Surgical Flaps

Site Applicability

VGH

Intervention

DESCRIPTION

Flaps are described according to

- **BLOOD SUPPLY**
  - **Random Pattern Flap** - consists of skin and subcutaneous tissue vascularized by random perforators from the subdermal plexus
  - **Atrial Pattern Flap** - blood is supplied by a direct cutaneous artery.
- **LOCATION** of the donor tissue in relation to the defect
  - **A Local Flap i**s created from tissue adjacent to the defect.
  - **A Distant Flap** is designed from tissue in one area and then transferred to reconstruct a defect in another area.
  - **A Delayed Flap** requires:
    - elevation of donor tissue and attachment to the recipient site without being separated from its blood supply.
    - attachment at both sites until the flap has developed adequate vascularity at the recipient site.
    - more than one procedure
    - immobility of both donor and recipient sites to prevent injury to either donor or developing recipient blood supply
  - **A Free Flap** requires:
    - complete tissue detachment from blood vessels at the donor site
    - immediate blood supply re-establishment by anastomosing vessels in the flap to vessels at the recipient site a one-stage microsurgical procedure

METHODS

- An Advancement Flap requires:
  - undermining of tissue on two or three sides
  - a vascularized pedicle to nourish the donor tissue flap and is advanced to re-construct an adjacent defect.

- A Transpositional Flap requires:
    - advancement along an area that forms an angle to the original position of the flap
    - a possible skin graft to re-surface the defect left by moving the flap.
- A Rotational Flap requires:
    - the defect to be immediately adjacent to the donor site
    - usually a semicircular design with elevation and rotation to re-construct the defect
    - consideration of a split thickness skin graft to a portion of the donor site if primary closure cannot be accomplished.
- An Island Flap requires:
    - raising a vascular pedicle and transferring to a new site usually through a tunnel beneath the skin.
    - primary donor site closure.
- A Pedicle Flap requires:
    - prevention not to STRETCH, KINK, OR COMPRESS as the flap is based on a "STALK" or pedicle containing its own neurovascularity. The flap is mobile and can be rotated into a distant defect. For example: latissimus dorsi or rectus abdominous muscles are rotated into the chest for breast construction.

ANATOMICAL COMPOSITION

- cutaneous flap - skin
- muscle flap - muscle
- osseous flap - bone
- fascial flap - fascia
- omental flap - omentum
- composite flaps
    - musculocutaneous (myocutaneous) - skin and muscle
    - osseomyocutaneous - skin, muscle and bone
    - fasciocutaneous - skin and fascia

Problem	Interventions
KNOWLEDGE DEFICIT related to unfamiliarity with the surgical procedure and plan of care.	Explain, discuss or review: • Post-op activity restriction and expectation for return to normal activities • Effects of aspirin, hormones and alcohol on blood coagulation • Effects of nicotine and vasodilators on circulation. The patient will **AVOID PRE-AND POST OPERATIVELY: COFFEE, TEA, CHOCOLATE AND CAFFEINE, CARBONATED BEVERAGES AND SMOKING** • Explain to the patient that he/she might go to the OR in the bed - send 2 cradles with patient and bed.
POST-OPERATIVE IMPAIRMENT OF SKIN INTEGRITY related to surgical manipulation of tissue and disrupted circulation.	• Maintain bedrest. Some patients may be placed on a fluidized air bed as per physician's orders. • Transfer the patient, if possible, to a single room and keep the room warm by keeping the windows and door closed. Provide a radiant heat shield. • Elevate the head of bed 30N for facial flaps and explain to the patient he/she must not lie or put pressure on the surgical site i.e. lie on stomach. • Elevate upper surgical extremity above the heart level or suspend from an IV pole with pillows supporting the elbow. Monitor and record CWMS of fingers q4h x 48 hours or as per physician's orders. • Elevate lower surgical extremity at all times on 2 pillows - or suspend from a Balkan frame as ordered. No dangling. Monitor and record CWMS of toes q4h x 48 hours or as per physician's orders. • Assure there is no pressure or pulling or kinking or tearing of the flap q1h x 48 hours, then q4h or as per physician's orders. The position of the flap must be maintained so the flap must be checked every time the patient has a change of position, e.g. turning, eating, bathing, etc. • Monitor and record flap for circulation, colour, sensation, capillary refill q1h x 48 hours or as per physician's orders. A laser doppler might be ordered to help monitor blood flow. • Assess the incisions q4h for signs of healing, separation, edema, drainage, hematoma. • Monitor and record the temperature, if ordered, of the flap against a control area q1h until further physician's orders (usually for 3-7 days). The flap itself is monitored as well as a "control" area adjacent to the flap. If the temperature variance between the flap and the control area is +

	3o or as ordered for 2 consecutive readings, notify the physician STAT and keep the patient NPO. A digital thermometer will be required to monitor these temperatures. • Cleanse exposed suture lines using sterile saline and sterile applicators prn to keep drainage from crusting and observe approximation of incision lines. Apply ointments as ordered. • Monitor vital signs q4h x 48 hours then TPR q4h • Perform wound care using strict aseptic technique. If infection develops: o swab drainage for C & S o notify physician o report infection as per policy o place on appropriate isolation • Ensure adequate nutritional intake every shift. • Monitor drainage and maintain intact/patent wound drains. Empty and record hemovac drainage every shift. • Maintain position of splints and release q4h for skin care. • Keep bed covers off donor site. Use cradles and bulldog clamps. • Administer ASA, heparin and dextran as ordered. • Apply medicinal leeches as ordered. • Ascertain if an axillary catheter is in-situ and if so call anaesthesia as ordered for a "top-up" (usually q6-8h). Monitor vital signs following "top-up". • Use fan to cool patient only with physician's order.

References

Clamon, J. & Netscher, D. (1994). General principle of flap reconstruction: Goals for aesthetic and functional outcome. Plastic Surgical Nursing, 14(1), 9-26.

Dinman, S. & Giovannone, M. (1944). The care and feeding of microvascular flaps: How nurses can help prevent flap loss. Plastic Surgical Nursing, 14 (3), 154-164.

Ivey, C. & Gordon, S. (1994). Breast reconstruction: New image, new hope. RN, July, 48-55.

Maksud, D. (1992). Nursing management of patients following combined free flap mandible reconstruction. Plastic Surgical Nursing, 12(3), 95-107. Netscher,

D. & Clamen, J. (1994). Methods of reconstruction. Nursing Clinics of North America, 29(4), 725-739.

Reese, J.L. (1990). Nursing Interventions for wound healing in plastic and reconstructive surgery. Nursing Clinics of North America, 25(1), 223-233.

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