



Review Article

CRITICAL REVIEW ON AVARANA WITH CONTEMPORARY UNDERSTANDING

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ABSTRACT

Vata has given utmost importance in Ayurveda. Starting from molding the shape of *Garbha*, *Vata* controls various bodily activities, including the *Manas*. Like other two *Dosha*, the normalcy of *Vata* maintains health, or diseases otherwise. *Vata* is the one with the ability to move and also do propulsion of other *Dosha*, *Dhatu* and *Mala*. *Avarana* is one among the unique concept attributed to the pathologies involving *Vata Dosha*. The *Gatyatmakata* of *Vata* being afflicted in the *Avarana* and hence resulting in the diseases. The minute fluctuations in the *Gati* or the movement of *Vata* can alter the normal health. Knowledge of *Avarana* is also useful in the treatment of *Vatavyadhi*. The *Anutva* and *Amurtatva* of *Vata* making this composite process more complicated to understand and even diagnose. In general, there occurs an interruption to the normal movement or flow of *Vata dosha* that can be compared to various pathologies as disequilibrium of Starling force, turbulent flow or even sludged blood. E H Starling, proposed that the four primary forces that determine whether fluid will move out of the blood into the interstitial fluid or in the opposite direction. Any changes in these forces end up in disequilibrium in capillary exchange. The normal laminar flow of blood becomes turbulent, when the rate of blood of is high, when it passes any obstruction (e.g.: atherosclerotic plaque), when it makes a sharp turn or when it passes through a rough surface. In case of sludged blood, a block occurs in many of the very small blood vessels leading to the ischemic changes in the tissues. In all these conditions, there affects the movement or flow and hence result in pathologies. Hence it can be compared to that of *Avarana*.

INTRODUCTION

Vata

Vaa gati gandhanayoho ithi dhatuhu.^[1] *Vata* is the one that having *Gati* or movement. The factors that makes *Vata* unique are its specific *Guna* as, *Ruksha*, *Laghu*, *Sheeta*, *Khara*, *Sukshma*, *Chala* ^[2], *Amurtha*.^[3] *Vata* does the transportation of other *Dosha*, *Dhatu* and *Mala* ^[4] by its *Chala Guna* (ability to move). The movement happens in a systematic way, in specific *Srotas* (channels) and also in specific directions.

When this normal movement is hampered, this can lead to various pathologies. In *Avarana*, the normal movement of *Vata* is either hampered or any turbulence happens, due to the impediment in its natural path.

Gati sidhanta

Avarana can be understood by knowing about *Vata* in detail, especially its movement. The uninterrupted movement of *Vata* is very important in maintaining the health. When *Vata* is not deviated from its own path, pertaining to its own *Sthana*, and in *Prakrutha Avastha* helps to maintain a disease free state.^[5] Hence it is understood that when the *Gati* or movement is hampered, it ends up in *Vataja Vikara*.

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Understanding Gati of Pancha Vata**Table 1: Sub types of Vata and its Sthana, Sanchara Sthana, Karma and Gati [6]**

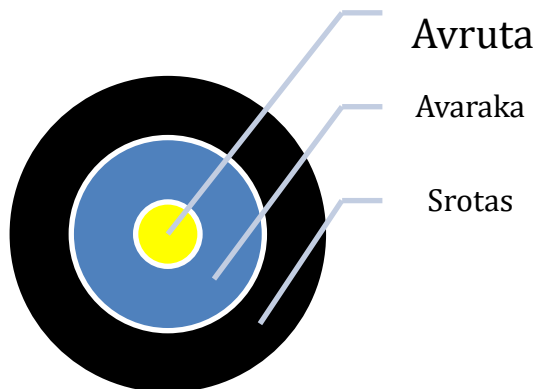
Vata subtype	Sthana (location)	Sanchara Sthana (areas of movement)	Karma (functions)	Gati (movement)
Prana	Murdha	Uras, Kantha	Dharana of Budhi, Hrudaya, Chitha Shtheevana, Kshavathu, Udgara, Niswasa, Annapravesana	Downward direction
Udana	Uras	Nasa, Nabhi, gala	Vak pravruithi, Prayatna, Urja, Bala, Varna smriti	Upward
Samana	Agni sameepa (Koshtha)	Sarva Koshtha	Anna grhana (with holding Apakva ahara), Pachana (digestion by Agni), Vivechana (nutrient assimilation) and Munchana (propulsion of Shakrud, Mutra etc downwards)	Within koshtha
Vyana	Hrudaya	Entire shareera	Gati (movement), Apakshepana (downward movement of body parts), Utkshepa (upward movement of body parts), Nimesha (Akshi nimeelana, Unmesha (Vikasa)	In all direction throughout the body
Apana	Guda	Sroni, Basti (Mutrashaya), Medhra (Mutramarga), Uru	Nishkramana (propulsion) of Shukra, Artava, Ahakrut, Mutra, Garbha	Downward direction in lower part of the body

Avarana**Nirukti**

The word *Avarana* means *Avarodha* or *Gati Nirodha*, as explained in *Ayurvedeeya Shabda Kosha*, which means obstruction to the movement.

