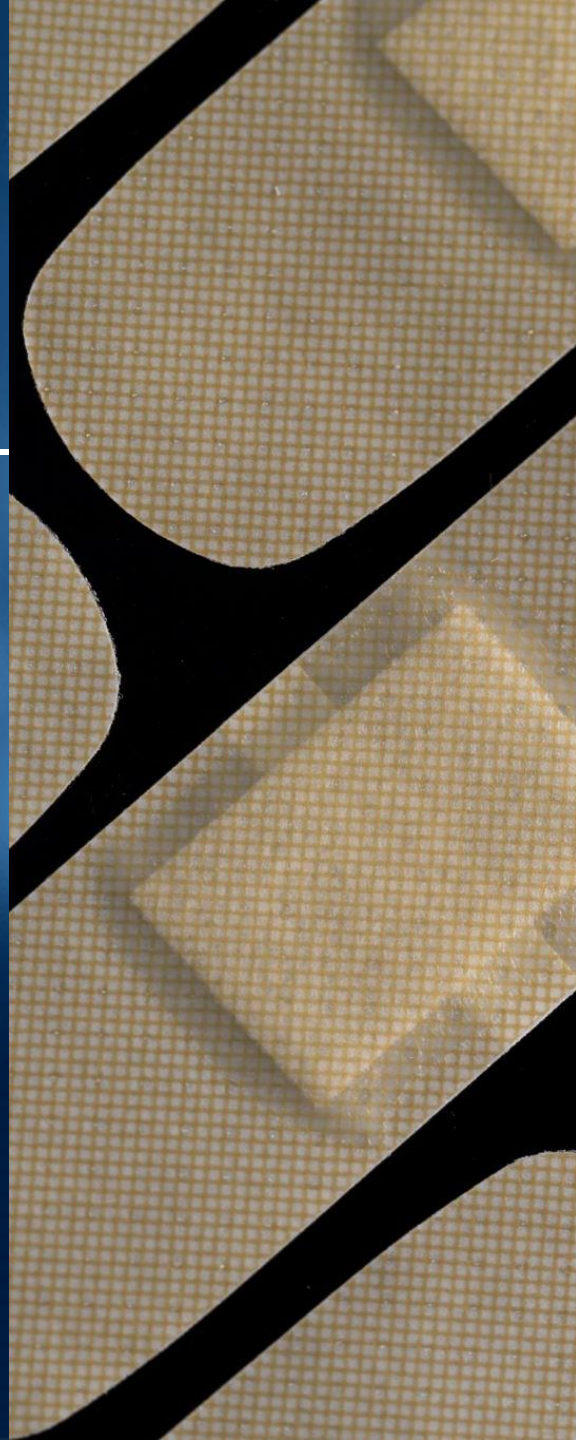
INTRODUCTION TO PLASTIC AND RECONSTRUCTIVE SURGERY

Dr Maitumelo Imeldah Di Loreto
Plastic Surgery Registrar
Alfred Health, Melbourne VIC



DISCLOSURE

I have no conflicts of interest to disclose regarding this presentation.

LEARNING OBJECTIVES

The below table outlines your contributions to the Foundation Seminar in Surgery and Perioperative Medicine.

Session title	Session date & time	Duration total (hr)	Learning objectives	Competency standards*
Presenter: Introduction to plastic and reconstructive surgery	Pre-recorded presentation	0.5	Identify common reasons why people see a plastic surgeon Review types of procedures commonly performed by a plastic surgeon Describe a plastic surgeon's approach to a patient requiring plastic and reconstructive surgery in the perioperative period	3.1.2

**National Competency Standards Framework for Pharmacists in Australia, 2016*

PHARMACIST COMPETENCY STANDARDS

Pharmacist competency standards* addressed include:

*National competency standards framework for pharmacists in Australia, 2016

WHY PEOPLE SEE PLASTIC SURGEON?

- "Plastic surgery deals with the repair, reconstruction, or replacement of physical defects of form or function involving the skin, musculoskeletal system, cranio and maxillofacial structures, hand, extremities, breast and trunk, and external genitalia. It uses aesthetic surgical principles not only to improve undesirable qualities of normal structures but in all reconstructive procedures as well."

- American College of Surgeons

TYPES OF PROCEDURES COMMONLY PERFORMED BY A PLASTIC SURGEON

• Non-cosmetic

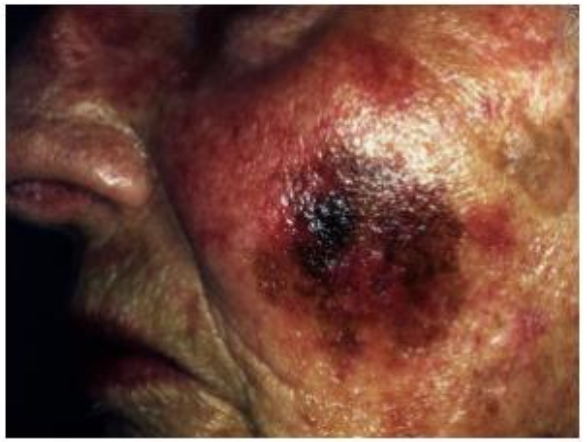
- Excision of skin and subcutaneous lesions/objects
- Repair of lacerations and other soft tissue injuries
  - Debridement and washout
- Difficult wound closure
  - Grafts
    - Skin, nerve, fat, tendon, cartilage, bone, muscle, composite
  - Flaps
- Reconstructive of congenital, traumatic, infectious, neoplastic and other malforming conditions
  - Congenital Palate and lip deformity
  - Fractures
  - Breast – lumpectomy, mastectomy, reconstruction
  - Nerve (carpal tunnel), tendon (tenosynovitis), vasculature

