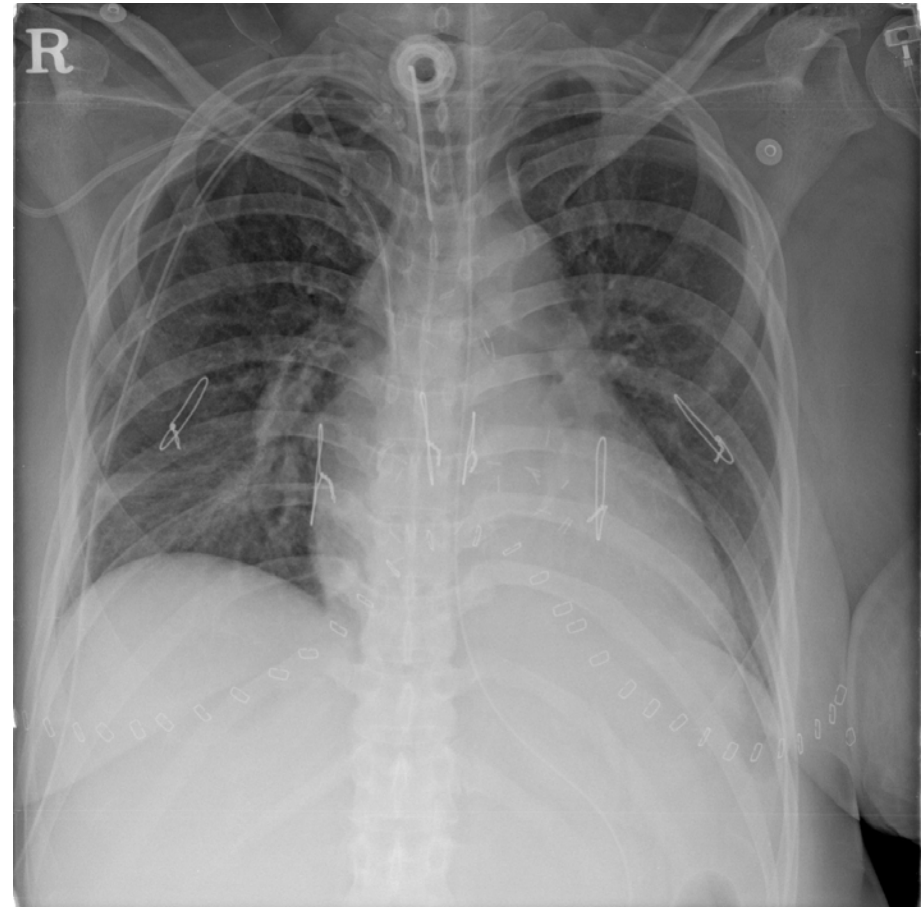
- 30 mmEq/L - 97%

A> s/p Lung transplantation,
weaning phase

s/p Wedge resection of
bullae

P> 1. T-piece 유지

2. Weaning trial



HD #50 POD#23 (2011.5.30)