Pathology of Avarana utpatti

Avarana manifests as a result of obstruction or entrapment done by a strong and vitiated *Dosha* to a weak *Dosha*. In *Avarana*, there are two main important factors, *Avaraka* and *Avruta*. That which cause occlusion or hindrance is called as *Avaraka* and that which is getting occluded or hindered is known as *Avruta*. The *Avaraka* should be identified as that which is having *Karma Vrudhi* (increased function), and *Avruta* should be identified with its *Karma hani* (reduced functions).^[7] But the *Karmakshaya* of *Avruta* is temporary and in due course of time it turns into *Karma Vridhi*. Also the entire pathology occurs inside the *Srotas* (channels). *Avaraka* can be of two types; those which are having a particular structure as like *Pitta, Kapha, Ama, Mutra, Pureesha* etc. (*Murtha Avarana* or *Anyavarana*) Also each subtype of *Vata*, that is having different *Gati* or movement in different direction, ends up in *Avarana*, which constitutes the *Anyonyavarana* (mutual) or *Amurtha Avarana*. This is happening as winds move in a tornado, where the wind from different directions collide each other and moves uncontrollably.^[8]



Types of Avaraka

Broadly classified into two groups

Murtha Avaraka

- Pitha
- Kapha
- Rakta
- Mamsa
- Meda
- Asthi
- Majja
- Shukra
- Anna
- Mutra
- Varchas

Amurtha Avaraka

Any one sub type of Vata as:

- Prana
- Udana
- Samana
- Vyana
- Apana

Avruta

Avruta is the one that gets occluded. It can be Vata in general or any subtype of Vata based on Karma and Sthana. Either Avaraka or Avruta can be only one or in combination, can ends up in Avarana. If there is more than one Avaraka or more than one Avruta, it is called as Mishravarana.^[9] Eg: Pitha and Kapha together can cause Avarana to Samana and Apana Vata at a time.

Avarana as Nidana for Vatavyadhi

'Vayurdhathukshayat Kopo Margasyavarana Cha'^[10]

There are two main causative factors for the vitiation of Vata as:

- Dhathukshaya
- Marga Avarana

In Dhathukshaya, there will be depletion of Rasadi Dhathus that results in Prakopa of Vata. In case of Avarana, there will be blockage to the path of Vata. In case of Murtha Avarana, Nidana points towards the vitiation of the Avaraka, i.e., Pitha, Kapha, Rakta etc rather than Vata Prakopaka Karana i.e., in case of, Pithavruta Vata, Pithakara Nidana will be there, not

Vatakara Nidana. In Anyonyavarana, Nidana for the Avaraka Vata will be there. Eg: in Samanavruta Apana, Samana Vata will be vitiated and occludes Apana.

Clinical Identification of Avarana

Assessment of the Karma (normal and abnormal function) and Gati (normal and abnormal movement) of Vata in each and every disease is essential. If the Samprapthi points towards Avarana, then need to find out the associated Avaraka, either Pithadi Murta Avrana or Pranadi Amurtha Avarana. This can be understood by the principle of Karma Kshaya, Karma Vrudhi.^[11] Here Karma Kshaya happens to Avruta Dosh, Karma Vridhi to Avaraka. e.g.: in Pithavruta Vata, the symptoms will be of increased Pitha as Daha, Trishna, Vidaha etc there will be minute localised pain due to the obstructed Vata.

Importance of Srotas in Avarana

Srotas are the channels through which the transportation of Margaga dhathu happens^[12] by Vyana Vata^[13]. The entire process of Avarana happens in various Srotas, based on Khavaigunya. The six qualities of Vata are seen in the Sharira through the Srotas which leads to the Prakopa of Amurta vayu, while Snigdha adi guna act on Srotas and does the Prashamana of Vata Dosh^[14]. Thus Srotas plays an important role in occurrence and prevention of Vata related disease. In Avarana, Vata is prevented from doing its Prakrutha Karma of Vikshepana (transportation), thereby ends in Dhathu Shoshana. The manifestation of these diseases again based on the Sthana of Avarana. It emphasises that, Avarana can happen anywhere in the body, which has to be understood by the non-functionality of the Vata Dosh pertaining to that area.

