



A Conceptual Study of Shatkriyakala and Its Applicability in Surgical Diseases

Dr. Akshay Kumar¹ , Dr. Devyani Dasar² and Dr. Pariksha Sharma³

¹MS Scholar, Department of Shalya Tantra, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod (H), Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India

²Associate Professor, Department of Shalya Tantra, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod (Hi), Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India

³MD Scholar, Department of Kayachikitsa, Chaudhary Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, New Delhi, India

Abstract: In Ayurveda, "shatkriyakala" *sanchaya, prakopa, prasara, sthanasanshraya, vyakti, and bheda* explains the causes of disease progression, or its etiopathogenesis. These six stages represent the six opportunities for a doctor to treat the condition before it becomes severe. It is a composite expression of the words *Kriya* and *Kala*. *Kriya* denotes the choice of therapy (medication, diet, and daily routine) used to treat the *Dosha* disruption, and *Kala* denotes the stage of a disease's progression. The idea of *Kriyakala* has been described by the ancient Indian surgeon Sushruta. Many authors have tried writing and compiling the references or information in classical texts. Still, there is no single article that not only compiles the textual references but also explains its appropriate applied aspect or correlates its stages in the progression of surgical disorders. The present study also tries to correlate to stages of disease progression in modern medicine with examples to show its importance today. The objective of this study is to review all the literature related to *Shatkriyakala* in classical texts of Ayurveda and compile it in a single place to gain comprehensive knowledge about its applied aspects and make readers mind-research oriented to think of management of disease in that stage to prevent complication. The study can be used for easy referencing for conducting further research. As this review includes a step-by-step explanation and correlation of the pathogenesis of surgical diseases, there will be an opportunity for practitioners to provide some evidence-based medicine to incept the disease in that stage to prevent disease progression and further complications.

Keywords: *Shatkriyakala*; Surgical Diseases; Cancer; Inflammation; Hemorrhoids

*Corresponding Author

Dr. Akshay Kumar, MS Scholar, Department of Shalya Tantra, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod (H), Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India



Received On 6 February, 2023

Revised On 2 May, 2023

Accepted On 24 May, 2023

Published On 1 November, 2023

Funding This research did not receive any specific grant from any funding agencies in the public, commercial or not for profit sectors.

Citation Dr. Akshay Kumar, Dr. Devyani Dasar and Dr. Pariksha Sharma, A Conceptual Study of Shatkriyakala and Its Applicability in Surgical Diseases.(2023).Int. J. Life Sci. Pharma Res.13(6), L37-L44 <http://dx.doi.org/10.22376/ijlpr.2023.13.6.L37-L44>

This article is under the CC BY- NC-ND Licence (<https://creativecommons.org/licenses/by-nc-nd/4.0>)

Copyright © International Journal of Life Science and Pharma Research, available at www.ijlpr.com

Int J Life Sci Pharma Res., Volume13., No 6 (November) 2023, pp L37-L44



I. INTRODUCTION

Ayurveda, a form of traditional Indian medicine, is known as the "knowledge of life" and addresses all facets of living, both health and illness. It is a comprehensive medical system that addresses all aspects of health, including physical, spiritual, psychological, ethical, and philosophical. It is one of the first medical systems and contains many medical theories and beliefs. The *pra yojana* of Ayurveda maintains the health of a healthy individual while curing the diseased.¹ According to Ayurveda, *Swasthaya* (Health) is a state of the body where *deha dhatu*, *dosha*, and *mala* are in equilibrium.² So ancient *Acharyas* have described in detail preventive measures as in *Dinacharya*, *Ritucharya*, and *Sadavritta* to fulfill the first *pra yojana* of Ayurveda. *Acharya Sushruta*, an ancient Indian surgeon, also mentions the unique and significant idea of *Shatkriyakala* in *Varnaprashnadhyaya* for preventing and managing illnesses. In Ayurveda, "*shatkriyakal*" *panchayat*, *prakopa*, *Prasanna*, *sthanasanshraya*, *vyakti*, and *bheda* explains the causes of disease progression or its aetiopathogenesis.³ The term "*Kriyakala*" refers to understanding a disease's progression stage, which aids in choosing the best course of action to repair the imbalance in *Doshas* (biological factors). It is a composite expression comprised of the words '*Kriya*' and '*Kala*,' where '*Kriya*' denotes the choice of therapy (medication, diet, and daily routine) used to treat the *Dosha* disruption, '*Kala*' denotes the stage of a disease's progression. *Ritu Kriyakala* and *Vyadhi Kriyakala* are the two major kinds of *Kriyakala*. In *Ashtanga Hridaya Sutrasthana*, *Vagbhata* explains the *Ritu Kriyakala*. These are *Chaya*, *Kopa*, and *Prashama*. These three *Dosha* stages result from the influence of the seasons. These *doshas* will return to normal if a person follows the regimen of the current *Ritu*.⁴ *Sushruta* explains the six stages of the *Vyadhi Kriyakala*, also known as the *Shatkriyakala*.³ *Shatkriyakala* (the six phases of a disease's progression) offers a framework for evaluating the disease and its pathophysiology at various stages and helps in the timely management of that disease. In Ayurveda, "diagnosis" refers not only to the name of sickness but also to the nature or phenomenon of the ailment. This phenomenon is described in terms of the *Samprapti* (pathogenesis) of the disease in each patient, which consists of *Dosha* (i.e., the humor), *Dushya* (the body tissues), and *Adhisthana* (the site of the disease) components. Despite the maxim above, several disorders are specifically mentioned in Ayurveda that are clinically comparable to those that are well-known in modern medicine. Detecting the disease is the first stage in modern science, and the second stage includes the consequences of a specific disease. On the other hand, Ayurveda recognizes six stages of any disease (*Shatkriyakala*), the last two of which are the disease's observable symptoms and its complications.³ It's interesting to note that Ayurveda can identify and address the root causes of a disease before any outward symptoms manifest. *Shatkriyakala* indicates the disease's progressing stages, and as a result, preventive actions have been established to avoid consequences. An illness can be treated more successfully with planned treatment if identified early.

