Gender Affirming Surgery

Top Surgery

A summary for health care providers

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This summary provides information to facilitate the discussion of gender affirming surgery between Ontario health care providers and patients. It is not exhaustive and does not replace the informed consent process between surgeon and patient.

DESCRIPTION

Bilateral mastectomy and chest contouring, often referred to as "top surgery", removes breast tissue and liposuctions the remaining tissue into a shape typically considered more masculine (flat and smooth contour)

TERMINOLOGY

Nipple refers to the central raised portion of pigmented tissue
Areola refers to the circular shaped pigmented tissue immediately surrounding the nipple
Nipple-areola complex (NAC) is the entire tissue complex including both nipple and areola

INTENDED RESULTS

- Align anatomy with gender identity
- Reduction in gender dysphoria and/or gender incongruence
- Improve mental health and well being
- Flatter chest profile
- Eliminate need for binding

ALTERNATIVE TREATMENT OPTIONS

- Binding chest
- Wearing clothes that hide chest tissue
- Breast reduction if meets eligibility requirements in Ontario

Surgical Techniques and Options

There are multiple possible techniques. The type recommended by the surgeon depends on cup size, skin elasticity, NAC size/position and the patient's goals. Although anatomy will have the largest impact on options available, having clear goals can help guide discussions about techniques and outcomes.

KEYHOLE MASTECTOMIES

(Recommended for people with an A cup-size and good skin elasticity)

- A small half-moon incision is made along the lower aspect of the areola
- The NAC is left attached to the body so sensation is possible and NAC grafting is not necessary
- Breast tissue is removed by liposuction and direct excision through the half-moon incision
- The incision is closed. The NAC is not resized or repositioned.
- Drains (long thin tubing) are typically placed in the chest for this technique to allow blood/fluid to escape

PERIAREOLAR MASTECTOMIES

(Recommended for people with a B or less cup size and good - moderate skin elasticity)

- An incision is made all around the outside of the areola, skin excised circumferentially
- The NAC is left attached to the body so sensation is possible
- Breast tissue is removed by liposuction and direct excision
- The areola may be trimmed to reduce its size
- The skin is pulled tight around the areola like pulling a drawstring closed
- The NAC may be repositioned slightly, depending on chest size and available skin
- Drains (long thin tubing), are typically placed in the chest for this technique to allow blood/fluid to escape

DOUBLE INCISION MASTECTOMIES

Recommended for people with a C-cup size or larger and/or excess skin

- Large incisions are made horizontally across the chest
- The breast tissue is removed with the excess skin
- Some fatty tissue may be liposuctioned
- Incisions are closed, leaving two scars below the pectoral muscle lines
- Can be done with or without nipple grafting
- In "Free nipple graft" technique, NAC is removed completely, the areola and nipple are trimmed to a smaller size and the NAC is grafted onto the chest
- Drains may be used in this technique

INVERTED T MASTECTOMIES

- A surgical technique similar to the double incision but with an extra vertical excision
- NAC left attached to the body
- The breast is removed with the excess skin
- Some fatty tissue may be liposuctioned
- Similar to double incision it is suited to those with C-cup or larger and/or excess skin who wish to preserve the native NAC
- It cannot achieve the same flatness as with double incision
- Not all surgeons offer this technique

POTENTIAL RISKS/COMPLICATIONS COMMON TO MOST SURGERIES

Risks are increased with smoking, immunosuppressant drugs, clotting disorders, conditions that impair healing, BMI <18.5 or >30

General Surgical Risks

- Bleeding, if excessive may require blood transfusion
- Deep Vein Thrombosis, Pulmonary Embolism (blood clots in legs, lungs)
- Injury to surrounding anatomical structures (organs, nerves, blood vessels)
- Hematoma (collection of blood)/seroma (collection of fluid)
- Infection/abscess (collection of pus)
- Wound dehiscence (wound opening), delayed healing
- Nerve damage, loss of sensation, hypersensitivity, neuropathic (nerve) pain
- Chronic pain
- Scarring (can be prominent especially if history of keloid)
- Dissatisfaction with appearance/function
- Need for revision(s)
- Post-operative regret

General Anesthetic Risks

- Respiratory failure
- Cardiac failure/arrest
- Death
- Damaged teeth
- Aspiration pneumonia
- Nausea/vomiting

