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## Wound Dehiscence – An Ayurvedic Viewpoint

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**Abstract:** Wound dehiscence during the post operative stage is a huge distress both to the surgeon and patient as it has negative impact on the physical, psychological, social and economic life. Sushruta was the most primitive author narrated the subject in his treatise. The factors which disrupt the wound include local disharmony of the doshas, local vascular pathological events, fear, grief, anger, trauma and indigestion along with medical and surgical errors. Wound related factors include Dosha prakopa [disharmony or disequilibrium of doshas] and rakta dushti. The causes related to patient are Krodha [anger], Bhaya [fear], Harsha [excessive laughter], Ajeerna [Indigestion] and Vyayama [strenuous exercise] which in turn affects normalcy of doshas thereby wound disruption.

**Keywords:** Wound, Dehiscence, Rakta Dosh, Ajeerna.

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**INTRODUCTION:**

Post operative wound separation or gaping is termed as Wound dehiscence.<sup>1</sup> Multiple factors are being identified and are being researched for their role in disruption of healed wound. Thorough screenings of ancient texts assist in understanding the etiological factors and prevent the disruption of wound. This article reviews the list of factors mentioned in Ancient Ayurvedic treatises.

An earliest, detailed and scientific written record on the wound is available in Ancient Ayurvedic treatises of *Charaka*, *Sushruta* and *Vagbhata*. Enormous data on wound and wound care is treasured in the treatises. The factors listed for wound dehiscence can be broadly categorized into three categories as Wound related [local causes], patient related [general causes] and those which fall under the umbrella of medical or surgical errors.

Wound related factors include *Dosha prakopa* [disharmony or disequilibrium of doshas] and *rakta dushti*. The causes related to patient are *Krodha* [anger], *Bhaya* [fear], *Harsha* [excessive laughter], *Ajeerna* [Indigestion] and *Vyayama* [strenuous exercise] which in turn affects normalcy of *doshas* thereby wound disruption.

**Aim & Objective:**

Screening and review of Wound dehiscence factors from Ayurvedic treatises.

**Materials & Methods:**

Literary screening and systematic review of Ayurvedic treatises and texts of contemporary sciences.

**Observation**

Management of post operative wounds are always an uphill task for surgeons which gets even harder if associated with systemic illness like diabetes, tuberculosis, or leprosy and with vascular, neurological pathologies.

During the post operative care stern instructions are directed for the patients in

order to accelerate the positive results of the therapy and also to avoid patient falling prey for post operative complications. Any deviation from the instructions results in wound complications. Ayurveda firmly believes the complete epithelialization is not complete healing of the wound, it states after complete epithelialization, restoration of normal tone, colour, and hair growth on the healed scar is eligible for attributing it as completely healed wound. After complete healing of the wound certain etiological factors must be avoided which possesses the potential of wound dehiscence. The factors are depicted in Table 01. In this study, excluding medical or surgical or operative errors other wound related and patient related factors are discussed.

**Table No 1, depicting the Causes for Wound Dehiscence:<sup>2,3,4</sup>**

Sl No	Causes for Wound Dehiscence	Description
1	<i>Dosha prakopa</i>	Aggravation of bodily humors or Doshas
2	<i>Rakta dushti</i>	Vitiated blood
3	<i>Vyayama</i>	Strenuous exercise
4	<i>Abhighata</i>	Injury
5	<i>Ajeerna</i>	Indigestion
6	<i>Harsha</i>	Excessive laughter
7	<i>Krodha</i>	Anger
8	<i>Bhaya</i>	Fear

**Dosha Prakopa [Bodily humors]:**

Health and illness of an individual is chiefly dependant on *dosha* or humoral factors.<sup>5,6,7</sup> The disorders in the body are never independent of *Doshas*. *Doshas* in normalcy benefit the individual health whereas its abnormality leads to various pathological consequences.<sup>8,9</sup>

**Inseparable relation of wound and doshas:**

The three *dosha* [bodily humors] are responsible for health and ill health is an eternal truth, in inflammatory swellings the role of each *dosha* is as follows – *Vata* is responsible for pain, *Pitta* for *Paka* [Suppuration] and *Kapha* for *Puya* [Pus formation].<sup>10</sup> Nija Vranas are the resultant of doshic imbalance while the doshic involvement in traumatic wounds are minimal, due to various etiological factors doshic aggravation transforms the traumatic wound into pathological ulcer.<sup>11</sup>

