

## HISTORY OF VRANA FROM ANCIENT ERA TO PRESENT ERA

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### ABSTRACT

History of any science gives an idea, how our ancestors solved the problems. Since history of mankind, wound continued to be one of the common suffering of which humans are constantly exposed. Surgical measures have been used in earliest time of civilization that is evident from the fossils of trephine human skulls and curved knives in the excavation.

Human body has been constantly exposed to trauma, to extreme cold and heat, and also to various types of infection. Man is susceptible to wounding and that has led to think about healing from very early stage of human development. The art of surgery originated under the compelling effect of immediate crisis attempts to repair.

The techniques of prevention of infection and its influence on wound are available in the scripture found during ancient civilization. The first dressings ever used were the leaves of trees, which were easily available from the surrounding. It appears that some of the ancients used tree resin to cover and protect the wound surface.

**Key words-** Ancients, Dressings, History, Western

### Introduction

#### Chronological Milestones of Wound care in Indian History

The earliest record of treatment of wounds is found in Veda, the oldest book of the world, written about 3000 B.C whereas the general management of wounds by herbal drugs is found to have been mentioned.

In Rig-Veda there is description about injured leg of Queen Bisphala being treated by amputation<sup>1</sup>. Vrana ropana in reference to transplantation of head of Yagya (Madhuvidhya and KakshayaVidhya) has also been mentioned in Rig-Veda. For inflammatory edema (Vrana Shoth) use of drugs like Aswatha, Puskara, Vansha, Shigru etc. have been mentioned.

In Samaveda, Vrana ropana of a prince who was injured during war has been depicted (Jaiminya Brahmins 3/94 — 95).

In Atharvaveda, there are number of references where wound and its management has been described. In case of traumatic injuries use of Jal Chikitsa (Hydrotherapy) has been advised<sup>2</sup>. Measures to control bleeding have also been mentioned which including remedy available from nature in form of water<sup>3</sup>- Cold water that comes down from mountains is best remedy

for hemorrhage, Upajeeka<sup>4</sup> (Balmika Mritika), Stone<sup>3</sup> (Ashman) and to stop bleeding drugs Vishanaka<sup>6</sup>, Cheepadru<sup>7</sup>, Munja, Laksha<sup>8</sup> etc. have been advised.

The healed fracture of the fossilized skeleton found in Egypt(3000 B.C.) points to Egyptian civilization to have brought a system of medicine into practice in which surgery had a respectable place.

In Balmiki Ramayana it has been described that Lakshmana after being injured in battlefield was treated by drugs Mritsanjeevani, Vishalyakarani, Savarankarani, and Sandhankarni<sup>9</sup>.

In Mahabharata Bheeshma is said to have been attended by a number of army surgeons when he was wounded in the war.

Acharya Charak (1500 B.C.) expanded the knowledge of wound and its management and made a detailed description of wound which included their classification, Signs symptoms, prognosis and 36 upkramas for management<sup>10</sup>.

At the time of Sushruta (1000 BC) the knowledge of wound was at its peak level. Sushruta being a surgeon knew its value and has dealt almost all possible clinical aspects of wound healing in detail. Though he mentioned classification, aetiology, sign and symptoms, prognosis with treatment and its complications, yet he much emphasized on Dushtavrana or Chronic nonhealing wound and 60 upkramas described for management<sup>11</sup>. Sushruta also described various techniques for control of bleeding, different methods of suturing the fresh wounds and varieties of drugs to be used for Shodhana and Ropana.

In Budha Kala (300 BC), foot injury of Buddha was managed by Jeewak. Use of lancet to incise boils and then use of astringent herbs, compression and bandage was the management of abscess.

Management of Vrana is described by some methods in Buddhist literature, which are -

- i. Salluddharana - Extraction foreign body
- ii. Vrana dhovana - Cleansing of wound
- iii. Sosana - Drying of wound
- iv. Bhesajjanulimpana - Application of ointment.

Vagbhata (5<sup>th</sup> century A.D.) added more preparations for treatment of wound and described 8 types of traumatic wound and described various preparation in Astang Samgrah and Astang Hridhaya.

Sharangdhar (13th century A.D.) described various types of dressing material such as malhar kalpana (ointment application) ex- sarjras malhar in which Resin of *Shorea robusta* is used.

In Rasa-Ratna-Samuccaya the (13th Century A.D. )India many preparation of Swarna, Rajata and Gandhak were used for wound healing.

In Bhasijya ratnawali ( 19 century A.D.) by Shri Govinda Dasji in Shoath(Chapter-42) and Vranashoath(Chapter-47) chikitsa many drug for external application as panch valkal lape was mentioned <sup>12</sup>.

### Chronological Milestones in Wound care in Western History

The Ebers Papyrus, is an Egyptian medical papyrus of herbal knowledge dating to 1550 B.C. The Ebers Papyrus is among the oldest preserved medical documents.

The Edwin Smith Papyrus an ancient Egyptian medical text was the oldest known surgical treatise on trauma .which have been a manual of military surgery, describes 48 cases of injuries, fractures, wounds, dislocations and tumors. Detailed information of disease management including wound management through applications of lotions and grease to assist healing were describe in it.

Hippocrates, Greek Physician and Surgeon (460-377 BC) had faith in the healing power of nature and he favored the use of lukewarm or cold water, wine, oil, honey and vinegar for open wound irrigation and dressings to prevent further injury .

