



A Critical Analysis of *Dushta-vyadha*: Defective Venesection Based on Sushruta Samhita

^{*1}Dr. Nikita Bankoti and ²Dr. Anmol Mahajan

^{*1}Assistant Professor, Department of Rachna Sharir, Gangasheel Ayurvedic Medical College and Hospital, Bareilly, Uttar Pradesh, India.

²PG Scholar, Department of Rachna Sharir, Institute of Teaching and Research in Ayurveda (INI), Jamnagar, Gujarat, India.

Abstract

Background: *Siravedha*, also known as venesection or bloodletting, has a long history dating back thousands of years. It's a therapeutic procedure that requires precision to avoid complications. *Dushta-vyadha*, or defective venesection, can lead to various adverse outcomes. Acharya Sushruta mentioned 20 types of *Dushta-vyadha*. This study aims to critically analyze the causes, symptoms and management of *Dushta-vyadha* to provide insights on its implications and prevention strategies.

Methods: A comprehensive review of Sushruta Samhita and other Ayurvedic texts and articles was conducted to gather information on *Dushta-vyadha* and its etiology, clinical features, and therapeutic approach.

Results: The study reveals that *Dushta-vyadha* can result from various factors including patient-related factors, improper technique or equipment issues, leading to complications like hemorrhage, hematoma and infection etc. The symptoms of *Dushta-vyadha* include excessive bleeding, pain, swelling, and other complications. Acharya Sushruta emphasizes the importance of proper training, meticulous techniques, and patient selection, pre- and post-procedure care to prevent *Dushta-vyadha*.

Discussion: This critical analysis highlights the significance of understanding *Dushta-vyadha* in the context of venesection and discuss its relevance in modern medical practice. By adhering to the principles and guidelines outlined in Sushruta Samhita, health care professionals can minimize the risks associated with venesection and ensure safe and effective treatment. The study provides valuable insights for Surgeons, practitioners, researchers, scholars and healthcare sector and underscoring the traditional knowledge with modern medical practices.

Keywords: *Dushta-vyadha*, *Siravedha*, Venesection.

Introduction

Venesection, also known as bloodletting, has a long history dating back thousands of years. It was used in various ancient medical traditions, including: Ayurveda, Unani and ancient Greek medicine. Venesection was a widely accepted medical practice for centuries and deeply rooted in the understanding of human physiology and pathology. It is believed to balance humors, eliminate toxins from the body and restore health.

In Ayurveda, venesection is referred to as "*Siravyadha* or *Raktamokshan*" and is considered under Panchakarma. Detailed description of venesection, and its techniques, selection criteria of patient, indications, contraindications and the potential complications has been mentioned in Sushruta Samhita.

This article provides a critical analysis of *Dushta-vyadha*, a defective venesection described in the Sushruta Samhita. The knowledge of the twenty types of *Dushta-vyadha* and their

symptoms should be used to make the act of *Sira Vedhan* flawless, and not to memorize the types of *Dushta-vyadha* and their symptoms. Therefore, how these should be used in flawless *Sira Vedha* is briefly discussed here. We examine the causes and consequences of *Dushta-vyadha* and discuss its relevance in modern medical practice. Our analysis highlights the importance of proper technique, patient selection, and anatomical knowledge in medical interventions. *Sira Vedha* in the *Shalyatantra* is called as *Ardhachikitsa*.

***Dushta Viddha Sira*:** If the venesection (puncture of the vein) is not done properly, then the *Sira* is known as *Dushta Viddha Sira*. The concept of defective venesection (*Dushta-viddha*) highlights the potential hazards and associated difficulties with this procedure.

Total Number of *Dushta Viddha Sira* ^[1]: Acharya Sushruta in *Sharira Sthana* eighth chapter described twenty *Dushta Viddha Sira*, these are mentioned in the table given below.

