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Nothing to disclose

Robot-assisted Latissimus Dorsi Flap Breast Reconstruction

Gasless Technique of Robotic-assisted LD Muscle Flap Harvest

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Objective of This Study

- **Anatomy of LD muscle & Thoracic cavity**
 - LD muscle : **outside** of thoracic cavity (**narrow cavity**)
 - Thoracic cavity contains **critical organ**, lung and heart.
- **Risk of Carbon dioxide Gas Insufflation**
 - Intraoperative **hypothermia**
 - High **thoracic pressure**
 - ↓ pulmonary venous flow, cardiac output, respiratory compliance
 - **Acid-base imbalance** due to elevated PaCO₂
 - Increased **post-op. complications**

Need for Gasless Technique !!!

METHOD

PREOPERATIVE DESIGN

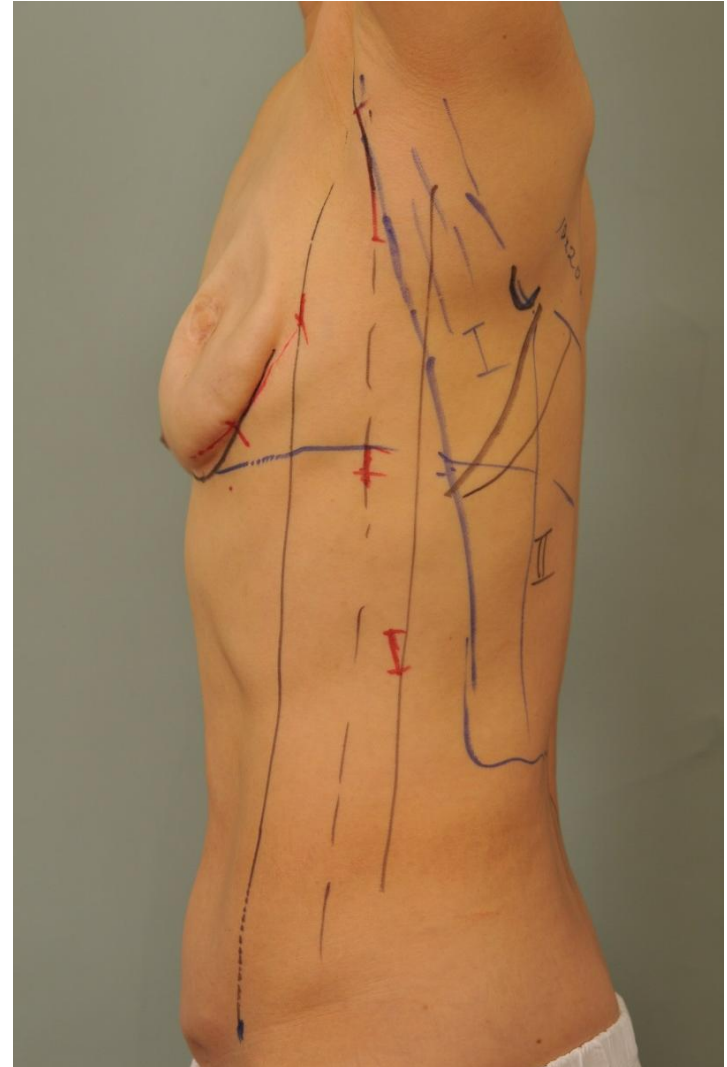
➤ Incision line

- Previous mastectomy scar
- 5~6cm vertical incision from the anterior axillary crease along the anterior axillary line.