2. MATERIALS AND METHODS

Sushruta Samhita, *Ashtanga Hridaya*, *Ayurvediya vikrti vijñana*, *roga vijñana*, classical commentaries, e-books, and research articles, are critically reviewed to collect the literature on *Shatkriyakala*. All compiled matter is reorganized and critically analyzed for the discussion, and an attempt is made to reach some insightful conclusions.

2.1 STAGES OF SHATKRIYAKALA

2.1.1 Sanchayavastha (Stage of Accumulation of Doshas)

The gathering or accumulation of *Doshas* is described in *Sanchaya*, the first stage of *Kriyakala*. *Doshas* gather throughout this stage but remain in their original location per *Ashraya-ashrayi bhava* (e.g., *Vata* in bones, *Pitta* in blood, and *Kapha* in other places like lymph muscles, etc.). The *Sanchaya* stage symptoms are not caused by an illness but rather by elevated *Doshas*. The patient rejects items that lead to accumulation or increase and prefers things with opposing attributes.⁵ If these deranged *Doshas* are trapped in this stage, and they cannot advance to the next, but if they are ignored and untreated, they will become stronger and causes more intense symptoms.⁶

2.1.2 Prakopavastha (Stage of Vitiation or Aggravation)

The accumulation stage has continued for a considerable time during the *Prakopa* (vitiation) stage, and the causative elements have been visibly present. This stage limits up to when the *Dosha* are prepared to leave their current location and move to another. This observation leads to the assumption that the *Prakopa* stage develops as a result of continued consumption of incorrect *Ahara* (food), *Aushadha* (medicine), and *Vihara* (regimen).⁷ The two forms of *Dosha* *vriddhi*, or an increase in biological humours, are *Chayapurvaka* and *Achayapurvaka* *Prakopa*. *Chayapurvaka* *Prakopa* means arriving at the *Prakopa* stage after passing through *Sanchaya*, while *Achayapurvaka* *Prakopa* is characterized by arriving at *Prakopa* without prior accumulation. One example of *Achaya Prukopa* is when someone overindulges in strenuous labor, which causes *Vata dosha* to intensify immediately.⁸

2.1.3 Prasravastha (Stage of Dissemination)

Prasara is a spreading stage in which the underlying causes still exist. The *Doshas*, which have remained to put thus far, become prepared to move during the *Prakopa* stage, now overflow and disseminate to different parts of the body or organs during the *Prasara* stage. *Doshas* have spread from the sole to the brain at this stage. *Kapha* and *Pitta* *Doshas*, *Sapta Dhatus*, and *Malas* are immobile entities that can be multiplied in number but cannot travel from one location to another. On the other hand, *Vata* *Dosha* aids in the movement of these entities. Thus, the *Vata* is a crucial factor for the *Prasara* stage. *Doshas* moves to different places with *Vayu*'s help, alone or in combination. These *Prasara* of *Doshas* are of 15 types.⁹⁻¹⁰

Table 1: Symptoms caused by *Doshas* in *Kriyakala* ^{5,8,10}

S.No	Avastha	Dosha	Lakshana
I	Sanchyavastha	Vata	Stabdhapoornakoshtata (abdominal stiffness and fullness)
		Pitta	Pitavabhasata and Mando ushamta (yellowing of the body parts and low digestive power)
		Kapha	Anganam gauravta and Alasyam (Heaviness in the body with lassitude).

2	Prakopavastha	Vata	Koshta toda sancharana (Vata's movement in Mahasrotasa and Abdominal pain)
		Pitta	Pipasa (excessive thirst), Amlika (Sour eructations), and Paridaha (burning sensation all over the body),
		Kapha	Annadwesa (Disliking food), Hridyotkledascha (Excessive salivation in mouth).
3	Prasaravastha	Vata	Atopa (flatulence), Vimarga-Gamana (Regurgitation),
		Pitta	Chosha (sensation of squeezing), Osha (sense of boiling sensation), Dhoomayanani (smoke coming out from mouth), Paridaha (burning sensation),
		Kapha	Avipaka (dyspepsia), Arochaka (anorexia), Chardi (vomiting), and Angasada (lassitude).

2.1.4 Sthanasamsraya (Stage of localization)

When vitiated *Doshas* circulate and settle at a specific location (depletion of tissue) called regions of *Srotavaigunya*, this process is known as *Sthanasamsraya* (localization), or the settling of *Doshas*. Only a few places, known as

Khavaigunya (weak or defective sites), are prone to settling *Doshas*.¹¹ It implies that the localization of *Dosha* at a specific spot on the body causes a specific disease (Table 2). The *Doshdushya Sammurchana* stage follows this *Srotavaigunya*; at this point, all prodromal symptoms of the disease manifest.¹²

Table 2: Sthanasamsraya and Diseases ¹²		
S.No	Sthanasamsraya	Diseases
1.	Udara	Gulma, Udara Roga, Vidradhi, Agnisangh, Anaha, Atisara, Visuchika
2.	Vrishanagata	Vridhi.
3.	Bastigata	Prameha, Mutraghata, Ashmari, Mutra Dosha, etc.
4.	Medragata	Niruddhaprakash, Suka Dosha, Upadamsha, etc
5.	Urdhvajatrugata	Urdhvajatrugata Roga.
6.	Gudagata	Arsha, Bhagandara, etc.
7.	Twaka, mamsa and shonitagata	Kshudraroga, Visarpa, Kushta, etc.
8.	Asthigata	Asthi Vidradhi.
9.	Medagata	Apachi, Granthi, Arbuda, Alaji, Galaganda, etc.
10.	Padagata	Slipada, Vatasonita, Vatakantaka etc.