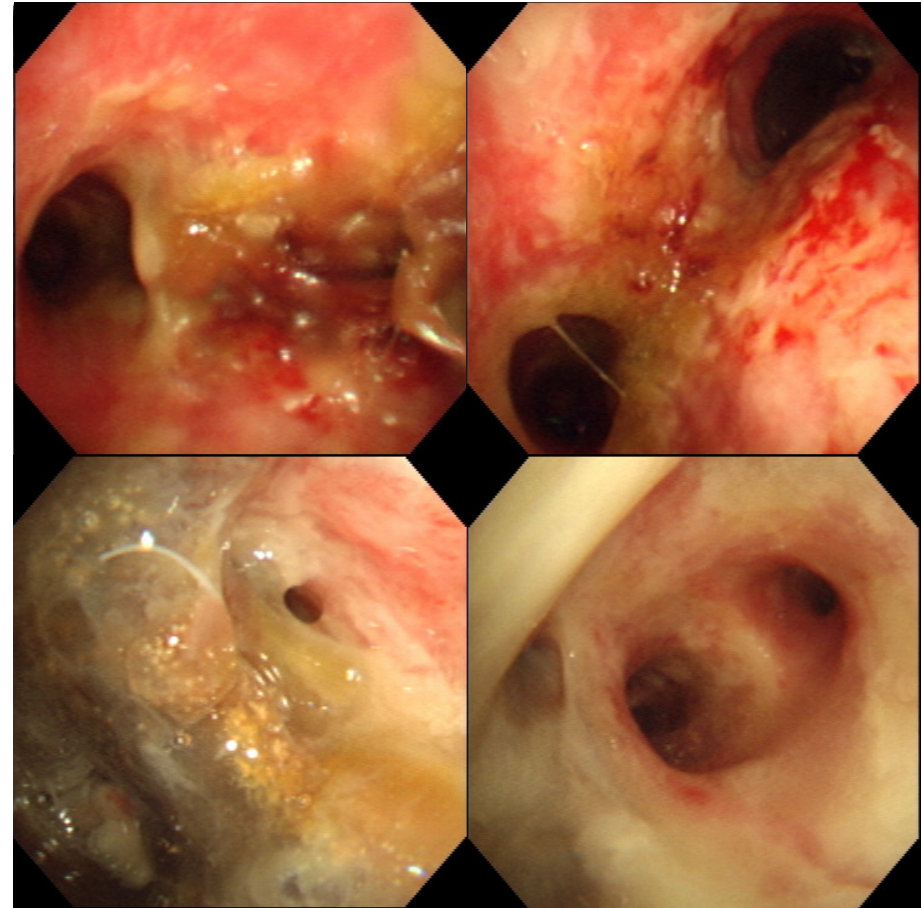
S> 가래 잘 안 나와요

O> BFS>

mucous plugging & clot at
carina, RBI near total
obstruction d/t mucous
plugging.

A> s/p Lung transplantation,
weaning phase
s/p Wedge resection of bullae

P> 1. High flow nasal
cannula 이용, humidification
& O₂ supplement (FiO₂ 30%)



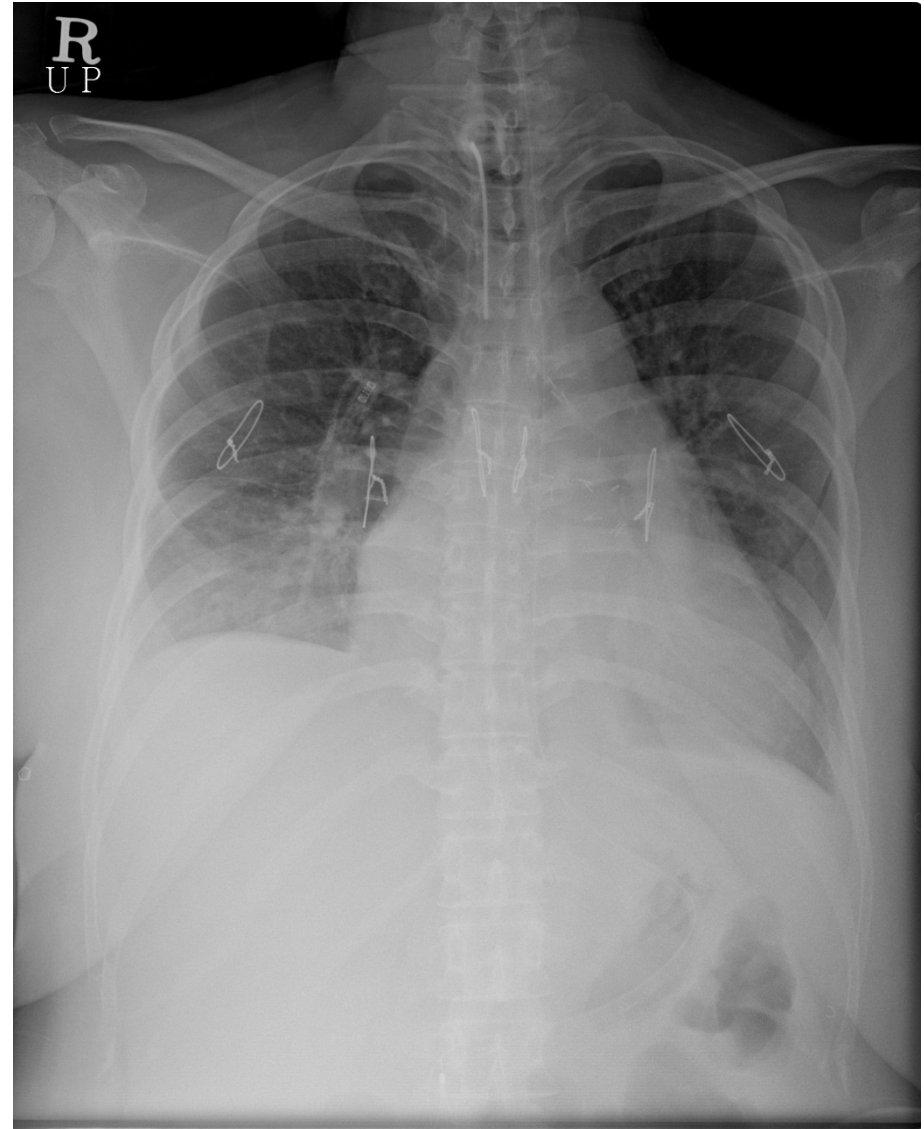
HD #61 POD#34 (2011.6.10)