➤ Port insertion points

➤ Zone I & II

- Zone I (manual dissection)
: proximal to scapular tip
- Zone II (robotic dissection)
: remained area



1. INCISION AND PORT PLACEMENT

2. PEDICLE ISOLATION

3. MANUAL DISSECTION

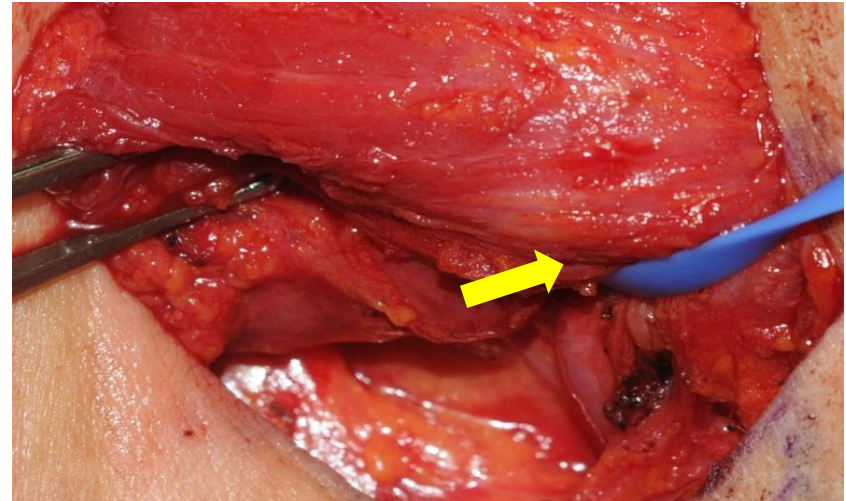
Vertical incision

Pedicle isolation

Muscle flap dissection

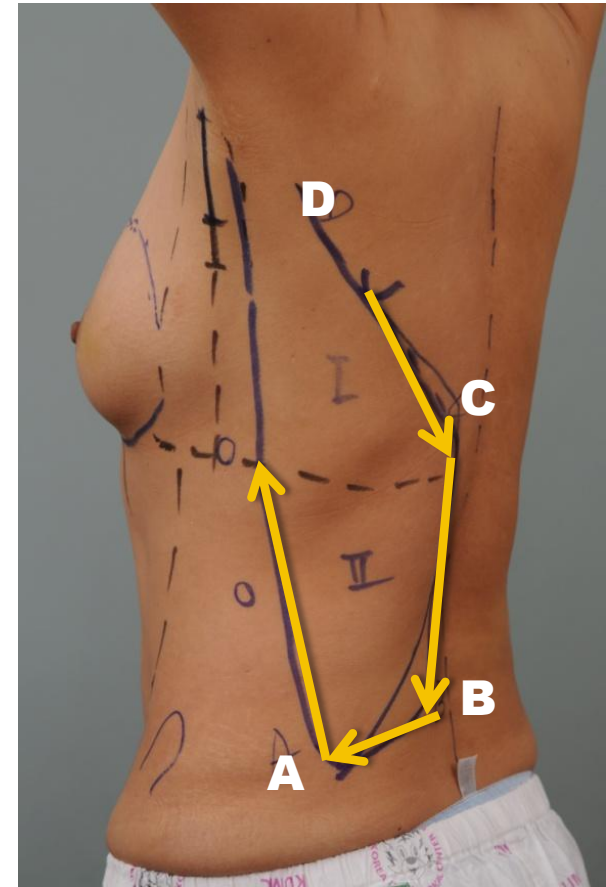
Articulated Long Retractor

- To maintain working space
- Attached to the operative bed
- enable to dissect nearly anterior 1/3 (Zone I) of the muscle without endoscopic view despite more anterior skin incision.