First systemic study of wound in western surgery was done by Celsus / Greek surgeon 1<sup>st</sup> century (A.D.) suggested removing the clots from fresh wounds and cover with vinegar. He also described cardinal symptoms of inflammation (Calor, Rubor, Tumor, Dolor) to which Gallon (2<sup>nd</sup> Century A.D.) added one more symptom *i.e.*, loss of function.

Hua a Chinese surgeon (2<sup>nd</sup> Century A.D.) treated wounds by herbal ointment.

Claudius Galen (130-200 A.D.) instigated the “laudable pus” theory; incorrectly assumed the development of pus in a wound as a positive part of the healing process and called wounds as "windows into the body" .

Up to the 11<sup>th</sup> Century A.D. all the medical person of western countries were of the opinion that pus formation was healthy sign in the healing process of wound.

William Sacbiceto (1210-1280 A.D.) of Bologna Surgical School supported by Gay (1968) held quite definitely that pus formation was a hazard for wound.

Theodericin 12<sup>th</sup> Century A.D. described debridement of wound and observed that some wounds were healed without suppuration after proper dressing.

Ambrose Pare (1510-1590) discouraged the practice of 'hot-oil' cauterization of wounds and believed in natural healing of wounds .

John Hunter (1723-93) suggested that the wound may heal up without suppuration and complication.

Lord Lister (1827-1912) came out with antiseptic methods of treating wound and he was first to use carbolic acid as chemical antiseptic.

Koch, Professor of hygiene and microbiology, Berlin (1843-1910) recognized the cause of infected foci as secondary to microbial growth.

Semmelweis, Austrian Obstetrician (1822-1895) recognized the usefulness of antisepsis in wound prevention

Antonie Depage, Belgian Military Surgeon (1862-1925) reintroduced wound debridement and delayed wound closure. Believed that microbiological assessment of wound brushings were a reliable guide for timing secondary wound closure.

During World War I(1914 -1918) Dr. Alexis Carrel realized that the greatest surgical need was to develop a better method of sterilizing wounds, so he and English chemist HenryD. Dakin developed a system that would irrigate wounds with a sterilizing solution, saving soldiers' lives and limbs. Dakin developed the solution, while Carrel developed an apparatus to deliver it. The Carrel-Dakin method of antiseptic irrigation of deep wounds was immensely successful so that it will prevent almost all amputations due to infection. It gives the surgeon control over infection and opens a new era in wound care .

Dr. Alexis Carrel provided another important contribution by their studies of incised wound, using the gain in breaking strength as an index of the rate of healing and also demonstrated the effect of age, temperature, infection, avitaminosis and other conditions on wound healing.

Alexander Fleming, Microbiologist (1881-1955) revolutionized wound treatment with his legendary discovery of penicillin. In 1941 Penicillin was isolated and came in wide spread use for prophylaxis and cure of contamination.

Aseptic surgery by Halstead, Professor of Surgery, John Hopkins University, US (1852-1922) sterilization of instruments began in 1880s and introduced rubber gloves in handling disinfection of surgical instrument.

J. Bloodgood, Halsted's student introduced the routine use of gloves during aseptic/surgical procedures.

Florence Nightingale (1894) firmly believed that hand washing and strict hygiene actually helped in faster healing.

In 1913, Paul Ehrlich invented chemotherapeutic agents which came in practice in 1935 after various studies of toxicity and tolerance of doses.

Banting Best, Macleod, 1921 discovered insulin which had influence on treatment of wound in diabetes.

Howard Floery (1940) used penicillin clinically for the first time in wound management.

Mary Ayton (1985) defined the terminology currently in use for wound infection.

Vincent Falanga (1994) identified the concept of 'critical colonization' with fresh insights into chronic wound healing and non-healing wounds.

Now-a-days a number of antibiotics are available to prevent and cure suppuration. Since 1966 tissue culture methods, have also been utilized to study the rate of healing under different environmental conditions.

The present knowledge of healing of wound is based on visual observations. The light microscopic development and recently the electron and polarizing microscope, x-ray diffraction and auto radiographic studies have helped much in the study.

In 21<sup>st</sup> century role of stem cells in cutaneous (skin) wound healing is a major area of research. Bone marrow contain stem cells that play a major role in cutaneous wound healing. In extensive cutaneous injury, self-renewal subpopulations of stem cells induced in the bone marrow to participate in the healing process, whereby they give rise to collagen-secreting cells that seem to play a role during wound repair.

Scarless wound healing is a concept based on the healing or repair of the skin (or other tissue/organs) after injury with the aim of healing with subjectively and relatively less scar tissue than normally expected. Wound healing with the concept of scar free healing, which results in absolutely no scar (free of scarring) is a new area of research in wound healing.

**Conclusion-** Wounds have been occurring as long as existence of life. The earliest reference of Wound is found in the Rigveda (3000 B.C) in context of war injuries in Indian history and in Western history in Ebers Papyrus an Egyptian medical papyrus of herbal knowledge dating to 1550 B.C. Basic concept of wound cleansing, closure and splinting has been also translated from Egyptian hieroglyphics. Wound care has been documented since 3000 B.C., during pyramid age when Imhotep recorded knowledge of wound case of his patients. Since that time, there have been various advancements in the management of wounds especially during the last two to three decades i.e. stem cell therapy, Scar less wound healing, Dermal patch technology of wound healing.

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