



## INSIGHT TO BHINNA VRANA W.S.R TO STAB INJURIES

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**ABSTRACT**

*Sushrutha*, the ancient surgeon has explained various types of *Vranas* including its management. *Vrana* is the one which does break in the skin. *Sadyovrana* is caused due to external trauma which is of 8 types. *Bhinna vrana*, one among the *Sadyovrana*, is a result of injury to the *Koshta* (internal organs) by sharp instruments. Wound is defined as 'Breach in the continuity of skin'. Stab wound is produced by a narrow or pointed object such as knife, dagger, chisel, sword, sickle. Management of the same is similar in both Ayurveda & Contemporary sciences. The present paper attempts to know the concepts & management of *Bhinna vrana* w.s.r to Stab injuries.

**KEYWORDS:** *Sadyo vrana*, *Bhinna vrana*, Injuries, Penetrating injuries.**INTRODUCTION**

The term *Vrana* has been dealt in detail in various *samhitas* by our *Acharyas*. *Sushrutha Samhita* which is a base of *Shalya tantra* has explained the different types of *vrana* along with its diagnosis and management. "*Vrana gatra vichurnane, vranayati iti vranaha*".<sup>[1]</sup> The term *Gatra* refers to the Body or Tissues,<sup>[2]</sup> & hence, *Vrana* can be considered as the one which has *Gatra Vichurnana* (Loss of Continuity or Tear in the Tissues/Body). Similarly, in Contemporary science, wound is defined- a type of physical injury where in the skin is torn, cut or punctured (an *open* wound), or where blunt force trauma causes a bruise (a *closed* wound). In pathology, it specifically means a sharp injury which damages the dermis of the skin.<sup>[3]</sup>

Based on its origin, *Vrana* is of two types.<sup>[4]</sup>

1. *Shaareerika*- due to the involvement of *doshas* and
2. *Agantuja/Sadyo vrana* - caused by *abhighata*.

**Vrana Akruithi/Shapes of Sadyovrana<sup>[7]</sup>**

<i>Ayatha</i> (Long)	<i>Vishala</i> (Broad)
<i>Chaturasra</i> (Quadrangular)	<i>Kutilla</i> (Curved)
<i>Tryasra</i> (Triangular)	<i>Sharava nimna madya</i> (Saucer with Depression in Centre)
<i>Mandali</i> (Circular)	<i>Yava madya</i> (Elevation in center like barley grain)
<i>Ardhachandra</i> (Semilunar)	

Injury, also known as physical trauma, is damage to the body caused by external force. This may be caused by accidents, falls, hits, weapons, and other causes. Major trauma is injury that has the potential to cause prolonged disability or death. A stab wound is a specific form of penetrating trauma to the skin that results from a knife or a similar pointed object. Stab wound is produced by a narrow or pointed object such as knife, dagger, chisel, sword, sickle. Depth is more than the length and width.

**Sadyo Vrana**

"*Sadyovrana ye sahasa sambhavanti abhighatataha*" which is due to external trauma.<sup>[5]</sup>

**Karana / Causes of Sadyovrana<sup>[6]</sup>**

Various kinds of External injuries caused due to *Purusha* (Humans), *Pakshi* (Birds), *Vyala* (Tiger), *Sarisrupa* (Crocodile), *Prapatana*(self-fall), *Kshara*(Alkali), *Agni*(Fire), *Shaktikuntaha*(Sharp instruments), *Shringa* (Horn), *Chakra* (Wheel), *Kapala* (Broken earthen pot).

Types of Sadyovrana<sup>[8,9,10]</sup>

SL. NO	SUSHRUTHA	VAGBHATA	VRIDDHA VAGBHATA
1	Chinna	Chinna	Grushta
2	Bhinna	Viddha	Avakrutha
3	Viddha	Picchita	Picchita
4	Kshata		Pravilambita
5	Picchita		Paathita
6	Grushta		Viddha
7			Bhinna
8			Vidalitha

Samanya Lakshana of Sadyovrana<sup>[11]</sup>

Acharya Sushruta explained that in *Chinna*, *Bhinna*, *Viddha* and *Kshata* type of *Sadyovrana* there will be excessive *raktasrava* due to which there is *Vata prakopa* followed by *ruja* (pain), whereas in *Picchita* and *Ghrushta* type of *Sadyovrana* there will be *alpa raktasrava* (less bleeding), *atyartha daha* (burning sensation) and *paaka* (suppuration).