2.1.5 Vyaktavastha (Stage of Manifestation)

If the *Sthanasamsraya*'s causative components are left untreated, the *Dosha* progresses to the fifth stage of *Kriyakala*, i.e., the *Vyakti* (manifestation) stage, where all the symptoms manifest. Thus, the stage of *Vyakti* is when a disease fully appears, or it shows its cardinal signs and symptoms. For example- *Jwara*, *Atisara*. A particular sickness is determined by the level of vitiation of a specific *Dosha* and the interaction of a specific *Dhatu* (body tissue). *Vyadhi Pratyanka Chikitsa* (treatment mentioned in respective diseases for their management) may be adopted.¹³

2.1.6 Bhedhavastha (Stage of Complication)

The final stage of the disease's progression, known as *Bhedhavastha*, is where it ends if treatment is not received. It is seen as a complicated stage as well. One disease's complications may start other diseases and ultimately result in death. When disorders reach this stage, they may serve as *Nidanarthakara roga*, i.e., predisposing causes for other diseases. At this point, illnesses became chronic (*chirakari*) or *Madhya* (incurable). The prognosis in *Bhedhavastha* becomes extremely poor.¹⁴

2.1.7 Shatkriyakala and Vranashopha (Inflammatory swellings)

In Ayurveda, the term '*shotha*' indicates swellings or inflammation. *Sushruta* describes *Shobha* as a localized swelling that affects the skin and underlying flesh in any portion of the body. It might be smooth or uneven, huge and knotted, or nodular.¹⁵ In the instance of *vrnashopha*, the disease may present in three stages, each with its unique set

of symptoms: the *amawastha* (stage of early inflammation), the *pachyamanawastha* (stage of real inflammation), and the *pakwawastha* (stage of suppuration). The *Hiawastha* is characterized by a mild localized swelling associated with mild pain and induration and a slight rise in local temperature. In contrast, the *pachyamanawastha* manifests with localized pain of varying degrees and nature, burning sensation, skin discoloration, and systemic features like pyrexia, anorexia, and thirst. The signs of a well-formed abscess emerge during *pakwawastha*, including skin wrinkles, pus fluctuation, pitting under pressure, itching, etc.¹⁶ *Vranashopha* is the stage before *Vrana* (wound or ulcer). *Sushruta* gave treatment of this prodromal period a lot of emphasis while adhering to the *shatkriyakala* principles. A *vrnashopha* will develop into an abscess if it is not treated early. If a *vrnashopha* is not treated, not even in the *pakwawastha*, it may either burst externally with pus leakage and develop into an ulcerated lesion, or it may spread to deeper tissues and develop sinuses or fistulae, all of which make treatment more challenging.¹⁷ To prevent suppuration and further tissue damage, *vrnashopha* should be treated as soon as possible. By adhering to the concepts of *shatkriyakala*, or the six occasions of treating sickness, *Sushruta* described seven basic methods to cure and control various stages of *vrnashopha* or *Vrana*.¹⁸ In addition, the first eleven steps of the sixty therapeutic principles or measures for wound care, known as *Shashti upakrama*, have also been defined for treating *vrnashopha*, which is frequently the stage before the development of a wound or ulcer.¹⁹

2.1.8 Shatkriyakala and Arbuda (Cancer)

Cancer is uncontrolled cell proliferation that can invade or spread to different body parts. Developing cancer at the

cellular level is thought to be multi-step, involving cell mutation and selection for cells with progressively higher proliferative, survival, invasive, and metastatic capacities.²⁰ The initial stage of the process, tumor initiation, is thought to occur from a genetic mutation that causes an aberrant multiplication of a single cell. A tumor develops when a population of clones grows through cell proliferation and advances due to additional cell mutations.²¹ The growth of an *Arbuda* (tumor), which could later develop into a malignant tumor, could occur if such a sequence is sustained (*Abhyarbuda*, *Dwirarbuda*, and *Karkatarbuda*). While *Karkatarbuda* refers to a hardened tumor, *Abhyarbuda* and *Dwirarbuda* are circumstances in which a tumor develops

over another and recurs repeatedly.²² According to Ayurveda, *Arbuda* is a tumor that causes localized swelling but is not always cancerous. Figure 1 compares Ayurvedic and contemporary theories on how cancer or other neoplasms grow, while Table 3 shows the correlation between the Stages of *Shatkriyakala* and Cancer's pathogenesis. The current medical system uses biopsy, cytology, histopathology, blood, endoscopy, urine, X-ray, and other scanning procedures for cancer diagnosis. However, from an Ayurvedic perspective, numerous molecular biomarkers can be found throughout the *Prasara* stage of diffusion through the blood and lymph. *Ama* (autotoxin) may be a potential biomarker for identifying early inflammation.²³