• Cosmetic

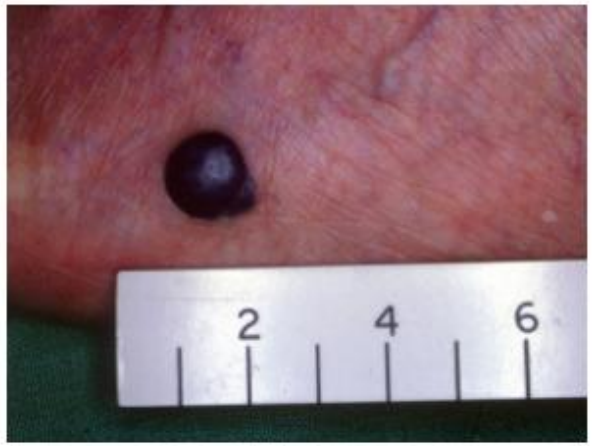
- Most common cosmetic procedures in Australia;
  - Breast Augmentation
  - Eyelid surgery
  - Liposuction
  - Abdominoplasty
  - Breast reduction [2]

SKIN CANCER EXCISION

- **Example; Melanoma**
- Pigmented, slightly raised lesion arising de novo or from pre-existing naevus.
- Management;
  - Complete excision biopsy
  - Excision of further margins



Lentigo maligna melanoma

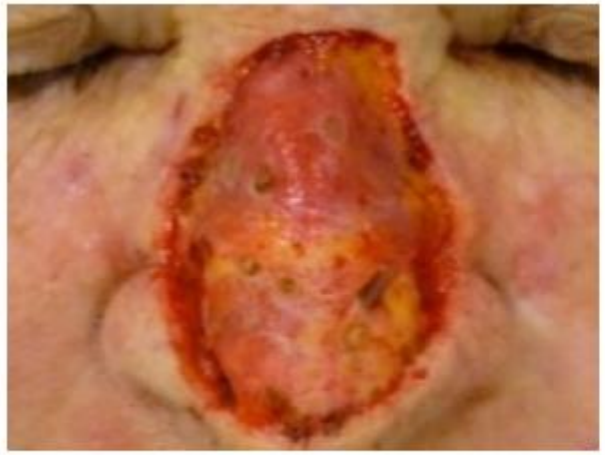


Black nodular melanoma

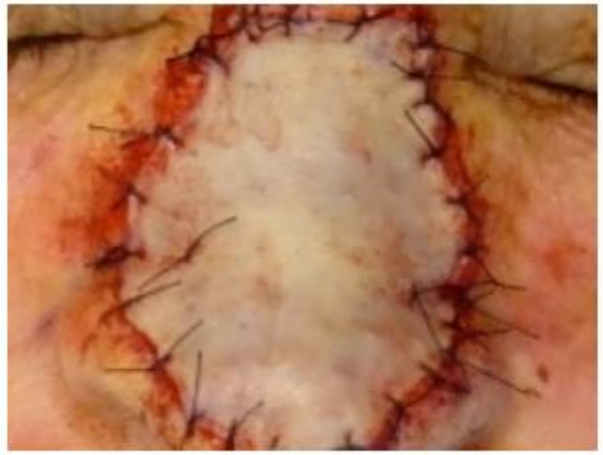
Dermnet NZ 2015

SKIN GFRAFTS

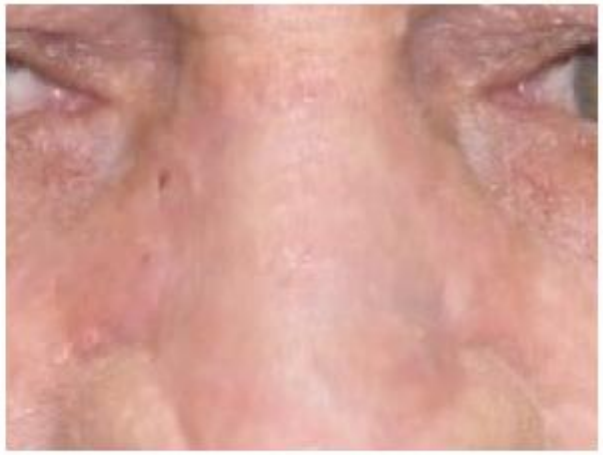
- Thickness
  - Split thickness
  - Full thickness