## Vishesha Lakshana of Sadyovrana

- **Chinna Vrana**<sup>[12]</sup>: The wound which is Oblique or Straight, Broad leading to falling off of the part of the body.
- **Viddha Vrana**<sup>[13]</sup>: Any part of the body except the *Ashayas* injured by *Sookshma shalya*.
- **Kshata Vrana**<sup>[14]</sup>: Wound which has neither cut the body greatly nor the body is punctured, but having the *lakshanas* of both, the wound is irregular.
- **Picchita Vrana**<sup>[15]</sup>: Due to *Prahara* or *peedana*, the wound involving *Asthi*, *Majja* & *Raktha*, becomes swollen.
- **Grushta Vrana**<sup>[16]</sup>: Any part of the body losing its Skin due to Friction/Rubbing agints the hard or rough surface, associated with *Daha* & *Srava*.
- **Bhinna Vrana**<sup>[17]</sup>: *Ashayas* / *Koshta* punctured by the tip of *kuntha*, *shakti*, *rishiti*, *kadga*, *vishana* with *srava* is known as *Bhinna vrana*.
- **Koshta includes**<sup>[18]</sup>: *Amashaya*, *Agni*, *Pakvashaya*, *Mutrashaya*, *Rudhirashaya*, *Hrudhaya*, *Unduka*, *Phupusa*.

## Classification of Injuries

- Mechanical- Abrasion, contusion, laceration, incised wounds, stab wounds, chop wounds
- Thermal- Boiling water, steam, Hot objects
- Chemical- Exposure to acids and alkali
- Explosions- Pipe bombs, Gunpowder, Petroleum based

**Stab Wounds**<sup>[19]</sup>: A stab wound is a specific form of penetrating trauma to the skin that results from a knife or a similar pointed object. Stab wound is produced by a narrow or pointed object such as knife, dagger, chisel, sword, sickle, etc. Depth is more than the length and width.

**Types of Stab injuries**: Punctured, perforating and penetrating wounds

Samanya Lakshanas Of Bhinna Vrana<sup>[20]</sup>

*Koshta* gets filled with *rakta*, *Jwara*, *Daha*, *Rakta* from *mutramarga*, *Guda* and *grahani*, *Shwasa*, *trushna* and *adhmana*, Lack of desire for food, Retention of urine and stools, perspiration and redness of eyes, *Loha gandha* from *mukha*, Pain in the regions of heart and flanks.

Vishesha Lakshanas Of Bhinna Vrana<sup>[21,22,23,24,25,26]</sup>

**Amashaya bhinna**: Vomiting of Blood, Abdominal distension, Severe pain.

**Pakvashaya bhinna**: Pain, Sensation of Heaviness, Coldness of area below Umbilicus, Bleeding through orifices (Anus).

**Marma**: *Marmas* in *udara* and *uras* are – *Guda*, *Basti*, *Hridaya*.

**Guda**: The one which eliminates *Vata* & *Pureesha*, connected to *Sthoolantra* is *GUDA*. Injury to this causes – *SadyoPranaharana*.

**Basti**: Present inside pelvis, consists less *mamsa* & *Rakta*, *Mutrashaya* is known as *Basti*. Injury causes- *Sadyopranaaharana*. Except that of *Ashmari janya*; Injury on both sides – *Marana*; Injury on one side - *Mutra srava* from *vrana mukha*.

**Hridaya**: Situated between the 2 *Sthanas* in the chest, at the *dwara* of *Amashaya* is *Hridaya*. It is the seat of *Satva*, *Rajas* & *Tamas*. Injury to this leads to *Sadyo marana*.

**Kostagata**: *Mutra*, *purisha* and *ahara* are expelled from *Vrana mukha*.

## Stab Injuries to Visceras

**General features**: Internal Haemorrhage &/or Peritonitis, Increasing pallor, Restlessness, Small thread pulse, Deep & Sighing respiration, Subnormal Temperature, Collapse.

## Specific features

Liver- Haematemesis, increased area of liver dullness  
Spleen- Signs of rupture and patients succumbs rapidly  
Duodenum- Severe pain in epigastrium and in the back and vomiting.

Small intestine- Signs similar to perforated peptic ulcer, local tenderness.

Large intestine- Sever peritonitis, Necrosis and gangrene.

Kidney- Tenderness in renal angle, haematuria, abdominal distension.

Urinary bladder- tenderness in lower abdomen, failure to pass urine, agonising pain.

Heart- Blood accumulation in pericardium, Tamponade traid.

Lungs- Haemo-pneumothorax, dyspnoea, pain, cyanosis.