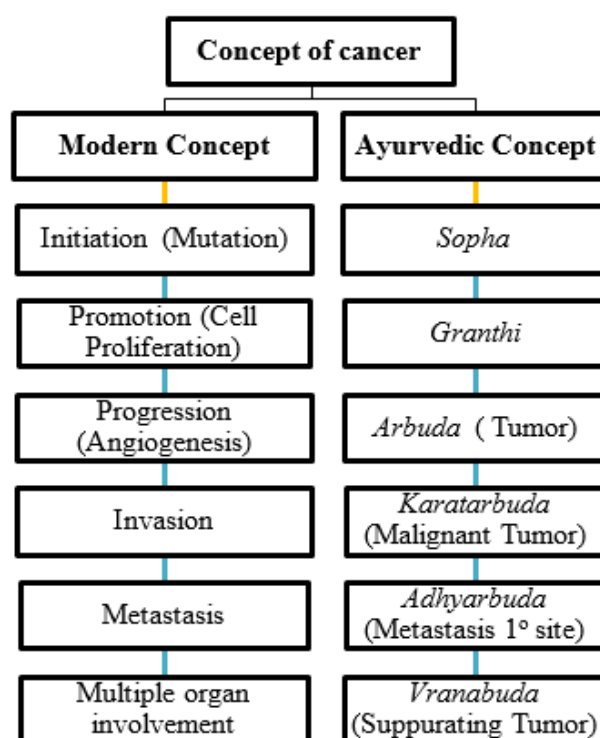


Fig 1: Showing comparison of Ayurvedic and contemporary theories on pathogenesis.²³

Table 3: Stages of *Shatkriyakala* and modern correlation in Cancer.²³

<i>Sanchaya</i>	An increase in oxidative stress harms the structure and operations of cells. In addition, these events may cause somatic mutations and malignant cell transformations.
<i>Prakopa</i>	In this stage, abnormal cell proliferation occurs due to increased oxidative stress, which may have amplified DNA mutations or caused DNA damage and genome instability.
<i>Prasara</i>	Because oxidative stress can speed up tumor growth and metastasis, the movement of the cells can determine the <i>Prasara</i> stage by significantly altering the shape and sticky qualities of the cells.
<i>Sthana Samshraya</i>	In contrast, <i>Sthanasamshraya</i> (augmentation) in cancer may be called cancer cells' homing. This homing process involves several stages, including the growth of the malignancy.
<i>Vyakti</i>	In this stage, tumors start to show symptoms as they progress due to changes in the organ's regular operation.
<i>Bhedha</i>	This stage confirms the type of cancer and its invasion and establishment in a distant organ.

2.1.9 *Shatkriyakala* and *Arsha* (Hemorrhoids)

The clinical condition known as *Arsha* (Haemorrhoids) is characterized by an inflamed or prolapsed pile mass, bleeding per rectum, and some discharge from the anus. It includes an abnormally misplaced, enlarged anal cushion. In Ayurveda, there are four different ways to treat *Arsha*, depending on how chronic and pronounced the ailment is: *Bheshaj*, *Kshar Karma*, *Agnikarma*, and *Shastra Karma*. *Kshar karma* is used in soft, large, deeply embedded projectile *Arsha*. *Agnikarma* is indicated mostly in hard, broad, fixed, and rough masses. In pedunculated, large, and discharge-producing *Arshas*, *shastra*

karma is advised. *Bheshaj Chikitsa* is the most important method of Fourfold management of *Arsha*. It acts at all levels of *Shatkriyakala*, whether to prevent causative factors for *Samprapti Vighattana* or to manage *Poorvarupa* and *Roopa* of *Arsha*, ultimately preventing the stage of complication if administered timely.²⁴ Step-wise pathogenesis of *Arsha* is described in Table 4. Causes such as straining, diarrhea, constipation, hard stool, low fiber diet, over purgation, which is responsible for *Sanchaya*, *Prakopa*, and *Prasara*, are controlled by avoiding straining, consuming a diet having more fiber/liquid, use of laxatives by following the principle of *Nidana Parivarjana*, suitable *Shaman* and *Shodana*. Symptoms

of the prodromal stage (*Sthanasansraya*), like bleeding from the anal canal, fatigue, anemia, and weakness, are managed by diet and drugs. In *Vyakhtavastha*, management is according to symptoms by diet, drugs like analgesics, local applications, sitz bath, Sclerotherapy, Barron Banding, Anal stretching, and Open & Closed haemorrhoidectomy. Strangulated or

Thrombosed piles are characteristics of *Bhedhavastha* which are managed first by *Updrava Chikitsa*, i.e., warm water sitz bath, antibiotics, analgesics, bed rest, saline compression dressing followed by definitive treatment, *Vyadhipratyanik chikitsa*, i.e., Haemorrhoidectomy after 4-5 days.