S> 괜찮아요

O> V/S: 123/72 mmHg -
101 회/min - 16 회/min - 36.6 °C
SpO₂ 94% at room air

A> s/p Lung transplantation,
improving state
s/p Wedge resection of bullae

P> 1. General ward transfer



HD #73 POD#46 (2011.6.22)

S> 괜찮아요

O> V/S: 150/90 mmHg - 99 회/min - 22 회/min - 36.4 °C
SpO₂ 97% at room air

A> s/p Lung transplantation
s/p Wedge resection of bullae

P> 1. T cannula removal

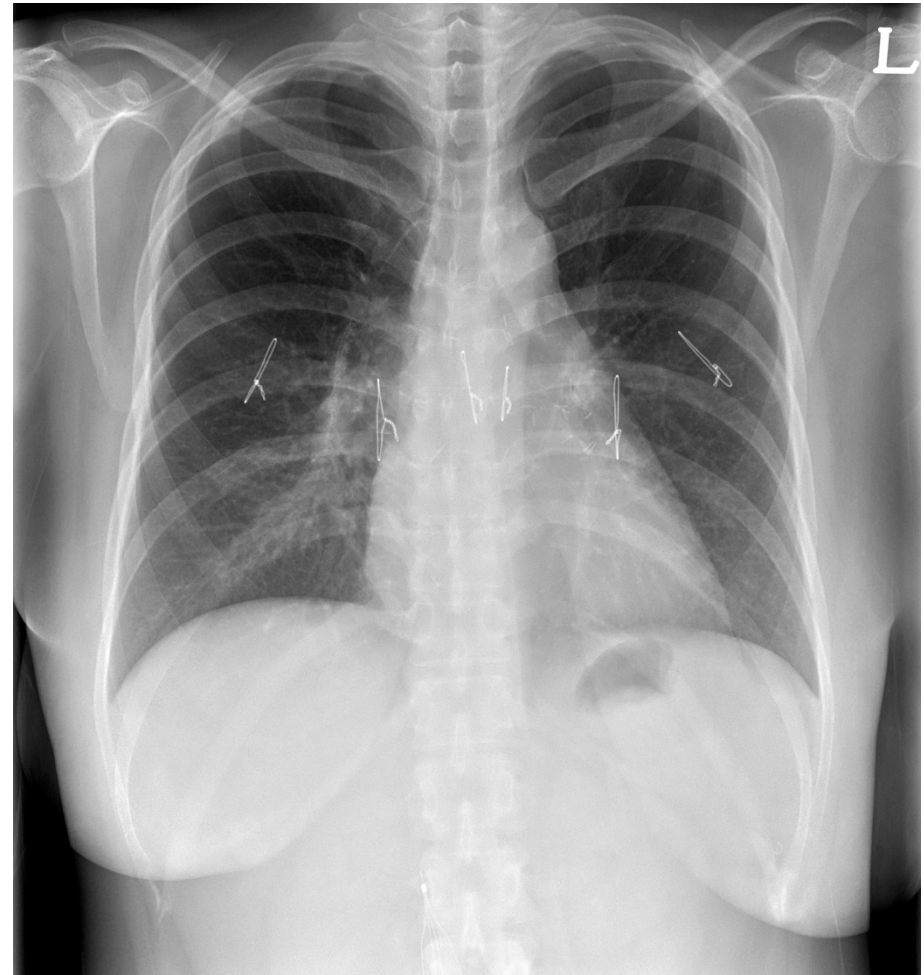
HD #83 POD#56 (2011.7.2)

