SURGICAL DRESSING

[Type the document subtitle]

[Type the abstract of the document here. The abstract is typically a short summary of the contents of the document. Type the abstract of the document here. The abstract is typically a short summary of the contents of the document.]

Md. Maimun Hossain
11/22/2012
SURGICAL DRESSING

**DEFINITION**: Surgical dressing is a term applied to a wide range of materials used for dressing wounds or injured or diseased tissues.

A dressing is designed to be in direct contact with the wound, which makes it different from a bandage, which is primarily used to hold a dressing in place. Some organizations classify them as the same thing (for example, the British Pharmacopoeia) and the terms are used interchangeably by some people. Dressings are frequently used in first aid and nursing.

**CORE PURPOSE OF SURGICAL DRESSING:**
A dressing can have a number of purposes, depending on the type, severity and position of the wound, although all purposes are focused towards promoting recovery and preventing further harm from the wound. Key purposes of are dressing are:

1. **Provide an environment for moist wound healing**. Desiccation of a wound is a major factor in retarding wound healing and increasing scarring. Dressing that prevent desiccation provide an optimal environment for autolysis cell migration, granulation, and reepithelialization.

2. **Prevent maceration by permitting evaporation or absorption**. In highly exudative wounds, excessive moisture and autolytic enzymes will damage repairing tissue and will provide a perfect culture medium for microbes.

3. **Promote hemostasis**.

4. **Protect the wound from further damage** (mechanical damage, microbial invasion, dehydration, maceration, chemical damage, alteration in pH).

5. **Reduce heat loss**.

6. **Control microbial growth (by incorporation of antimicrobial drugs)**.
7. Promote autolysis.
8. Promote healing.
9. Provide compression, promoting hemostasis and reducing edema.
10. Provide support.
11. Reduce pain, increase patient comfort, and improve functional use of wound site.
12. Improve the appearance of the wound site.
13. Reduce odor.

CLASSIFICATION: Functionally, the simplest method of classification uses the terms primary and secondary dressing. A primary dressing directly contacts the wound. It may provide absorptive capacity and may prevent desiccation, infection, and adhesion of the dressing to the wound. A secondary dressing is placed over a primary dressing, providing further protection, absorptive capacity, compression or occlusion. Although some dressings are solely primary or secondary in nature, others have the characteristics of both. The following classification is used here:

TYPES OF SURGICAL DRESSING:
1. Primary dressing
2. Primary / secondary dressing
3. Secondary dressing
   I. Absorbents
   II. Bandages
   III. Adhesive tapes
   IV. Protective
PRIMARY DRESSINGS

**Plain Gauze** has been used as a primary dressing but will stick to all but clean, incised wound. Although this property has been used to debride exudative, infected, and necrotic wounds, this practice may be painful and is often counterproductive, causing the removal of granulation tissue and new epithelium.

**Impregnated Gauze** is used to reduce its adherence to wounds. Cotton rayon or cellulose acetate gauze has been impregnated with a variety of substances such as petroleum or paraffin.

**Film Dressing** are films of polyurethane with acrylic or polyether adhesives that provide a semipermeable membrane to water vapor and oxygen yet are waterproof.

PRIMARY / SECONDARY DRESSINGS

**Composite Dressings** have primary and secondary components that prevent adherence to the wound, with some degree of absorbency.

**Hydrogel** is typically cross-linked polymer such as polyacrylamide. Hydrogels are nonadherent dressings that through semipermeable film allow a high rate of evaporation without compromising wound hydration. This makes them useful in burn treatment.

**Hydrocolloid Dressings** combine the benefits of occlusion and absorbency. Hydrocolloids are dispersions of particles around which water molecule and solvated ion form a shell-like structure.
SECONDARY DRESSING:

I. ABSORBENTS:

Surgical cotton: Cotton is the basic surgical absorbent. It is official Purified cotton USP.

Surgical Gauzes: The function of surgical gauzes is to provide an absorbent material of sufficient tensile strength for surgical dressing. It is known as Absorbent Gauze.

II. BANDAGES:

The function of bandages is to hold dressing in place by providing pressure or support. They may be inelastic, be elastic, or become rigid after shaping for immobilization.

Common Gauze Roller Bandage is listed in the USP as a form in which Absorbent Gauze may be provided. It is prepared from Type I Absorbent Gauze in various widths and lengths.

Muslin Bandage Rolls: It is made of heavier unbleached material (56–60 mesh). They can be applied in the same widths as the regular gauze bandage. Muslin Bandages are very strong and are used wherever gauze bandage do not provide sufficient strength or support.

Elastic bandages are made in several types:

a. Woven Elastic Bandage is made of heavy Elastic webbing containing rubber threads.

b. Crepe Bandage is elastic but contains no rubber.
c. **Conforming Bandage** is made from two plies of specially processed, high
quality 14 8 cotton gauze folded to the container.

d. **High Bulk** Bandage is made of multiple layer (typically Six) of crimped
cotton gauze.

e. **compression Bandage** is composed of cotton knitted or woven with either
viscose, polyurethane, nylon or elastane threads.