Table 4: Stages of Shatkriyakala in Arsha.^{25, 26}

Stage	Features of Stage	Therapeutic Measures
<i>Sanchya</i>	<i>Dosha Chaya</i> by <i>Nidana</i> like <i>Viruddhadhyasan</i> , <i>Striprasanga</i> , <i>Utkatasan</i> , <i>Prasthayana</i> , <i>Vega dharana</i> , etc.	<i>Nidana Parivarjana</i> and Suitable <i>Shamana</i>
<i>Prakopa</i>	<i>Dosha Prakopa</i> - individually or in combination	<i>Shodana</i> / Purification measures
<i>Prasara</i>	By main vessels (<i>Prasarta Pradhan Dhamni</i>)	<i>Hetu</i> , <i>Linga chikitsa</i> followed by <i>Vyadhi's chikitsa</i>
<i>Sthana Samshraya</i>	Affect <i>Gudavali</i> (<i>Gudamagatya pradushya gudavali</i>). <i>Poorvarupa</i> – Emaciation, Anorexia, Anemia, Pain at anal region etc.	Treatment must be employed to correct <i>Dosha</i> , <i>Dushya</i> or both
<i>Vyakti</i>	Different types of <i>Arsha</i> with different clinical features (<i>Mamsaprahojanyati</i>)	<i>Lakshanik</i> as per <i>chikitsa siddhantas</i> or <i>Vyadhipratyanik chikitsa</i> .
<i>Bheda</i>	Complications. E.g., In <i>Vataja Arsha</i> Complications like <i>Gulma</i> , <i>Asthila</i> , <i>Plihodara</i>	<i>Vyadhipratyanik chikitsa</i> <i>Updrava Chikitsa</i>

2.1.10 Shatkriyakala and Bhagandara (Fistula in Ano)

The literal meaning of *Bhagandara* is “*Darana*” in *Bhaga*, *Guda*, and *Basti Pradesha*, i.e., splitting up or piercing of perianal region. Its pre-suppurative stage is *Pidika*, and the suppurative stage is *Bhagandara*.²⁷ In contemporary science, *Bhagandara* can be correlated to fistula in ano, an inflammatory response to anal gland infection resulting in the formation of an unhealthy track composed of unhealthy granulation tissue and fibrous tissue, having an external opening in the perianal skin and an internal opening in the anal canal or rectum.²⁸ It is characterized by persistent pus discharge associated with intermittent pain, which can lead to several complications if not treated properly. In the *Pidakaa Avasthaa* of the disease *Bhagandara*, *Sushruta* has incorporated eleven therapeutic methods in his *Shashtiupakrama* (sixty measures) viz,

Apatarpana, *Aalepa*, *Abhyanga*, *Parisheka*, *Svedana*, *Upanaaha*, *Vimlaapana*, *Paachana*, *Snehana*, *Visraavana* and *Shodhana*.²⁹ This therapy aims to restore vitiated *Doshas* to their normal states to keep the balance of the *Doshas*, *Dhatu*s, and *Malas*. The *Pidakaa* generated due to the imbalance of these components likewise goes away when the vitiated *Dosha*'s are restored to normal, and further pathogenesis will be stopped at this point. In the stage of *Pidaka*, *Vagbhatt* added measures such as *Shodhana*, *Raktamokshana*, *Parisheka*, etc., for the same aim.³⁰ The management of *Apakva Pidakaa* must adhere to the same seven management principles as told for *Aamashopha*. At the same time, the best treatment for *Pakvapidakaa* is surgical management indicated in the complicated stages and after the failure of medical management. The stepwise pathogenesis of *Vataja Bhagandara* is described in Table 5.

Table 5: Stages of Shatkriyakala in Bhagandara.³¹

Stage	Features of Stage	Therapeutic Measures
<i>Sanchya</i>	<i>Dosha Chaya</i> by <i>Nidana</i> like <i>Viruddhadhyasan</i> , <i>Prasthayana</i> , <i>Apathya Sevana</i> <i>Vega dharana</i> , etc.	<i>Nidana Parivarjana</i> and Suitable <i>Shamana</i>
<i>Prakopa</i>	<i>Dosha Prakopa</i> (<i>Vayu Prakupita</i>)	<i>Shodana</i> / Purification measures
<i>Prasara</i>	Spread to the body (<i>Sannivratra</i>)	<i>Hetu</i> , <i>Linga chikitsa</i> followed by <i>Vyadhi's chikitsa</i>
<i>Sthana Samshraya</i>	In <i>Guda</i> (<i>Sthiribhuto Gudam</i>) <i>Poorvarupa</i> –Pain around the hip bone, Itching, burning sensation, Swelling around the anus.	Treatment must be employed to correct <i>Dosha</i> , <i>Dushya</i> or both
<i>Vyakti</i>	Boil formation (<i>Aruna varna pidika janyati</i>). If not treated, suppuration occurs. Formation of Multiple secondary openings	<i>Lakshanik</i> as per <i>chikitsa siddhantas</i> or <i>Vyadhipratyanik chikitsa</i> .
<i>Bheda</i>	If not treated, then Complications like Passage of Air (<i>Vata</i>), urine, fecal matter, and semen from these multiple openings	<i>Vyadhipratyanik chikitsa</i> <i>Updrava Chikitsa</i>

2.1.11 Shatkriyakala and Diseases like Shalipada (Elephantiasis) and Vriddhi roga (Hernia)

We can correlate the pathogenesis of every disease to the six stages of manifestation of *Shatkriyakala*, a unique concept given by *Acharya Sushruta*. For instance, *Shalipada* (Elephantiasis) and *Vriddhi roga* (Hernia) are elaborated. In *Shalipada*, *Doshas*, which are aggravated due to unwholesome diet and regimens, travel downwards and

reside in *Vankshana*(Inguinal region), *Uru*(thighs), *Janu*(Knees), and *Jangha* (shin). After some time, they reside in the foot and cause swelling in these regions. If not treated early, the swelling spreads to adjacent tissues with watery discharges and becomes nodular, like mounds or houses of termites. This stage is called the complication stage, and the disease becomes incurable.³² In *Antravridhi*, causative factors of *dosha chaya* and *prakopa* are lifting heavy weights, fighting with a powerful person, falling from a tree, and other factors