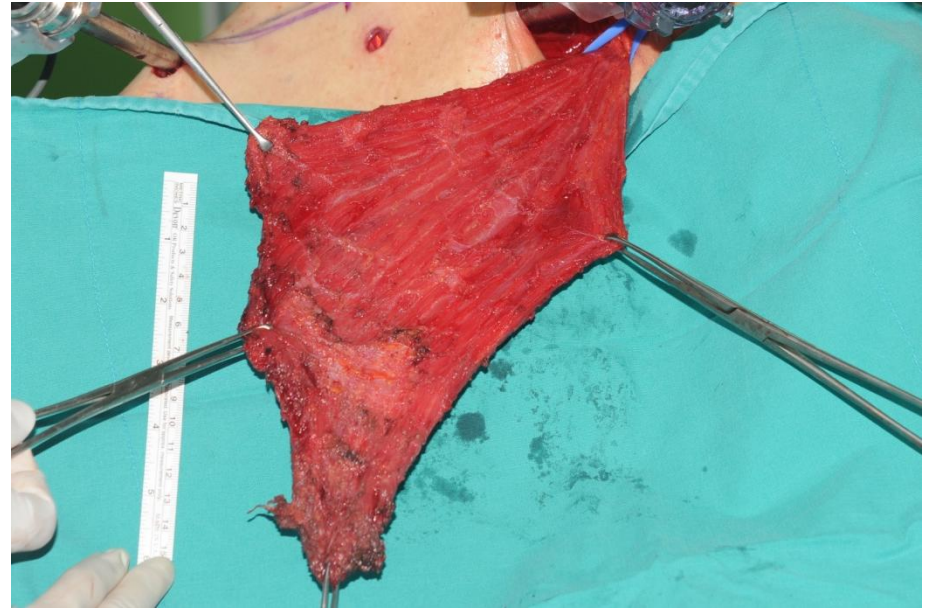
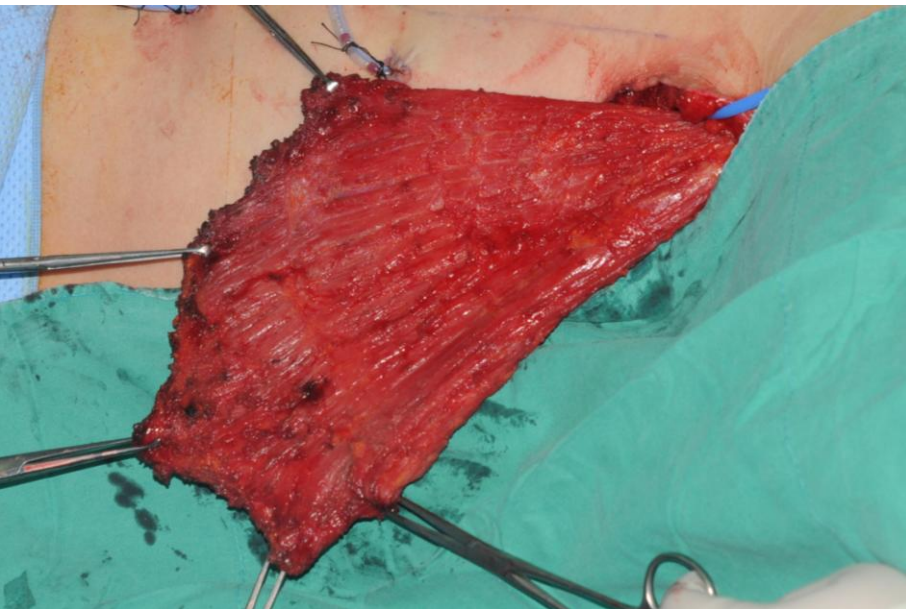