**TRIANGULAR BANDAGES** usually are made by cutting a square of bleached
muslin diagonally from corner to corner, forming two right triangles of equal size
and shape. They are used in first aid work for head dressing, binder and arm sling
and as temporary splint for broken bones.

**ORTHOPEDIC BANDAGES** are used to provide immobilization and support in
the treatment of broken bones and in certain conditions of bones and joins. Plaster
of Paris impregnated gauze has been the standard material for this purpose.

**ORTHOFLEX ELASTIC PLASTER BANDAGES** are plaster of Paris
containing elastic threads in the fabric and are intended for specialized prosthetic
uses.

### III. ADHESIVE TAPES

Surgical adhesive tapes are made in many different forms, varying both in the
types of backing and in the formulation of the adhesive mass according to specific
needs and requirements.

**RUBBER BASED ADHESIVES** A second group of surgical adhesive tapes is the
cloth-backed and plastic-backed rubber adhesive. This are used principally where
heavy support and a high level of adhesion are required.

**ADHESIVE TAPE REACTIONS** While skin reactions formerly were accepted
by the medical profession as almost predictable sequela
IV. **PROTECTIVES:** Until recently, protective included only the various impermeable materials intended to be used adjunctively with other dressing components to prevent the loss of moisture or heat from wound site to protect clothing or bed linens from wound exudates. Film dressings are excellent devices to protect against infection. In addition, they may be used to protect vulnerable areas against pressure sores. Protective also used to cover wet dressing and hot or cold compresses. In common use as are plaster sheeting and waxed or plaster coating paper.

**SELECTION OF A DRESSING:** Dressing selection should be made on the basis of the degree of exudation, presence or likelihood of infection, presence of necrotic tissue, and the automatic site. The correct selection of a wound dressing depends not only on the types of wounds but also on the stage of repair. The use of a wound dressing cannot be considered in isolation, but rather in the contest of an integrated wound-care program.

**USAGE OF SURGICAL DRESSING**
Applying a dressing is a first aid skill, although many people undertake the practice with no training - especially on minor wounds. Modern dressings will almost all come in a prepackaged sterile wrapping, date coded to ensure sterility. This is because it will come in to direct contact with the wound, and sterility is required to fulfil the 'protection from infection' aim of a dressing.

Historically, and still the case in many less developed areas and in an emergency, dressings are often improvised as needed. This can consist of anything, including clothing or spare material, which will fulfil some of the basic tenets of a dressing - usually stemming bleeding and absorbing exudate.

Applying and changing dressings is one common task in nursing
An "ideal" wound dressing is one that is sterile, breathable, and conducive for a moist healing environment. This will then reduce the risk of infection, help the wound heal more quickly, and reduce scarring.

SOURCE OF SOME DRESSING (AS EXAMPLE) Natural and artificial fibers are used in surgical dressing. The natural fibers are obtained from vegetable sources (e.g. cotton, Flax, Hemp, Jute, etc) or from animal sources (e.g. Wool and Silk). Their short description are giving below:

ABSORBENT COTTON:

Biological source: Absorbent cotton consists of epidermal hair of the seeds of

- *Gossypium herbaceum* Linn
- *Gossypium hirsutum* Linn
- *Gossypium arboreum* Linn
- *Gossypium barbadence* Linn

Family: Malvaceae

Geographical source:

- Egypt
- India
- South America
- USA
- South Africa
- Pakistan
JUTE

**Biological source:** Jute consists of the strands of pholem fibres obtained from the stem bark of

- *Corchorus capsularies* Linn.
- *Corchorus olitoritus* Linn.
  And other species of *Corchorus*.

**Family:** Tiliaceae.

**Geographical source:**

It is cultivated throughout the hotter parts of India in Bengal, Assam, Bihar and Orissa as well as in most tropical countries.

WOOL

**Biological Source:** Wool is obtained from the protective covering or fleece of the sheep. *Oves arries* Linn.

**Geographical Source:** Wool is producing countries are

- Australia,
- Russia,
- Argentina,
- India and
- America.

SILK

**Biological Source:** Silk is obtained in the fibre-form from the cocoons of *Bombyx mori* Linn. Commonly known as silk worm or mulberry silk worm, and other species of Bombyx and of Antheraea such as A. mylitta, A. assama, A. pernyi and A. yama-mai.
**Geographical Source:** Silk is produced in

- China,
- Japan,
- India,
- Asia Minor,
- Italy,
- France and some other countries.

These fibres are made up of long chain molecules which may be a carbohydrate or a protein molecules. Some fibres e.g. Nylon and Terylene, are synthetic fibres prepared from long chain molecules of polymers. Regenerated carbohydrate materials and chemically modified fibres are Viscose, Acetate Rayons Alginate yarn and Oxidized cellulose. Asbestos and glass are obtained from mineral sources.