Vitiation or disequilibrium of *dosha* during post healing phase is a potent cause for wound dehiscence, and patients are instructed not to adhere to it. For instance, in an established case of *Prameha*, if prescribed remedial measures are not employed customarily that results in further aggravation of doshas and vitiation of *mamsa* and *rakta* precipitating a swelling or *pidaka*.<sup>12</sup>

#### DISCUSSION:

##### **Rakta Dushti [Vitiation of Blood]:**

*Rakta* is measured as the fourth and one of the vital bodily humors along with *Vata*, *Pitta* and *Kapha*.<sup>13</sup> *Vata*, *pitta* and *Kapha* are measured as the primary and most important factors for genesis of human organism. The three doshas along with a fourth, the *rakta*/blood regulate the origin, preservation and dissolution of animated organism and permeate it with their respective properties till the moment of death. *Rakta*, a key factor for maintenance of health and also for genesis of disease, gets vitiated due to various etiological factors, one among those factor is *Ajeerna*. An impurity in *rakta dhatu* in turn hinders the normalcy of bodily equilibrium. In patient with wound; it afflicts the nutrition at local and systemic level also.<sup>14</sup> The Vitiated blood must be periodically extracted out of the body through bloodletting modes detailed in texts, if not, it produces itching, swelling, redness, burning sensation,

suppuration and pain in the local vicinity. In healed wound it disrupts the scar tissue and thereby gaping of wound.

##### **Vyayama & Maithuna [Exercise & Coitus]:<sup>15,16</sup>**

Any sort of physical strain born out of exercise or sexual intercourse in a person with a ulcer or wound is detrimental to healing, as the energy and nutrients burnt out throughout the sternous phase will affect the repair process. A patient with ulcer or wound requires good amount of nutrition, proper metabolism for successful healing phase.<sup>17,18</sup> Charaka also opines the same in relation to the detrimental effect of *vyayama* to the patient.<sup>19</sup> In order to maintain the vitality of the tissue and mobility of the individual, exercise in its mild form is permissible. Either increased exercise or increased sexual activity both is poised to aggravate the all three doshas specially *Vata*.<sup>20,21,22</sup>

##### **Certain illustrations of recommendations to avoid physical strain either by Vyayama or by Maithuna:<sup>23</sup>**

*Vyayama* and *Maithuna* are to be abstained by a person who had healed post operative wound of *Bhagandara* [Fistula in Ano], *Ashmari* [Vesical Calculus] and fracture cases for a period of one year to forego the wound complications.<sup>24-28</sup>

##### **In post-operative period of Abdominal injuries:**

Subsequent to trauma of the abdomen wall and viscera, wounds are managed with utmost caution, during the post healing phase; the patient should live a life of strictest continence and forego all kinds of physical exercise.

Wound edges suffering greater tension in a closed wounds, in an less elastic, stretchable region of the body suffers from wound dehiscence in its due course. The reasons for it are insufficient perfusion, prolonged hypoxia and insufficient angiogenesis.<sup>29</sup> In addition to normal aging, prolonged psychological or

physical stress can severely delay wound healing.<sup>30</sup>

Any strenuous work is either excessive *vyayama* or excessive *maithuna* or *vyavaya* is a threat to health of an individual. Aggravated vata dosha is responsible for untoward effects of *vyayama* and *maithuna*. In the context of abdominal surgeries, physical strain in any form precipitate the gaping of wound thereby causing incisional hernia.<sup>31</sup> For a pathological ulcer, this impediment delays the wound healing due to disruption of granulation tissue formation and inadequate rest to the part for regeneration.

#### **Abhighata [Traumatic Injury] :**

Repeated trauma on healed wound or sutured wound facilitates gaping of the wound. Hence avoiding injury to the wounded site is a common prescription during the post operative phase.<sup>32</sup>

#### **Ajeerna [Indigestion]:**

Proper digestion is stressed more in Ayurveda, as any derangement will lead to ill-health. Due to indigestion, the metabolic requirement of the body is unfulfilled, hence it fails to heal or takes longer duration to heal. Off late studies are recognizing indigestion as one of the factors of wound dehiscence.<sup>33</sup> To achieve health in a easier way, best among the relievable to be targeted is indigestion.