S> 괜찮아요

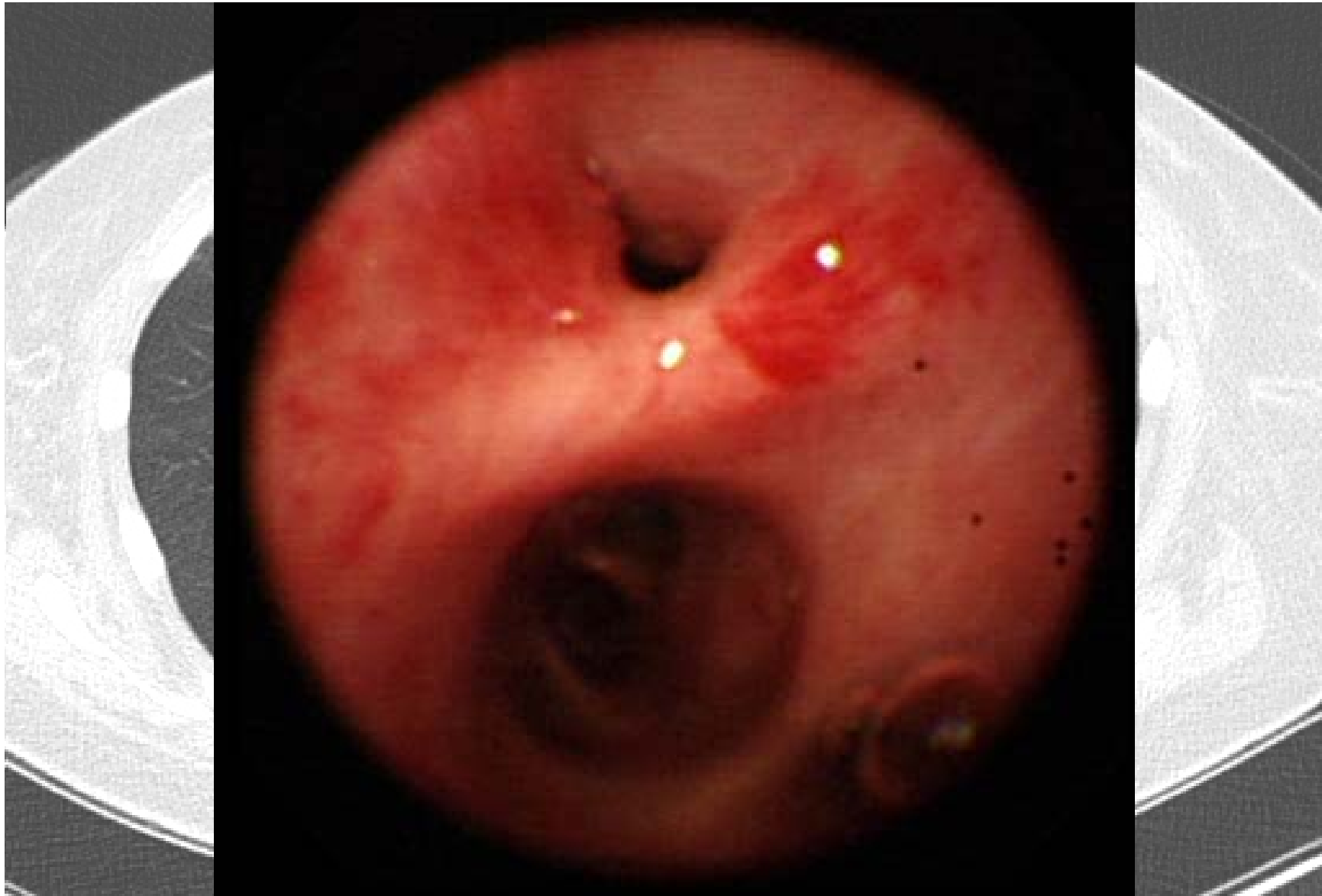
O> V/S: 125/80 mmHg - 78 회/min
- 22 회/min - 36.4 °C