Table 1: Classification and Characteristics of Dushta-vyadha

Sr. No.	Defective Venesection (<i>Dushta Viddha</i>)	Cause	Characteristic Feature
1.	<i>Durviddha</i> (Badly Incised)	Due to use of a very fine or slender instrument, which can cause the vein to become constricted or compressed, leading to poor blood flow.	Indistinct blood flow. Extremely painful swelling.
2.	<i>Atividdha</i> (Over-Incised)	Using an instrument that is too large or making an incision that is too deep, which can cause the vein to become damaged or compressed. Wound that exceeds deeper than required measure	The wound exceeds deeper than the required measure.
3.	<i>Kuncita</i> (Crooked or Contracted)	By making an instrument that is not straight or bent.	The wound exceeds deeper than the required measure.
4.	<i>Piccita</i> (Crushed)	Due to the use of blunt or dull instrument.	Flattened or crushed appearance of the vein. Impaired blood flow
5.	<i>Kuttita</i> (Lacerated)	Due to repeated punctures or attempts to access a vein in the surrounding area when the target vein is not accessible, potentially causing damage to the veins and complicating treatment. By making multiple incisions over the vein, which can cause it to become damaged or lacerated.	Lacerated vein
6.	<i>Aprasrutta</i> (Non-Bleeding)	Due to patient's physical or mental condition, such as old age, emaciated, fright, fear, anxiety or shock etc.	Lack of bleeding due to patient's Physical or mental condition.
7.	<i>Atiyudirna</i>	Vein that is punctured by a sharp and large-mouthed instrument.	Rapid and excessive bleeding from the wound or affected area.
8.	<i>Ante-abhihata</i>	A vein (<i>sira</i>) that is punctured (<i>viddha</i>) on its walls (<i>ekakinasre</i>), tunica intima, tunica media, tunica adventitia.	Minimal (<i>alpa</i>) blood (<i>rakta</i>) flow (<i>sravane</i>).
9.	<i>Parishushka</i>	Low blood volume, vein snuffed with <i>Vayu</i> .	Decreased, minimal blood flow.
10.	<i>Kunita</i>	Partial puncture of a vein, extends only a quarter of the way through the vein's thickness.	The blood flow from the punctured vein is severely restricted, leading to a minimal and sluggish outflow of blood, marked by a significantly reduced blood flow.
11.	<i>Vepitam</i>	Vein isn't constricted properly by applying the tourniquet at an improper location.	Quivering or trembling of the vein and impaired blood flow.
12.	<i>Anutthita-viddha</i>	Inadequately vein raised or constricted before puncturing.	Absent or minimal blood flow.
13.	<i>Shastrahata</i>	Complete cut or severance of the vein, often due to: Sharp instrument, object, negligence or due to surgical error.	Excessive bleeding from the severed vein and Inoperativeness means Loss of function or inoperativeness of the affected organ or area.
14.	<i>Tiryg-viddha</i> (obliquely incised)	Condition where a vein is incised obliquely or at an angle, resulting in an incomplete opening or cut.	Obliquely incised vein.
15.	<i>Apaviddha</i> (wrongly incised)	Repeated attempts: Multiple attempts are made to cut the vein, leading to further damage. Improper use of instrument: Inadequate or incorrect technique while using the instrument.	The vein may be damaged or injured due to repeated attempts.
16.	<i>Avyadhya</i> (Contraindicated veins for venepuncture)	Veins unsuitable or contraindicated for surgical procedures or venepuncture.	These vein when punctured may cause deformity and death [2].
17.	<i>Vidruta</i> (Erratic)	Puncturing of unstable or mobile veins.	Difficult to perform venepuncture or the vein to slip away
18.	<i>Dhenuka</i> <i>Dhenuka</i> is a Sanskrit word for cow and it describes the situation where blood flows from the vein in a steady stream, like milk flowing from a cow's udder.	Vein is subjected to repeated pressure or palpitation at the site of venepuncture.	Repeated (<i>Muhuhmuhuh</i>) bleeding
19.	<i>Punah-punarviddha</i> (Repeatedly punctured)	Use of fine or delicate instrument.	Repeated punctures
20.	<i>Marma Viddha</i>	Puncturing at the vital points of tendon, bones, veins, joints called <i>Marmavidhha</i>	Severe pain, swelling, disability or physical impairment or death.

Discussion

Sira are inherently unpredictable and slippery, much like fish, making it challenging to master their anatomy. As a result, *Sira Vedha* requires great care and precision [3]. When an unskilled person, unaware of the intricacies of veins, performs a surgical procedure on them, it can lead to numerous complications and adverse effects [4].

Causative Factor of *Dustha Viddha Sira*

Defective venesection can be caused by several factors, including:

- i). **Shastra Dosha (Defect in a Venesection Needle):** During *Sira Vedhan*, the *Shastra* should neither be too subtle, nor too coarse, nor blunt, nor too sharp, nor should have any other defect. Due to being associated with these defects, six defects namely *Durviddha*, *Atividdha*, *Pishchit*, *Atyudirna*, *Apaviddha*, and *Punahpunar Viddha* arise.
Wrong needle size: Using a needle that's too big or too small for the vein can cause damage.
- ii). **Rogi Dosha:** The patient should not be suffering from cold, fear, swelling and anemia, otherwise two *Doshas* *Aprasrut* and *Parishushk* will produce.
Patient movement: Even slight movements during needle insertion can mess up the vein.
- iii). **Yantra Dosha:** Due to not binding the tourniquet properly at the right place, the vein does not rise properly, due to which there is difficulty in stabilizing it and piercing it, and three *Doshas* *Vepita*, *Anuthitviddha* and *Vidyuta* will produce.
- iv). **Sira Dosha:** For piercing, there should be a blood vessel vein, it should not be very thick and there should not be any deformity in it. By not paying attention to this, it will lead *Tokunchitta* and *Avedhya*.
Rolling veins are super tricky to puncture because they roll or shift under the skin.
Fragile veins: Veins can be super fragile due to age, meds, or medical conditions, making them more prone to damage.
- v). **Vaidya Dosha (Due to Doctor's Negligence):** A physician who does not possess the qualities necessary for surgery such as courage, speed, etc [5]. and who does not have the practice of *Sira vedhan*, by such a physician, *Anteabhihata*, *Kunita*, *Shinn*, *Tiryakaviddha*, *Dhenuka*, *Kuttita*, *Maanssirasnayuaasthisandhi Viddha* these seven defects would arise.

Botched Technique: If the person doing the venesection isn't experienced or properly trained, mistakes can happen.

Although five divisions of defects have been made, all these divisions are under the physician, because the task of combining the best instrument, the right patient, the right instrument and the proper vein is ultimately depends on the ability and experience of the physician. Therefore, the best way to avoid these defects is the excellence and practice of *Yantra Shastra* and other materials.

Conclusion

Defective venesection highlights the importance of proper techniques of venesection, selection of patient and the safety of patient in medical practice. By analyzing the cause and consequences of defective venesection reveals meaningful insights. Acharya Sushruta had great understanding of indications & contraindications as well as potential complications of the venesection, emphasizing the need for

precision and caution. By understanding about the defective venesection, medical practitioners can refine their skills, minimize risks, and prioritize patient well-being. This ancient wisdom remains relevant in modern medical practice, serving as a reminder to respect the intricacies of human anatomy and the importance of gentle, skilled care. Proper technique and patient safety are timeless principles.

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