Objectives

- Understand pathophysiology of the surgical wounds
- Understand the types of surgical closure
- Understand cascade of infection
- Understand management strategies
- Identify best practices in home care setting for the management of patients with surgical wounds & incisions
There are more than 110 million surgical incisions every year, which require some wound management treatment.

In the U.S., >40 million inpatient surgical procedures occur each year; 2-5% are complicated by surgical site infection.

SSIs are the second most common nosocomial infections, costing $400-$2,600 per infection (TOTAL: $130-$845 million/year)
Definition

Wounds & Incisions resulting from a surgical procedure are called Surgical Wounds & Incision
Infected Surgical Wound
Infected Surgical Wound
Infected Surgical Wound
Infected Surgical Wound
Phases of Wound Healing

Wound healing is a continuum of complex interrelated biological processes at the molecular level. Healing is divided into the following three phases:

- Inflammatory phase
- Proliferative phase
- Maturation phase
Surgical Wound
The inflammatory phase commences as soon as tissue integrity is disrupted by injury; this begins the coagulation cascade to limit bleeding.

Duration 0 – 14 days

In wounds closed by primary intention, lasts 4 days.

Characterized by erythema, edema and pain.
Proliferation Phase

The proliferative phase begins as the cells that migrate to the site of injury, such as fibroblasts, epithelial cells, and vascular endothelial cells.

Fibroblast proliferation stimulated by macrophage-released growth factors.

Granulation tissue and neo-vascularization

Duration 4 – 42 days
Proliferation Phase
Maturation / Remodeling Phase

Duration 24 days – 18 month
Collagen degradation, and collagen remodeling
Scar Tissue formation
Realignment of collagen fibers
Tensile strength 80%
Maturation / Remodeling Phase
Types of Wound Healing

Primary Intention

Describes a wound closed by approximation of wound margins or by placement of a graft or flap, or wounds created and closed in the operating room.
Types of Wound Healing
Secondary Intention

Describes a wound left open and allowed to close by granulation, contraction and epithelialization.
Types of Wound Healing
Tertiary Intention

Delayed closure or partial closure. Often used for infected wounds where bacterial count contraindicates primary closure.

Wound edges are approximated within 3-4 days and tensile strength develops as with primary closure.
Types of Wound Healing
Risk Factors

Comorbidities – Uncontrolled Diabetes mellitus, Cancer, Renal disease, Liver disease, Obesity, weakened immune system.
Age of the patient
Malnutrition
Tobacco use
Inappropriate use of dressings
Systemic Steroid use
Wound Infection

CONTAMINATION

COLONIZATION

CRITICAL COLONIZATION

Infection
Wound Infection | Signs & Symptoms

Wound is painful, even though there is no visible evidence (early sign)
High or low temperature, low blood pressure, or a fast heart rate
Discharge & odor from the wound
Increased swelling, redness, warmth
Wounds that do not improve with treatment
Wound Infection | Signs & Symptoms
Topical Antimicrobials

Topical Silver Dressings
Cadexomer Iodine Gel
Antimicrobial Cleanser
Topical Antibiotics
Conclusion

Appropriate dressing selection to manage the drainage is vital.

No “WET TO DRY DRESSING” ORDERS.

Keeping the surgical site clean and dry is the goal.

Weekly follow ups to assess & monitor, until the wound is completely healed.

Early intervention to prevent possible infection.

Multidisciplinary approach when dealing with difficult wounds. Infectious disease specialist, Wound care nurse and Physical therapist.
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