SURGICAL RISKS AND COMPLICATIONS OF TOP SURGERY

- **Irreversible**: The procedure involves a significant degree of irreversibility
- **Change in sensation** to the chest and NAC
- **Numbness** of nipples/areola/chest - higher risk of NAC numbness with double incision mastectomies because they are grafted
- **Hypersensitivity** is also possible, typically to the NAC, and can lead to chronic pain conditions
- **Wound separation** at the incision sites. This can also contribute to more significant scarring and increase risk of infection.
- **Permanent scarring**. Scarring present is aligned with surgical technique (i.e small scars around areola in keyhole and periareolar; large linear scars in double incision mastectomies)
- **Partial or full nipple graft failure**, i.e. nipple necrosis (tissue dies and falls off).In the case of graft loss, NAC may be replaced or reconstructed with surgery, or tattooed.
- **Changes in colour** of NAC
- **Asymmetry**. Body symmetry before and after surgery is imperfect. Asymmetry is common and may affect skin, chest contour, the size and position of the NAC and scarring.
- **Skin contour irregularities**, i.e. skin excess, bulges, puckering
- **Hematoma/Seroma:** when blood and fluid collect in the surgical site causing swelling, pain and redness. These may resolve on their own, or if large or persistent, may require aspiration with a needle and syringe once or more times.
- **Abscess/Infection** of the surgical area. Treatment may include drainage and/or antibiotics. Inability to lactate/chest feed
- **May decrease ability to screen for breast cancer**, as breast cancer screening tests may be less effective or difficult to access

PRE-OPERATIVE CARE

PRE-SURGICAL CONSIDERATIONS

- Consider referral to the Sherbourne Health's Acute Respite Care (ARC) Program for post-operative support if socially isolated, under-housed or homeless
- Ensure you have **explored the patient goals** for surgery which could include:
  - Masculine chest
  - Flat chest
  - Stop binding
  - Nipple preservation
  - Increase possibility of retaining sensation
  - Minimize complications
  - Resultant and desired scarring pattern
- **Smoking cessation** is strongly recommended both pre-op and post-op to optimize wound healing and decrease risk of nipple necrosis (usually at least 4 weeks before and after including smoking cannabis and vaping)
- Follow surgeon's advice on time periods to avoid smoking, alcohol and other substances
- History of keloid scars can increase risk of this type of scarring occurring after surgery
- **Breast cancer risk** assessments should be conducted prior to surgery. **High risk patients should be clearly identified**
- Each surgical centre has a routine pre-operative process, patients should ask their surgeon what to expect
- Hospitals tend to have standard pre-operative processes which may include pre-admission visit to review health history and provide teaching (pre/post-op care)
- Anesthesia and/or medicine consult may be required, depending on health history

ANESTHESIA WILL DISCUSS:

- Which medications to stop and when
- Anesthetic approach and risks
- Pain control measures
- Patients should ask their surgeon if there are any additional fees that are not OHIP covered

IMMEDIATE PRE-OPERATIVE CARE

- Patients should follow the hair removal instructions recommended by their surgeon
- Surgeons may make surgical skin markings with patients standing, sitting or lying down
- IV antibiotics may be given pre-operatively to reduce the risk of infection

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POST-OPERATIVE CARE

IMMEDIATE POST-OPERATIVE CARE

- Follow surgeon's post-op instructions for drains, dressings, sutures and steri-strips
- Surgical drains (Jackson Pratt drain) may or may not be necessary. Drains are removed once there is only a small amount of drainage, typically one week after surgery, but can take longer
- Most surgeons use dissolvable sutures, and these will dissolve on their own by 4-6 weeks
- Dressings and steri-strips are usually left on for the first week and then removed
- Once the dressings are removed one can shower
- Follow surgeon's recommendations about wearing a compression band (sometimes recommended for 1-month post-op)

INTERMEDIATE POST-OPERATIVE CARE

- Follow surgeon's recommendations on restrictions to activities
- Some general guidelines include:
  - Have a support person during the post-op period to assist with IADLs (cleaning, cooking, laundry, groceries)
  - Avoid driving for one week or longer, until safely able to move arms to drive
  - Avoid straining, lifting heavy objects (max 10 lbs), and exercise for four weeks
  - Reduce activities and **take time off work for one week or longer** (depending on type of work)
  - Gradual return to daily activities over four to six weeks

