Dalhousie University Mini Med School

Breast Reconstruction

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Outline

- What is Plastic Surgery?
- Why perform Breast Reconstruction?
- How do we reconstruct a breast?
What is Plastic Surgery?

- **Plastikos:** Greek word, to shape, to mold, to give form
- Plastic surgery is much more than cosmetic surgery
- Misconceptions rampant!
6th century BC: Sushruta, The Forehead Flap
Tagliacozzi 1500’s - The Italian Method

We restore, rebuild, and make whole those parts which nature hath given, but which fortune has taken away.
Sir Archibald McIndoe, Sir Harold Gillies, Dr. Ross Tilley
History of Breast Reconstruction

- 1895- Lipoma transplant
- 1905- skin/muscle flap
- 1963- Implant development
- 1982- TRAM flap
- 1998- US Women’s Health and Cancer Rights Act
Importance of Breast Reconstruction
In NS- less than 1 in 10 women undergo recon
Breast Reconstruction - Why?
Breast Reconstruction: How?
What operation is right for the patient?

1. Implants
2. Flap/Implant
3. Flap
Timing: Immediate vs Delayed

- Advantages of delaying reconstruction
  - Lower overall complications
  - Satisfaction?
  - Radiation, chemotherapy done prior to reconstruction

- Disadvantages of delaying reconstruction
  - Lower quality cosmetic results, on average
  - Have to live without a breast for a period of time
  - Waiting lists...
Implant reconstruction
Option 1: Implants

- Shortest hospital stay and recovery time
- Can be done immediately or delayed
- Good for bilateral reconstructions (symmetry)
- Typically planned as a 2 stage procedure
  - 1- placement of tissue expander implants
  - 2- exchange of expanders for permanent implants
- No additional scars on the body

Trade-offs: Less natural looking; radiation*
Are implants safe?
Implant reconstruction

Figure A

Figure B
2 stage: Tissue expander → Implant
Main goal ➔ To look normal in clothes
Direct to Implant Single Stage Reconstruction

Acellular Dermal Matrix (AlloDerm®)

Flap and implant reconstruction
Option 2: Flap and implant

- Latissimus dorsi flap and Implant
  - More natural appearance than implants alone
  - Replaces lost skin
  - Good in setting of radiation - covers implant with non-radiated tissue
  - Very reliable flap (no microsurgery involved)

- Trade-off: Scars on the back, longer surgery
- Takes approx 3 h per breast, 2-3 days in hospital
Latissimus Dorsi Flap Reconstruction

Pre-Operative Surgical Markings

Flap Transfer in the Operating room

Final Appearance with Nipple Reconstruction

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Bilateral Immediate Recon with LD and Implant
Autologous reconstruction (flap)
Option 3: TRAM/DIEP Flap

- **TRAM** = *Transvers Rectus Abdominis Myocutaneous Flap*
- **DIEP** = *Deep Inferior Epigastric Artery Perforator Flap*

In the ideal patient, can create a breast mound entirely from patient’s own abdominal tissue

- Good for radiated patients
- Natural shape and consistency
- Excellent for matching a normal opposite breast
- Trade-off: Complex and long surgery, risk of flap loss, scars
  - 6-8 h per breast, 5 days in hosp, 6 week recovery
Pedicle TRAM incisions
Muscle-sparing Free TRAM incisions
DIEP Flap incisions

Abdominal Wall Anatomy
Pedicle TRAM
Muscle-Sparing Free TRAM
DIEP Flap

Meykelman (2011)
DIEP / TRAM Flap
Left diep, right reduction
Left DIEP flap

PRE-OPERATIVE

POST-OPERATIVE
DIEP Flap Surgery
Other flaps: SGAP, TUG
The Rubens flap
Reconstruction after Lumpectomy

Options:
- Complete mastectomy and reconstruction
- Latissimus flap
- Fat grafting
- Reduce opposite breast
“Doctor, can you take my **FAT** from here and move it there?”
Yes!
Lumpectomy Defect $\rightarrow$ fat grafting
Lumpectomy defect → fat grafting
Nipple and Areola Reconstruction

- Usually done later under local anesthetic
- Many different techniques
  - Nipple flap
  - Skin grafting
  - Areolar tattooing
Nipple Reconstruction
Tattoos alone

Before
(no nipple reconstruction)

www.Tattoospedia.com
What’s new?
Oncoplastic surgery

Oncoplastic Breast Reduction Examples

“Vertical” Breast Oncoplastic Reduction-Reconstruction for Lateral Breast Cancer

Lateral Breast Cancer

“Vertical” Breast Reduction Scars

Removed Breast Tissue Includes Cancer + Margin

“Weiss” Breast Oncoplastic Reduction-Reconstruction for Medial Breast Cancer

Medial Breast Cancer

“Weiss” Breast Reduction Scars

Removed Breast Tissue Includes Cancer + Margin

Meyboom (2011)
Brava

- External suction
- Fat grafting
BRCA and Prophylactic Mastectomy

- On the rise
- Increasing demand for reconstruction
New frontier?

Breast growth breakthrough

1. Surgeons implant a synthetic breast-shaped chamber beneath the skin to act as a scaffold for the new breast to grow in.

2. A blood vessel is redirected from the underarm to a 5ml piece of the patient’s fat inside the chamber, which is filled with a special gel to stimulate tissue production.

3. The fat spontaneously grows to fill the chamber and form a new breast over the next four to six months.

4. The chamber will dissolve after the new breast is formed.
Halifax, Nova Scotia
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BRA DAY
BRÆST RECONSTRUCTION AWARENESS

Canadian Cancer Society

DALHOUSIE UNIVERSITY
Inspiring Minds
Questions?

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