demanding strenuous exercise. So *Vata*, the main *dosha*, becomes aggravated, and it travels downwards via vessels (*falakosha vahinir abhiprapadya dhamni*), causing prodromal symptoms like pain in the bladder, lumbar region, testes, and penis. On further vitiation, *Vata* causes contraction of a part of the intestine and forces it to develop as swelling in the inguinal region, which can be correlated to Bubonocoele in modern science.³³ In this stage, treatment of *Vataja Vriddhi*, i.e., *Shodhana* (*Snehana*, *Swedana*, *Virechana*, *Niruha*, and *Asthanpana*) and *Shastra Chikitsa* followed by *Shaman* is indicated.³⁴ If not treated early, this swelling further descends (funicular stage). It reaches up to the scrotum (*Kalan train falakosha pravishaya muskashopha*), and complete inguinoscrotal swelling is seen, which can be compared with a complete inguinal hernia.³³ In *Vankhsnaastha Vriddhi*, i.e., swelling in the inguinal canal stage (funicular), *Agnikarma* by *Ardhenduvakra Shalaka* and *Siravedha* is indicated. Complete inguinal hernia (*Falakosha prompt*) is a complicated stage and is difficult to treat. Hence pathogenesis of these diseases can be correlated to stages of *Shatkriyakala*, an advanced form of disease progression mentioned thousands of years ago.³⁵

2.1.12 Importance of Shatkriyakala

If *Doshas* are destroyed during accumulation, they cannot advance to later stages. As they move along, they get stronger. Therefore, therapy is simpler in the early stages than in the latter. *Kriyakalas* help determine the disease prognosis and the best course of treatment. If *Doshas* are treatable, then there are three recommended methods of elimination depending on the *Doshas'* condition: evacuation is advised if there is an abundance of *Dosha*, lightening and digestion are recommended if there is a moderate presence, and pacification is helpful if there is a limited presence. According to *Acharya Sushruta*, the real doctor understands the accumulation, aggravation, spread, localization, manifestation, and specification of *Doshas* and their consequences.

2.1.13 Significance of Shatkriyakala

1. One can learn about *Hetus* (etiological factors) of *Dosha* accumulation and vitiation (*Chaya* and *Prakopa*). Therefore, early management is done by *Nidana Parivarjana* (eversion of causative factors).
2. *Pathya* – *Apathya* (wholesome and unwholesome) can also be decided early as patients have likings for things that pacify *Doshas* and dislikes for things that aggravate them.
3. *Shatkriyakala* is a way of understanding the progression and pathogenesis of disease stage by stage, which is useful in selecting therapeutic procedures according to the stage.
4. As prodromal symptoms (*Poorvarupa*) appear in the *Sthanasansraya* stage so they facilitate early diagnosis. As we know about the disease's early stage, we can prevent complications through early intervention.
5. The prognosis of the disease based on the progression can also be decided with the help of *Shatkriyakala*.

3. DISCUSSION

Each person has a unique pattern of pathogen exposure and dynamic changes in the functioning of *Dhatus*. Therefore, the severity of illness and clinical presentation of illnesses are assumed to vary.³⁶ Different symptoms manifest from the

interplay between the various degrees or stages of *Dosha* vitiation and the body tissues or *Dushyas*.³⁷ In Ayurveda, this six-stage pathogenesis of the disease development process is known as *Shatkriyakala*.³⁸ To stop this sequential process from moving on to the next stage, each stage's symptoms must be addressed and treated.³⁹ Until the *Doshas* have not been localized to a specific spot, the symptoms present in the first three phases are general symptoms brought on by the *Doshas* alone and are not unique to any one disease.⁴⁰ The disease frequently manifests as a result of such symptoms, which patients and medical professionals disregard.⁴¹ The fourth stage, when the *Doshas* localize to a specific body area, is the prodromal stage of any disease since the symptoms that emerge are not just those of the involved *Dosha* but also those of the involved *Dushya*.⁴² Sometimes, these symptoms are also ignored by both the patient and the medical professionals. Only a disease in its *Vyakta* or *Bheda Awastha* is treated by doctors.⁴³ According to Ayurveda, *Srotavarodha* (obstruction of bodily channels) is the disease's primary pathogenesis stage.⁴⁴ Additionally, it is vitally necessary to combine proteomic and genomic technologies to find biomarkers associated with various *Shatkriyakala* phases to use modern technology to detect cancer in its early stages.⁴⁵⁻

⁴⁷ All cancer patients may benefit from a suitable *Samsodhana* (bio-purification treatment) utilizing a suitable *Panchakarma* therapy (a fivefold detoxification treatment combining massage, herbal therapy, and other procedures).^{48,49} The *Rasayana* treatments or any other medications and nutrients, by Ayurveda, reach the target places more efficiently if *Panchakarma* first cleanses the bodily channels.⁵⁰ An important part of cancer treatment involves the application of *Rasayanaprayoga* (immunotherapy), an Ayurvedic technique for revitalizing the body's support system.⁵¹ The entire point of the ancient Ayurvedic teachers' explanation of *shat-kriya kala* is to underline how crucial it is to comprehend the significance of even these early phases and vague symptoms in managing an illness. Not only must one begin treatment before the *Vyakta* or *Bheda Awastha*, but one must also pay attention to the patient's minor and generalized complaints.⁵²

