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CASE STUDY - A PARTIAL THICKNESS SKIN GRAFTING AND MANAGEMENT OF WOUND

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ABSTRACT

The skin's ability to mend itself after injury is critical to human survival and is impaired in a variety of illnesses. The healing of cutaneous wounds is a complex process that requires a coordinated response from immune cells, hematopoietic cells, and skin cells. We examine the classic theories of wound healing and assess how new discoveries have improved our understanding of the process. We assess existing and experimental techniques to treating cutaneous wounds, with a focus on cell-based therapies and skin transplantation.

KEYWORDS: We examine the classic theories of wound healing and assess how new discoveries have improved our understanding of the process.

INTRODUCTION

Skin grafting is a dermatological closure procedure that is most typically used to repair wounds caused by skin excision. Although grafting is now less popular than flap closures, it can offer satisfactory cosmetic results. Skin grafts, unlike flaps, are fully disconnected from their blood supply, whereas flaps are connected to a blood supply via a pedicle. Skin grafts are less technically demanding, but the process takes longer since it involves creating a second surgical site.

Split-thickness skin grafts (STSG) are made up of the epidermis and a superficial layer of the dermis.

Full-thickness skin grafts (FTSG) include the entire epidermis and dermis.

Composite grafts combine skin with another type of tissue, usually cartilage.

Full-thickness skin grafts are the most widely utilized transplant in dermatology. FTSGs can provide a perfect tissue match for the host location, resulting in minimal scarring and contracture. Composite grafts have a high metabolic demand and are frequently utilized in the nose and ear to replace cartilage. Split-thickness grafts are often less visually pleasing because they lack adnexal structures and have color mismatches. There is also a high risk of contracture with STSG. Split-thickness graft donor sites are also generally more unpleasant for patients than FTSG.

CONCEPTUAL STUDY

CASE STUDY: 47yr old female patient, having C/O: wound present at right breast (**periareolar region**) since 20 days, mild pus discharge from wound site. Pain present at wound site.

AIM: To show case of management of non healing wound over right breast.

OBJECTIVES

1) To observe surgical management of non healing wound at breast region.
2) Identify principles of evaluation and management of skin gratfing over wound site.

MATERIALS AND METHODS

Name XYZ Person, 47 yr old male patient, Hindu by religion, occupation as housewife.
PAST HISTORY
S/H/O: TL (2005)
LSCS. (2005)
Radical debridement of abscess over right breast (23-03-2024)

HPE Report: Debrided tissue from right breast - Histological findings are consistent with breast abscess with fibrocystic disease and hyalinised fibroadenoma.
No evidence of DCIS or malignancy
M/H/O: No any medical history.
K/C/O: DM Type 2 since 1 year
on Rx. 1) Tab. Glimepride 500mg + Sitagliptin 10 mg 1 OD
No HTN /No Ashtma /No kochs /No Thyroid Disorder / No IHD.

Pathophysiology

47-year-old female patient comes in for OPD with a complaint of a wound over the right breast region. The patient was previously admitted to XYZ hospital for radical debridement of an abscess over the right breast. Now that the patient is complaining of a wound, we admit the patient to our hospital for wound management. daily dressing done, swab culture sensitivity test done, and antibiotics started according to the CS report. After a healthy wound, we post it for skin grafting.

PHYSICAL EXAMINATION

GC – Fair afebrile

Pulse Rate – 78/ min

BP- 120/70 mmhg.

CVS- S1S2 Normal

CNS – Conscious and Oriented

RS – AEBE Clear

PA – Soft and Non Tender

B- Passed

M -Passed.

GENERAL EXAMINATION

PALLOR- Not Seen

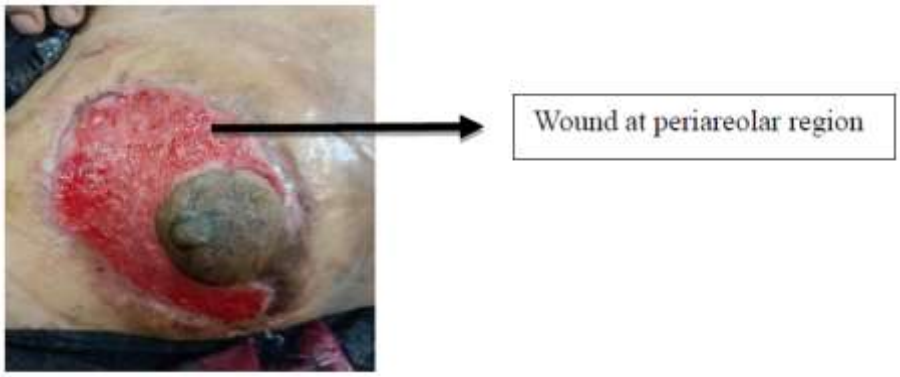
ICTERUS- Not seen

LYMPHADENOPATHY- No regional Lymphadenopathy.

LOCAL EXAMINATION

Inspection

- ound noted at right breast region (periaeolar)
- Wound size approx. 8 x 10cm
- Pus Discharge from wound site.
- Margin are regular



Palpation

- Local Temperature: Not raised
- Tenderness: Tenderness noted upon palpation
- Bleeding on touch present.