### Chikitsa / Management

#### Samanya Chikitsa

In all types of *Sadyovrana- Rakta srava nirodha karma* and *Vatahara kriyas* like, *Snehapana, Seka, Upanaha – Veshavara* or *Krushara* with *Sneha, Dhanya Sweda & Snigdha Dhanya Lepana, Sneha Basti* with *Vatahara taila* has to be done.<sup>[27]</sup> *Kashaya madura & sheeta snigdha kriyas* for 7 days.<sup>[28]</sup> Due to *Ushmata* of *Kshata*, the wound spreads quickly & hence, for *Pittaharana sheeta kriya & for Sandhanartha madhu grita prayoga* has to be done.<sup>[29]</sup> In case of *rakta srava*, any among 4 methods of *rakta shambhana* like *Sandhana, Skandana, Pachana & Dahana* has to be followed.<sup>[30]</sup>

#### Vishesha chikitsa

*Udara bhinna*<sup>[31]</sup> If *Medovarti* has come out of abdomen, smear it with *Kashaya dravya, Bhasma* or *mrut tied* with thread, then *Agni tapta shastra – chedana*, followed by *Madhu* application & bandage, later *Anna & Ghritha pana, Ksheera* with *madhuyashti, laksha* has to be given.

If the *Shalya* is in *Koshta*<sup>[32]</sup> *Bhedana karma* & remove it & later treat the complications.

*Rakta poorna koshta*<sup>[33]</sup> *Rakta* in *Amashaya* is treated by *Vamana karma & Pakwashayastha rakta* is countered by *Virechana karma & Asthapana basti* followed by *Anna – Yava, Kola, Kulatta* or *Mamsa rasa & Yavagu – with Saindhava*.

*Bhinna Koshta with adhika rakta srava*<sup>[34]</sup> *Rakta pana* is advised.

#### General Management of Traumatic Injuries

- Pre-hospital care by emergency services personnel
- Transport to hospital
- Primary survey (ATLS)
- Transfer to specialized trauma center (if required)
- Secondary survey
- Tertiary survey

#### Specific Management

**LIVER-** Based on the Degree of injury, any of the following like Suturing, Evacuation, Suturing Biliary

radicals, Perihepatic packing, Debridement, Lobectomy can be done.

**Spleen-** Repair of injured spleen & Splenectomy.

**Duodenum-** Emergency laparotomy & Duodenojejunostomy/ Duodenostomy.

**Small intestine-** Single perforation- Closed with atraumatic catgut; Multiple perforations - Excision of that segment of the bowel and end to end anastomosis; Lacerated mesentery- Resected and end to end anastomosis.

**Large intestine-** Primary closure or resection / Primary anastomosis.

**Kidney-** Management of Shock & Haemorrhage is followed.

**Urinary bladder-** Repair of the bladder followed by Suprapubic drainage and indwelling urethral catheter.

**Cardiac Tamponade-** Immediate Aspiration through costoxiphoid angle.

**Haemothorax-** Aspiration of blood from the pleural cavity (second intercostal space anteriorly), Endotracheal intubation and ventilator support, Intravenous fluid administration & Thoracotomy.

### DISCUSSION

*Acharya Sushruta* has mentioned about the 6 types of *sadyo Vrana*. *Acharya Vagbhata* has considered 8 types but, using prefixes & all these fall under the same above mentioned categories as that of *Acharya Sushruta*. Types of wound mentioned in Contemporary science & description are almost similar to those types of *vrana*s mentioned by our *acharyas*. While treating for hemorrhage, transfusion of blood is indicated in Contemporary science to prevent Hypovolemic shock. The same concept was in practice by our *acharyas* in the form of *Raktapaana* to save the life of the individual. This shows the importance of *Rakta* as *jeeva*. Our *Acharyas* were well versed in the emergency line of management. For example, when the intestines were protruded out of the abdomen, it was treated very meticulously by reduction of the intestine in an aseptic manner. When any internal organ like intestine was perforated, our *Acharyas* used *pipilika* as absorbable catgut. This shows that they had a very clear vision of consequences by the use of non-absorbable materials for suturing the internal organs. Regarding strangulation of intestines, our *Acharyas* had very clear expertise in the management of various casualty conditions. This can be observed as our *Acharyas* has explained the need for careful reduction after extending the wound without making the bowel strangulated. The critical care for traumatic patients comprising ABCD has been updated to CAB by 'Battlefield advanced trauma life support-

2006'. This shows advanced management skills & forethought possessed by our *Acharyas*.

## CONCLUSION

War and animal attacks were the major cause of injury in the past. Whereas nowadays, due to urgency and negligence vehicular accidents, violence and assaults are the causes of injury. Although present causes are different from that of the past, treatment principles remain the same. It is evident that *Aatyayika Chikitsa* was prevailing during the time of *Acharya Sushruta*. All these are clear proofs to the expertise, skill and ingenuity of ancient surgeons of India.

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