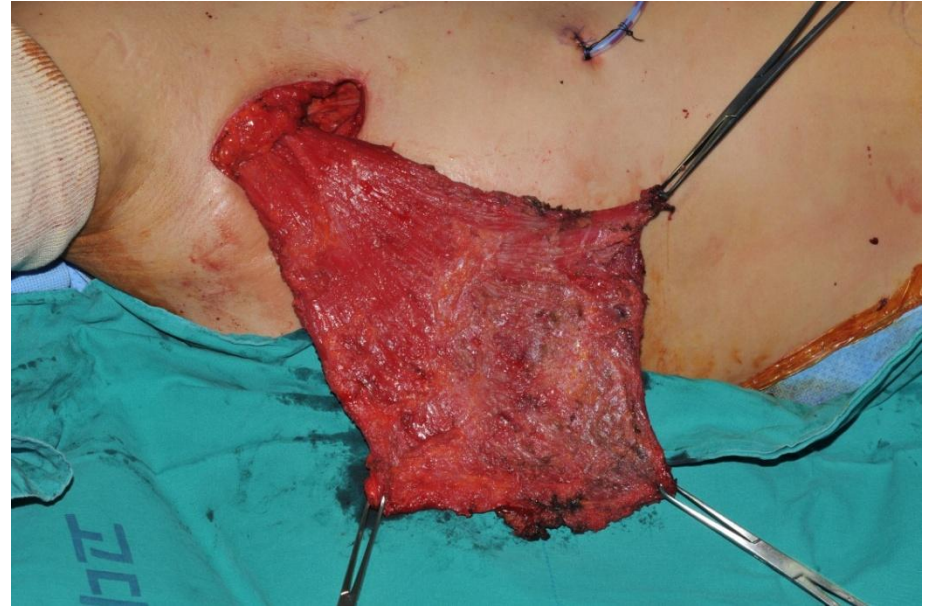
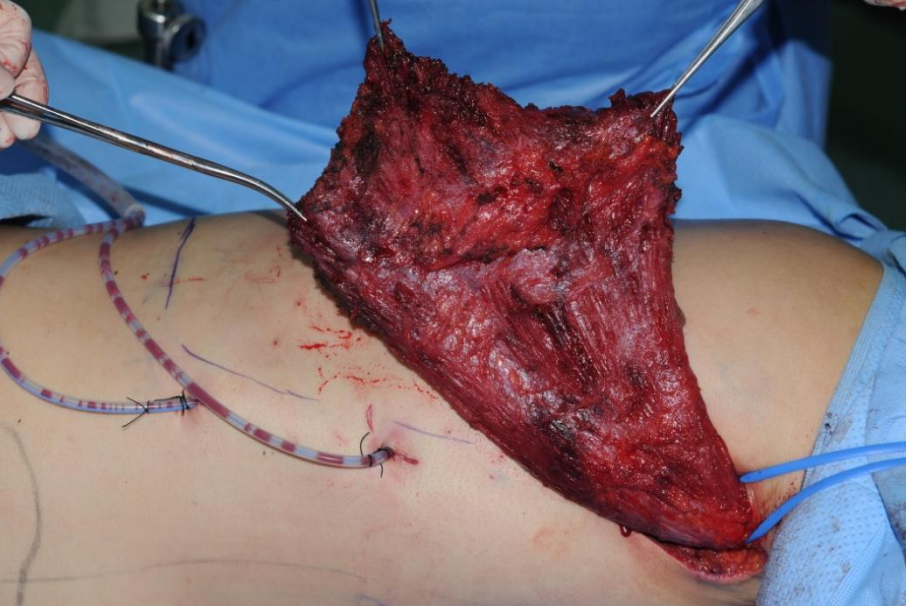