Blood Investigations

- HB – 10.1 gm/dl RBC- 4.08 mill/cmm WBC- 9270/ cmm Platelets -4.66 lakh/cmm
- BSL ® - 109 mg/dl
- BUL – 29.8 mg/ dl Sr. Creatinine-0.79 mg/dl
- Serology -Negative
- PT- 17.0 sec INR- 1.18
- Electrolyte – Na- 131 mmol/L K^+ - 3.9mmol/L Cl^- - 94 mmol/ L
- Chest X-ray (CXR): Within Normal Limits (WNL)
- ECG – WNL

ANTIMICROBIALS	MIC	SUSCEPTIBILITY
CEFTAZIDIME	0.25	Sensitive
CEFOPERAZONE/SULBACTAM	<-8	Sensitive
CEFEPIME	<-0.12	Sensitive
AZTREONAM	<=1	Sensitive
IMIPENEM	0.5	Sensitive
MEROPENEM	<-0.25	Sensitive
AMIKACIN	4	Sensitive
GENTAMICIN	<=]	Sensitive
CIPROFLOXACIN	0.12	Sensitive
LEVOFLOXACIN	0.25	Sensitive
MINOCYCLIN	2	Sensitive
TIGECYCLINE	<<=0.5	Sensitive
TRIMETHOPRIM/SULFAMETHOXAZOLE	<=20	Sensitive

Pus CS Report (4-5-2024)

Specimen – Wound Pus

Organism isolated – Serratia Marcescens

Colony count

MANAGEMENT

- Pre operative daily dressing to remove slough & generate granulation tissue.
- IV Antibiotic as per Pus CS report.
- Conservative management is performed to elderly patients who are unable to tolerate & unfit for surgery.

Surgical Management

- Grafting necessitates a good vascular supply for tissue survival and a good donor match for a satisfactory cosmetic outcome.
- Donor sites should have the same thickness, color, texture, and adnexal features.
- Donor sites should match the actinic damage of the graft site, but it is more crucial that the area is clear of malignant and precancerous lesions.

Partial Thickness Skin Grafting Over Rt. Breast Region Under General Anesthesia (G.A.)

A) Preoperative

NBM

Bath

Consent

Inj. Xylocaine 2% sensitivity test

Prepare

Inj. Levoflox 500 mg iv BD (As per Pus CS Report)

Inj. Pan 40 mg iv OD

Inj. Atropine 0.64 mg IM ½ hr prior to surgery

IVF RL 1 pint IV slowly

B) Anesthesia

Anesthesia- General Anesthesia

Sedation-Inj. Midazolam 1 gm Iv

Induction- Inj. Propofol 140 mg Iv

Inj. Scolin 140 mg Iv

Other drug – Inj. Dexamethasone 8 mg IV

Procedure

Supine Position

Under all aseptic precaution Painting and draping done.

The Medial Side of Rt thigh skin is sterilely prepped and then thoroughly cleansed with sterile saline to wash off the antiseptic and prevent desiccation.

Liquid paraffin can be used to lubricate and hydrate the skin.

An partial thickness skin grafting includes the epidermis and part of the dermis.

The humbys knife with blade applied firmly against the skin with Upward and forward pressure.

An assistant can use forceps to gently grasp and apply traction to prevent the graft from folding in on itself.

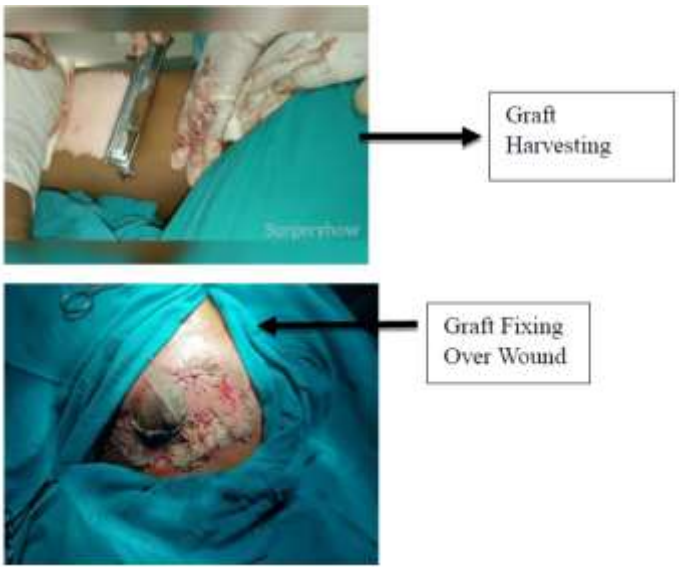
If desired quantity of the graft can be subsequently meshed by using 11 no. blade; meshing in favored in larger grafts.

The graft is then applied to the defect and contoured to fit the defect.

The graft is then anchored in place using staples.

Then betadine soaked gauze place over graft and it fixed by merk silk no 2.0

The donor site can be treated like an abrasion and covered with bactigrass and a bandage.



Post Operative

Antibiotics	Inj. Levoflox 500 gm IV BD (5 days) Tab ceftum 500 mg 1 BD (5 days)
Analgesics	Tab Enzoflam 1 BD
Nutritonal support	Tab celin 500 mg OD Syp Multivitamin 2 TSF BD
Post OP Course	Dressing inspection on day 10 healthy healing wound, no any discharge and dressing with betadine done. Patient discharged after dressing and follow up after 10 days. After graft fixed properly stapllec removed

Post Operative Wound Healing

POD 10

POD 15

POD 25

Doner site POD 25

DISCUSSION

Skin grafting is a surgical procedure where healthy skin is removed from one part of the body (the donor site) and transplanted to another area that has lost skin due to injury, burns, surgery, or infection (the recipient site). The goal is to promote healing, prevent infection, and improve the function and appearance of the affected area. Advancements in skin grafting techniques, such as the use of tissue engineering and stem cells, have expanded the possibilities for skin regeneration. These techniques aim to create skin grafts that closely mimic the properties of natural skin, leading to better outcomes for patients. Overall, skin

grafting plays a crucial role in reconstructive surgery, helping patients recover from traumatic injuries and improve their quality of life.

CONCLUSION

Partial thickness skin grafts resulted in full closure or wound improvement of a majority of patients.

Partial thickness skin grafting provides another treatment option to surgeon when wound is not healing.

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