Excision wound



Grafted wound



Healed wound after skin graft

Dermnet NZ 20002

FLAPS

- Flaps are tissue lifted from a donor site and transported to the recipient site with their vascular supply intact.
- Classification
  - Single tissue composition;
    - Skin flap
    - Muscle flap
    - Bone flap
    - Fascia flap
  - Multiple tissue composition;
    - Fasciocutaneous, myocytaneous, osseoseptocutaneous
  - Location
    - Local
    - Regional
    - Distant
  - Vascular pattern
    - Random
    - Axial
    - Pedicle
    - Free
    - Perforator

PLASTIC AND RECONSTRUCTIVE SURGERY IN THE PERIOPERATIVE PERIOD

- Admission
- Anaesthesia
- Surgery
- Recovery

ADMISSION

- History of presenting complain
  - Understand the mechanism of injury
  - Potential for infection, trauma to structures (nerve, tendon, vasculature)
  - Patient perspective and values
- Systems review and past medical history
  - Infection sx and risk
  - Complex social issues and mental health
    - Recreational substance use,
    - CL review
  - Difficult wound healing, bleeding risk
    - Diabetes, Smoking, Anticoagulation and CVD
- Examination
  - Stability on ward
  - Location and extent of injury
  - Necrotic tissue
  - Visible or suspected damage to structures
- Ix
  - Infection - Wound swab MCS, Tissue MCS
  - FBE +/- WCC, CRP, UEC

ANASTHESIA

- Anaesthetic options;
  - Local anaesthesia – such as bupivacaine
  - General anaesthesia – induction, analgesia, muscle relaxants, inhalation anaesthetic
- Risk of general anaesthesia
  - Prior anaesthesia
  - Difficult airway
- Aspiration risk
  - Keep fasted prior to procedure

SURGERY

Preoperative

- Anticoagulation
  - Minor procedures [3]
    - Oral anticoagulation can continue at therapeutic level INR1.5 – 1.8
  - Major procedures
    - Low risk patients [3]
      - Cease warfarin 5 days preop, Cease all other anticoagulation 4 days preop
      - INR measure on day of OP – if >INR2.0 – postpone, fresh frozen plasma, consult Haem.
      - Restart warfarin as soon as oral fluids tolerated. Titrate dose to preop maintenance dose/postop INR
    - High risk patients [3]
      - Cease warfarin 4 days preop. Commence UFH or LMWH daily.
      - Cease LMWH min. 12hrs preopr, cease UFH min. 6hrs preop.
      - INR measure on day of OP – if >INR2.0 – postpone, fresh frozen plasma, consult Haem.
      - Once haemostasis established postop, recommence LMWH or UFH. Restart warfarin as soon as oral fluids tolerated. Titrate dose to preop maintenance dose/postop INR
      - Cease UFH/LMWH when INR>2.0.

SURGERY

Preoperative cont.

- Prophylactic Antibiotics [4]
  - Generally IV cephazolin or other first gen cephalosporin given approx. 1hr prior to first incision
  - Delineation of prolonged duration postop
    - Generally cease IV abx postoperatively if not active infection. Some high risk procedures such as amputation require 24hrs postop IV prophylaxis.
- Diabetic patients should be managed appropriately

Intraoperative

- Restoration of function
  - Sensation
  - Movement
  - Vasculature
- Debridement of necrotic/infected tissue
  - Improve wound healing
  - Reduce ongoing infection
- Pathology sent off for investigation
- Concerns;
  - Blood loss

RECOVERY

- Immobilisation or compression
- Surveillance of flap integrity
- DVT prophylaxis
- Analgesia
- Wound and drain review
- Rehabilitation

REFERENCES

- 1. Maser B. Plastic Surgery [Internet]. Fellow of the American College of Surgeons. 2021 [cited 4 May 2021]. Available from: https://www.facs.org/education/resources/residency-search/specialties/plastic
- 2. Cosmetic Surgery Statistics Australia & Around the World [Internet]. Victorian cosmetic institute. 2021 [cited 4 May 2021]. Available from: https://www.thevictoriancosmeticinstitute.com.au/2020/01/cosmetic-surgery-statistics-australia-around-the-world/#:~:text=Cosmetic%20Surgery%20in%20Australia&text=In%202017%2C%20Australia%20hit%20the,(ISAPS).
- 3. Sridhar R, Grigg A. The perioperative management of anticoagulation. Australian Prescriber. 2000;23(1):13-16. https://doi.org/10.18773/austprescr.2000.011
- 4. Lerano C, Manski-Nankervis J, James R, Rajkhowa A, Peel T, Thursky K. Surgical antimicrobial prophylaxis. Australian Prescriber. 2017;40:225-9. First published 14 November 2017. https://doi.org/10.18773/austprescr.2017.073
- Images; DermNet NZ – All about the skin | DermNet NZ [Internet]. Dermnetnz.org. 2021 [cited 4 May 2021]. Available from: https://dermnetnz.org/