4. ROBOTIC LD MUSCLE DISSECTION

1. Begins from the superoposterior border (C) along the **undersurface** in a clockwise direction.
2. Proceeds over the **superficial surface** .
3. Disinsert the muscle from the inferoposterior border (B).



HARVESTED LD MUSCLE FLAP



RESULT

➤ Total 8 patients (M/F = 1/7)

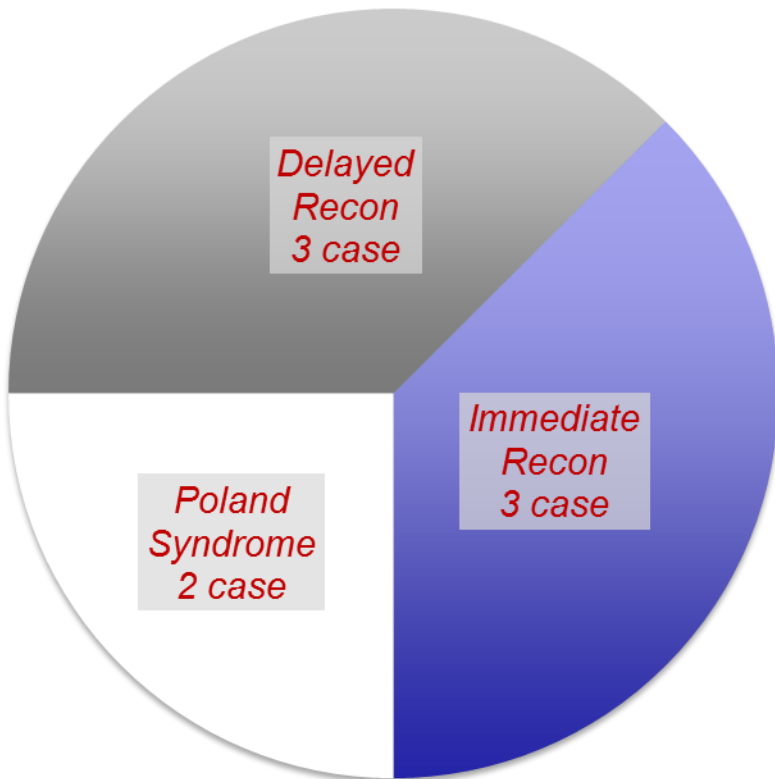
📖 **Delayed reconstruction : 3 cases**
- 1 mastectomy(BCS) : breast deformity
- 2 implant rupture + capsular contracture

📖 **Immediate reconstruction : 3 cases**

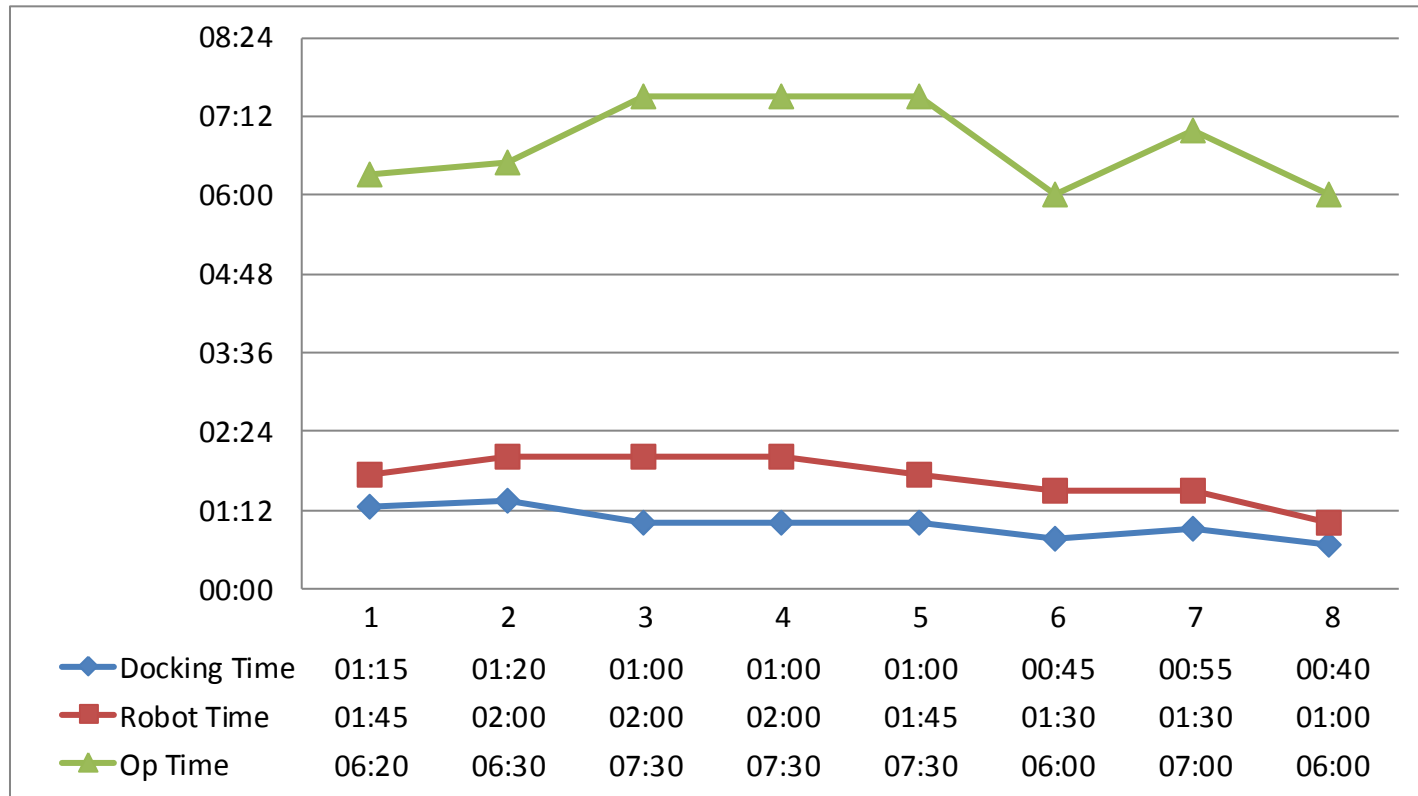
📖 **Chest wall deformity : 2 cases
(Poland syndrome)**