4. CONCLUSION

The primary goals of Ayurvedic treatment plans are to reestablish the body's natural defenses and capacity for self-healing. Ayurvedic remedies strengthen and rejuvenate important body systems to support long-term recovery from an illness. A straightforward course of treatment, however, can stop the illness from moving to the subsequent stage in the manifestation of disease if the *Doshas* are in the initial stage. It goes without saying that if an illness is identified holistically, it will also be treated holistically. New ideas and methods are desperately needed in translational and personalized medicine. These solutions might be created by combining the latest technologies with the knowledge of conventional medical systems. Furthermore, even though the only phases recognized by modern medical science for the diagnosis or treatment of diseases are manifestation and complication, the multi-stage approach used by Ayurveda under the concept of *Shatkriyakala* offers a wealth of information about the pathogenesis, diagnosis, and treatment of a disease in its early stages. Although this amazing idea can be used, it has yet to receive scientific validation. Therefore, validating the *Shatkriyakala* model with the aid of contemporary sciences could be a breakthrough in the medical area.

5. AUTHORS CONTRIBUTION STATEMENT

Dr. Akshay Kumar conceived of the presented idea. Then, Dr. Akshay Kumar wrote the manuscript with support from Dr. Pariksha Sharma. Next, Dr. Devyani Dasar supervised the

study. Finally, Dr. Akshay Kumar drafted the final version of the manuscript.

6. CONFLICT OF INTEREST

Conflict of interest is declared none.

7. REFERENCES

- Shukla V, Tripathi R, editors: Chapter 30. Verse 26. Delhi: Chaukhambha Sanskrit Pratisthana. In: Commentary Vaidyamanorama on Charaka Samhita of Charaka, Sootra Sthana; Arthedashemahamuliya Adhyaya. reprint ed; 2012. p. 447.
- Shastri A, editor: Chapter 15. Verse 48. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Doshadhatumalakshayavridhivigyanaya Adhyaya. reprint ed; 2015. p. 84.
- Shastri A, editor: Chapter 21. Verse 36. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 121.
- Tripathi B, editor: Chapter 12. Verse 24. New Delhi: Chaukhambha Sanskrit Pratisthana. In: Commentary Nirmala on ashtanga Hridayam of Vagbhata, Sootra Sthana; Doshabhediya Adhyaya. reprint ed; 2019. p. 175.
- Gupta KA. Astanga Hridayam, Hindi Commentary. Varanasi: Choukhamba Prakashan. 2007: 91. Hindi.
- Shastri A, editor: Chapter 21. Verse 37. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 121.
- Shastri A, editor: Chapter 21. Verse 19-25. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 118-19.
- Shastri A, editor: Chapter 21. Verse 27. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 119.
- Shastri A, editor: Chapter 21. Verse 28. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 119.
- Shastri A, editor: Chapter 21. Verse 32. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 120.
- Shastri A, editor: Chapter 24. Verse 19. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vyadhisamudeshiya Adhyaya. reprint ed; 2015. p. 133.
- Shastri A, editor: Chapter 21. Verse 33. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 120.
- Shastri A, editor: Chapter 21. Verse 34. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 121.
- Shastri A, editor: Chapter 21. Verse 35. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 121.
- Shastri A, editor: Chapter 17. Verse 3. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Aampakwaishniya Adhyaya. reprint ed; 2015. p. 91.
- Shastri A, editor: Chapter 17. Verse 6-9. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Aampakwaishniya Adhyaya. reprint ed; 2015. p. 92-3.
- Shastri A, editor: Chapter 17. Verse 14. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Aampakwaishniya Adhyaya. reprint ed; 2015. p. 94-5.
- Shastri A, editor: Chapter 17. Verse 22-23. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Aampakwaishniya Adhyaya. reprint ed; 2015. p. 96.
- Shastri A, editor: Chapter 1. Verse 11. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Chikitsa Sthana; Dwivranichikitsa Adhyaya. reprint ed; 2015. p. 6.
- Cooper GM. Sunderland, (MA): Sinauer Associates; 2000. The Development and Causes of Cancer. The cell: A molecular approach. 2nd ed. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK9963/>.
- Valastyan S, Weinberg RA. Tumor metastasis: molecular insights and evolving paradigms. Cell. 2011;147(2):275-92. doi 10.1016/j.cell.2011.09.024, PMID 22000009.
- Singh RH. An assessment of the Ayurvedic concept of cancer and a new paradigm of anticancer treatment in Ayurveda. J Altern Complement Med. 2002;8(5):609-14. doi: 10.1089/107555302320825129, PMID 12470442.
- Chauhan A, Semwal DK, Mishra SP, Semwal RB. Ayurvedic concept of *Shatkriyakala*: traditional knowledge of cancer pathogenesis and therapy. J Integr Med. 2017;15(2):88-94. doi: 10.1016/S2095-4964(17)60311-X, PMID 28285613.
- Shastri A, editor: Chapter 6. Verse 3. Varanasi: Chaukhambha Sanskrit Sansthana. In: Commentary

- Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Chikitsa Sthana; Arshachikitsa Adhyaya. reprint ed; 2015. p. 46.
25. Shastri A, editor: Chapter 2. Verse 4. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, nidana Sthana; Arshaansanidana Adhyaya. reprint ed; 2015. p. 306.
 26. Shastri A, editor: Chapter 2. Verse 9-10. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, nidana Sthana; Arshaansanidana Adhyaya. reprint ed; 2015. p. 307.
 27. Shastri A, editor: Chapter 4. Verse 4. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, nidana Sthana; Bhagandarananidana Adhyaya. reprint ed; 2015. p. 317.
 28. Williams NS, Bulstrode CJK, O'Connell PR, Editors. 27th ed. Bailey & Love's short practice of Surgery, Part II. Abdominal; anus and anal canal; fistula-in-ano. FL: CRC Press - Taylor & Francis Group, 2018; p. 1363.
 29. Shastri A, editor: Chapter 8. Verse 4. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Chikitsa Sthana; Bhagandarachikitsa Adhyaya. reprint ed; 2015. p. 57.
 30. Tripathi B, editor: Chapter 28. Verse 23. New Delhi: Chaukhambha Sanskrit Pratisthan. In: Commentary Nirmala on ashtanga Hrdayam of Vagbhata, Uttar Tantra; Bhagandarpratisheda Adhyaya. reprint ed; 2019. p. 1095.
 31. Shastri A, editor: Chapter 4. Verse 5-6. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, nidana Sthana; Bhagandarananidana Adhyaya. reprint ed; 2015. p. 317.
 32. Shastri A, editor: Chapter 12. Verse 13-15. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, nidana Sthana; Vriddhiupdamshashalipadanidan Adhyaya. reprint ed; 2015. p. 363-64.
 33. Shastri A, editor: Chapter 12. Verses 4. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, nidana Sthana; Vriddhiupdamshashalipadanidan Adhyaya. reprint ed. Vol. 5, 9. Varanasi: Chaukhambha Sanskrit Sansthan; 2015. p. 356-58.
 34. Shastri A, editor: Chapter 19. Verse 4-8. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Chikitsa Sthana; Vriddhiupdamshashalipadachikitsa Adhyaya. reprint ed; 2015. p. 110.
 35. Shastri A, editor: Chapter 19. Verse 21-24. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Chikitsa Sthana; Vriddhiupdamshashalipadachikitsa Adhyaya. reprint ed; 2015. p. 112.
 36. Hankare S, Mulla M. A study of *Shatakriyakala* and its importance in manifestation of diseases. *Ayurlog Nat J Res Ayurved Sci*. 2014; 3: 1-7. 15 Joshi LG, Ade JS, Deore SS,
 37. Dwarakanatha C. Introduction to Kayachikitsa. Varanasi: Chaukhambha Orientalia; 1996. p. 83-109.
 38. Shastri A, editor: Chapter 21. Verse 18. Varanasi: Chaukhambha Sanskrit Sansthan. In: Commentary Ayurveda-tattva-sandipika on Sushruta Samhita of Sushruta, Sootra Sthana; Vranaprasana Adhyaya. reprint ed; 2015. p. 117.
 39. Samal J. Public health importance of *Shatkriyakala* in relation to natural history of disease. *Int J Res Ayurveda Pharm*. 2013; 4(30): 468-471.
 40. Joshi LG, Ade JS, Deore SS, Shendage RG, Gavane NA. A literary review of *Shatkriyakala*. *UJAHM*. 2015;3(3):60-2.
 41. Hankare S, Mulla M. A study of *Shatakriyakala* and its importance in the manifestation of diseases. *Ayurlog Nat J Res Ayurved sci*. 2014;3:1-7.
 42. Bhosgikar A. A review on *Shatkriyakala*. *Int Ayurved J*. 2014;2:318-24.
 43. Kumar A, Sharma A. Significance of *Shatkriyakal* in managing Vranashopha. *Int J Adv Innov Res*. 2019;6(2):92-5.
 44. Kumar B, Paliwal M. Concept of *Shatkriyakala* as mentioned in *Sushruta Samhita*. *J Adv Res Ayur Yoga Unani Sidd Homeo*. 2014; 1: 10-12.
 45. Hanash S, Taguchi A. Application of proteomics to cancer early detection. *Cancer J*. 2011;17(6):423-8. doi 10.1097/PPO.0b013e3182383cab, PMID 22157286.
 46. Lu M, Faull KF, Whitelegge JP, He JB, Shen DJ, Saxton RE, et al. Proteomics and mass spectrometry for cancer biomarker discovery. *Biomark Insights*. 2007;2:347-60. doi: 10.1177/117727190700200005, PMID 19662217.
 47. Kumar A, Dasar D. Comparative study of the efficacy of kutaja Beeja Churna and ayurvedic herbal compound in managing Mutrashmari (urolithiasis)- A research protocol. *J Clin Diagn Res*. 2022;16(9): PK01-4. doi 10.7860/JCDR/2022/57763.16875.
 48. Singh R. H. Panchakarma Therapy, edition (reprint). Chaukhambha Sanskrit Series, Varanasi, 2007; 266.
 49. Kumar A, Dasar D, Jaivarshaa P, Sharma DP. Ashmari in Brhat-Trayi: A critical review of the literature. *Int J Life Sci Pharm Res*. 2023;13(1):L56-65. doi: 10.22376/ijlpr.2023.13.1.L56-65.
 50. Kumar DA, Dasar DD, Sharma DP. Panchkarma in surgical diseases: a review of classical text. *Int J Life Sci Pharm Res*. 2023;13(3):L51-60. doi: 10.22376/ijlpr.2023.13.3.L51-L60.
 51. Patil C. Vasant. Essentials of Practical Panchakarma Therapy, Chapter I, 1st edition, Chaukhambha Publications, New Delhi, 2015; 1.
 52. Chaple J, Kolpakwar S. *Shatkriyakala*- A novel concept for health conservation. *J o in sys Med*. 2016;4(2):103-7.