LONG-TERM MEDICAL CARE

- Swelling is normal for 4-6 months and will resolve over time, total healing is approximately 12-18 months
- Avoid exposing scars to sunlight for at least one year after surgery to minimize increased pigment changes in the scar
- If there is notable scarring, it may be possible to cover with chest hair, building pectoral muscles or tattoos
- Ask your surgeon if they remove all breast tissue, if some is intentionally left behind, and what their recommendation is for long term breast cancer screening
- It is possible that some breast tissue remains, so a plan for ongoing monitoring of the tissue left behind should be established with your provider
- In Ontario, funding for revisions can be applied for through the Ministry of Health by completing the Prior Approval for Funding of Sex Reassignment Surgery form

REFERENCES

de Blok, C. , Wiepjes, C., Nota N, van Engelen, K., Adank, M., Dreijerink, K., Barbe, A., Konings, I., Heijeer, M. (2019) Breast cancer risk in transgender people receiving hormone treatment: nationwide cohort study in the Netherlands. British Medical Journal. 365:l1652 doi:10.1136/bmj.l1652

Chest Construction & Reduction [Internet]. Transgender Health Information Program. [cited 2024Feb14]. Available from: http://www.phsa.ca/transcarebc/surgery/gen-affirming/upper-body-surgeries/chst-surg

Gonzalez, E. , Frey, J. & Bluebond-Langner, R. (2020). Technical Refinements in Gender-Affirming Top Surgery. Plastic and Reconstructive Surgery, 146 (1), 38-40. doi: 10.1097/PRS.0000000000006913.

Makhoul, A. , Morrison, S. , Mundra, L. , Kaoutzanis, C. , Satterwhite, T. , Winocour, J. , Al Kassis, S. & Drolet, B. (2022). Improving Gender-Affirming Surgery Terminology. Annals of Plastic Surgery, 88 (5), S478-S480. doi: 10.1097/SAP.0000000000003122.

Mastectomy [Internet]. GRS Montréal. [cited 2024Feb14]. Available from: https://www.grsmontreal.com/en/surgeries/female-to-male/14-mastectomy.html

McEvenue, G., Xu, F. Z., Cai, R., & McLean, H. (2018). Female-to-Male Gender Affirming Top Surgery: A Single Surgeon's 15-Year Retrospective Review and Treatment Algorithm. Aesthetic Surgery Journal, 38(1), 49–57. https://doi.org/10.1093/asj/sjx116

Parmeshwar, N. , Song, S. , Alcon, A. & Kim, E. (2022). The Incidence of Breast Cancer After Gender-Affirming Mastectomy in Transmen. Annals of Plastic Surgery, 88 (4), S332-S336. doi: 10.1097/SAP.0000000000003083.

Poudrier, G. , Nolan, I. , Cook, T. , Saia, W. , Motosko, C. , Stranix, J. , Thomson, J. , Gothard, M. & Hazen, A. (2019). Assessing Quality of Life and Patient-Reported Satisfaction with Masculinizing Top Surgery: A Mixed-Methods Descriptive Survey Study. Plastic and Reconstructive Surgery, 143 (1), 272-279. doi: 10.1097/PRS.0000000000005113.

Wilson, S. C. , Morrison, S. D. , Anzai, L. , Massie, J. P. , Poudrier, G. , Motosko, C. C. & Hazen, A. (2018). Masculinizing Top Surgery. Annals of Plastic Surgery, 80 (6), 679-683. doi: 10.1097/SAP.0000000000001354.

Zhu, J., Wang, E., Liu, S., Koos, J., Shroyer, L., & Krajewski, A. (2023). Impact of surgical technique on outcome measures in chest masculinization: A systemic review and meta-analysis. Journal of Plastic, Reconstructive & Aesthetic Surgery, 87, 109–116. https://doi.org/10.1016/j.bjps.2023.09.00

DISCLAIMER

The information provided here is generalized and is not medical advice. It is recommended that all patients have a pre-operative consultation with their surgeon to receive individualized information including the specific surgeon's technique, complication rates and recommendations. This is a dynamic document that is subject to change, as the knowledge of gender affirming surgeries changes.

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