➤ Age : 19 ~ 51 yrs old (Median : 38 yrs old)

➤ Mean BMI : 23.465 (20.2 ~27.8)

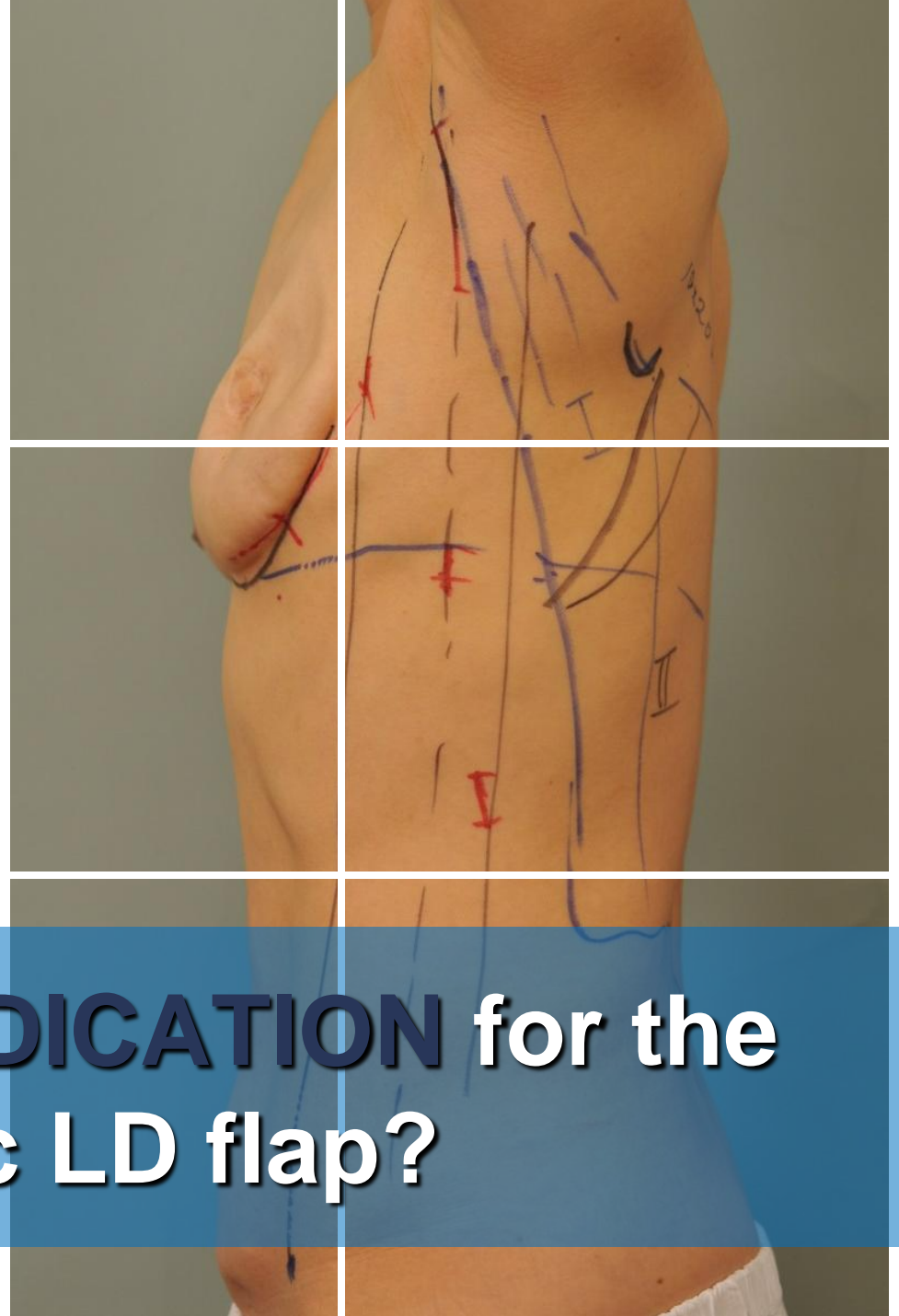


RESULT



- Mean docking time : 59 min
- Mean operative time : 407 min
- Mean robotic time : 101 min
- No major / minor complication
- Less Hospitalization : average 6.5 days
- Earlier Complete healing : average 13 days

DISCUSSION



What's the **INDICATION** for the robotic LD flap?

1. Poland Syndrome

1. Defect of Pectoralis muscle
 - ***Muscle coverage is needed.***
2. Congenital disorder (Young patients)
 - ***Good aesthetic result and Minimizing operative scar is very important.***

Robotic LD muscle flap can be an absolute indication!!!

2. Implant failure

Capsular Contracture

- When changing implants, covering the new implants only with skin flaps is not enough.
- Coverage of implant should be needed.
 - a. TRAM is contraindication.
 - b. Allogenic dermis is not enough to cover.

**LD muscle flap is
the treatment of choice!!!**

3. Implant-based Reconstruction

- Breast skin envelope is intact.
- a. Nipple-sparing mastectomy
- b. Breast conserving surgery (BCS)
 - *In the case of lateral lumpectomy defects*
 - *breast deformity*
- c. Delayed reconstruction using Expander-based reconstruction