A> s/p Lung transplantation
s/p Wedge resection of bullae

P> Discharge



**Follow up BFS and low dose chest CT after discharge
POD#83 (2011.7.29)**



Medications immediately after transplantation

1 2

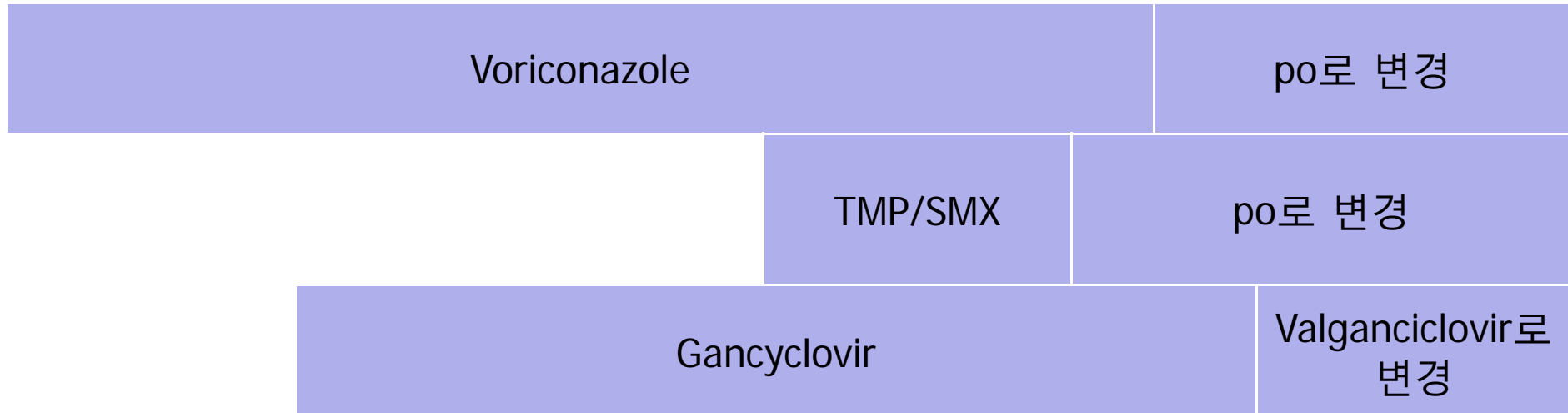
8 9

21

37 39 42

(단위: 일)

Prophylactic antibiotics



Immunosuppressant