#### **Untoward effects of Ajeerna [Indigestion]:**

The pathological events resulted because of indigestion is the derangement of bodily humors [*Dosha*] causing inflammation, pain, increased discharge from the wound and suppuration.<sup>34-35</sup>

#### **Ajeerna – cause for Wound Dehiscence:**

After whole re epithelialisation and scar formation in a wound, the site is vataexposed for Wound dehiscence till the tissue gets adequate tensile strength. If an individual is resorting to unwholesome dietetic regimen during indigestion and indulges in strenuous activities then probability of wound disruption

is towering. Six to seven months period is specified for a person to avoid adhering to these factors.<sup>36</sup> After trauma, there will be increased demand by the body for metabolic fuels when hormonal and cellular immunity following injury is impaired, thus malnutrition causes wounds to heal inadequately and incompletely.<sup>37</sup>

*Ajeerna* impairs the metabolism and proper nutrition to defective site becomes inadequate or completely blocked. Along with three doshas, *rakta dosha* gets aggravated mainly giving rise to increased swelling, pain score, exudation, burning sensation and suppuration.

#### **Krodha [Anger]:**

Among the psychological wound impediments, *Krodha* [Anger] is being placed at the top, as it is one of the prime impediment that directly affect the repair of the tissue.<sup>38,39,40</sup> Anyone can perceive one's anger by the act or intent of injuring others.

#### **Effects of Krodha [Anger] on body:**

Anger state aggravates *Pitta dosha* and this results in aggravation of inflammation or suppuration. The vitiated *Pitta* and *Rakta* enhances the suppuration process thereby delaying wound repair.<sup>41,42</sup>

#### **Krodha to be avoided even after complete epithelialisation:**

Anger can contribute for wound dehiscence even after complete epithelialization. Thus, among the list of factors to be avoided ie fear, grief and physical strenuous activities, anger is also mentioned.<sup>43</sup>

#### **For instance in the context of Bhagandara [Fistula in Ano] Treatment:**

*Vyayama* [Exercise], *Maithuna* [Coitus], *Krodha* [Anger], Animal riding, consumption of dietary items which are heavy to digest must be avoided for a year after complete healing to avoid the recurrence.

Influence of anger on wound healing is established by a number of trials, which

supports *Charaka's* statement as it is one of psychological impediment for wound.<sup>44,45</sup>

Several studies denote that during anger state there will be increased heart rate, serum testosterone level and testosterone levels, whereas cortisol level decreases and also varied alterations in cortisol secretion, disturbed immune functioning, and surgical recovery thereby affecting the healing.<sup>46</sup>

*krodha* and *shoka* both are responsible for altered psychological balance of the body and it destructs the healing mechanism.

Both these factors afflict the healing in *Nija & Aagantuja vranas*. *Vata* gets provoked due to *shoka* and *pitta* gets provoked due to *krodha*. *Charaka* opines grief is the cause for aggravation of any ailment and its effect can be tested on any ailment.

#### **Harsha [Excessive laughter]:**

*Harsha* or excessive laughter is considered as an significant cause for wound dehiscence. This will affect in increased tissue tension or increased intraabdominal pressure which slows the healing phase.<sup>47,48</sup>

Such activities which rise intra abdominal pressures are prohibited especially after post operative cases of abdominal

surgeries. Due to increased intra abdominal pressure wound gapes and attracts infection.

#### **Bhaya [Fear]:**

Impact of fear on wound healing and its role in wound dehiscence is not much studied over the years. The possible theory behind it being key factor for wound dehiscence is being related with psychological stress imparted on the body and immune system due to fear. Psychological wellbeing is as essential as the nutritive support for any repair of injury in the body.

#### **CONCLUSIONS:**

Wound dehiscence is one of the common crisis encountered during postoperative recovery phase of the patient. Ayurvedic Surgical treatises have earliest written evidence on the subject. Eight organic and psychological factors were listed by Sushruta which are viable and scientifically validated in the current era.

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Nil.

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