**LD muscle flap is substitute
for the allogenic dermis.**



PRE

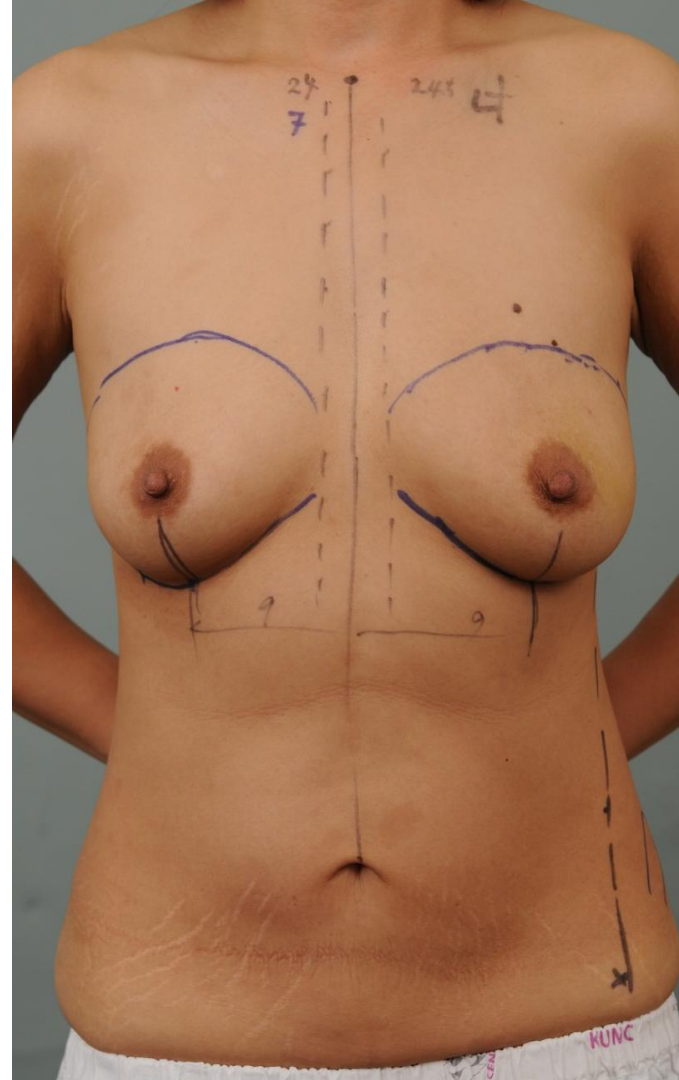


POST 7M



Axillar Scar

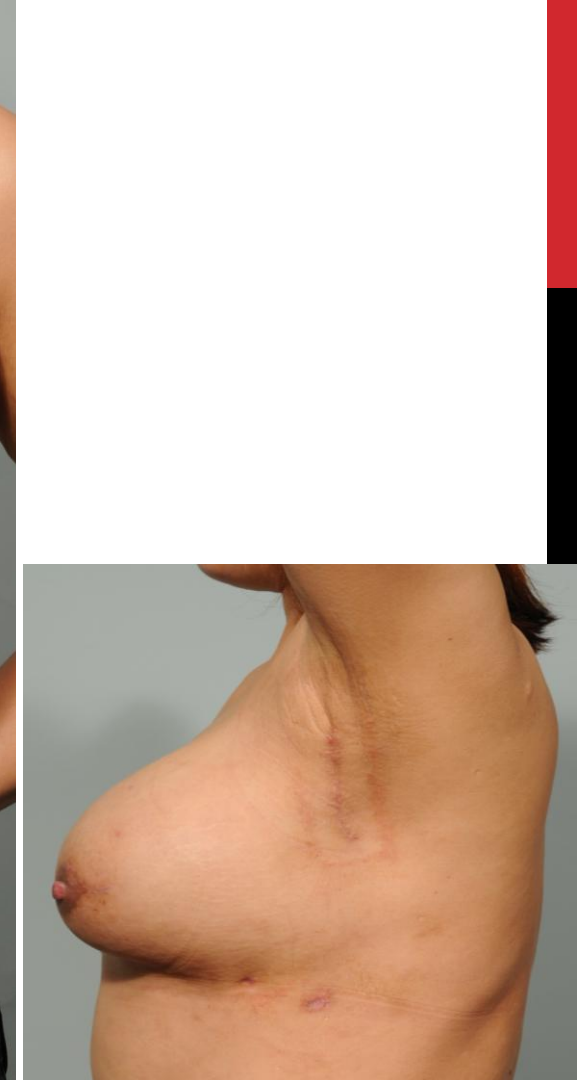
**CASE I F/19
POLAND SYNDROME, LT.**



PRE



POST 7M



Axillar Scar

**CASE II F/38
IMMEDIATED RECON., RT.**

CONCLUSION

- The gasless technique of robot-assisted LD muscle flap using the articulated long retractor is **safer and less complex technique** than previous method.
- **For young patients**, especially in a case like Poland syndrome, this method would be suggested as an **absolute indication**.
- **Capsular contracture, Implant-based reconstruction and partial breast reconstruction** can be a **relative indication**.