To emphasis the role of Srotas in disease manifestation, it is been stated that, for proper maintenance of Shareera, there requires the following factors as:^[15]

- Anupahata Sarva Dhathu Ushma- Uninterrupted or properly functioning Dhatvagnai
- Anupahata Marutha, i.e., properly functioning Vyana Vata as it does the Vikshepana of Rasadi Dhathu
- Anupahata Srotas – Uninterrupted Srotas

Table 2: Comparison of Various Pathologies of Vata Dosha

	Avarana	Gata Vata	Vata Nanatmaja Roga	Ashayapakarsha
<i>Nidana</i>	<i>Nidana favours Avaraka, Murtha or Amurtha</i>	<i>Vataja Nidana</i>	<i>Vataja Nidana</i>	<i>Vataja Nidana</i>
<i>Prakupita Dosha</i>	<i>Avaraka, (Murtha or Amurtha)</i>	<i>Vata</i>	<i>Vata</i>	<i>Vata</i>
Status of <i>Vata</i>	<i>Kshaya of Avruta Vata</i>	<i>Prakopa of Vata</i>	<i>Prakopa of Vata</i>	<i>Prakopa of Vata</i>
Status of other <i>Dosha</i>	<i>Karma Vrudhi of Avaraka and Karma Kshaya of Avruta</i>	<i>Kshaya of Sthanastha Dosha, Dhatu or Mala</i>		<i>One Dosha is in Prakrutha Avastha, another one is in Kshaya</i>

Gata Vata and Avarana

In *Gata Vata*, due to the *Vatakara Nidana*, *Vata Prakopa* happens and this *Prakupita Vata* enters other *Sthanas* or *Ashaya* or any other *Dosha*, *Dhatu*, *Mala* and thereby causing disease.^[16] Eg: *Prakupita Vata* enters *Amashaya*, *Amashayagata Vata*, if enters *Rakta Raktagata Vata*, *Indriyas*, then *Indriyagata Vata*. But in *Avarana*, the normal movement of *Vata* is hampered due to the vitiation of *Avaraka* and inhibits *Vata* from doing its functions properly. Eg: in *Raktavruta Vata*, *Rakta* is vitiated and hampers the path of *Vata*, in *Samanavruta Apana*, *Samana Vata Prakopa* happens and it obstructs the normal *Gati* of *Apana*. Here in *Avarana*, *Karma Kshaya* of *Vata* happens due to obstruction.

Nanatmaja Vata roga and Avarana

In *Nanatmaja Vatavyadhi*, the pathology involving *Vata* alone is happening.^[17] in *Avarana*, other *Doshas*, *Mala*, *Ama* etc also associates.

Ashayapakarshana and Avarana

In *Ashayapakarsha*, *Vata* is in *Prakupita Avastha*, and the *Nidana* are favourable of *Vata*. The *Prakupita Vata* drags the *Prakrutha* (normal) *Pitha* or *Kapha* from its normal *Sthana* to any other place and hence results in disease.^[18] But in *Avarana*, the *Vata Kshaya* happens initially and the *Nidana* favours the *Pitha*, *Kapha* etc *Avaraka*.

Avarana and Sanga

In *Avarana*, more of turbulence happens, but in *Sanga* complete obstruction happens that again may lead to *Vimarga Gamana*.

Importance of Avarana in Chikitsa

The treatment principle of *Vatavyadhi* is stated as:

'*Kevalam Nirupasthambhamaadau Snehairupacharet*'^[19]

The treatment of *Vatavyadhi* depends on the differentiating factor as *Avruta Vata* and *Anavruta Vata*. Here the *Nirupasthambha Vata* indicates *Anavruta Vata* (the *Vata* which is not got obstructed).

The *Kevala Vata* or the *Nirupasthambhita Vata* should be treated from *Vataja Upakrama*.

The treatment for *Avarana* is of two types, specific treatment and general treatment. The specific treatment depends on the type of *Avaraka*. Eg: *Kaphavruta Vata*, the treatment is *Yavanna*, *Swedana*, *Niruha*, *Vamana*, *Virechana* etc which will reduce *Kapha*.

General treatment of *Avarana*, aim towards cleansing the *Srotas* with the usage of different medicaments that possess *Anabhishtyandhi*, *Snigdha*, which are *Kapha Pitta Aviruddha* (not antagonistic to) and *Vatanulomana*.^[20] Administration of the *Yapana Basti*, *Sramsana chikitsa* and *Rasayana Dravya* may be considered after analysing the *Bala* of patient and stage of the disease. Since *Dhatu Shudhi* and *Anupahatha Srotas* can prevent the *Avarana*, by preventing the *Khavaigunya* and thereby prevents *Vyadhi* manifestation, it can be primly achieved by the judicious usage of *Rasayana Dravyas* accordingly.

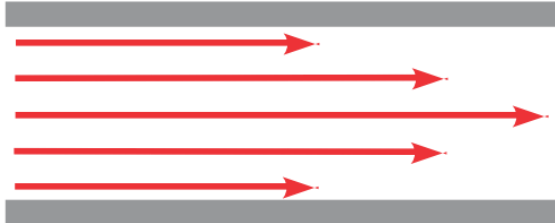
Contemporary understanding of Avarana**Starling Force**

Srotas plays an important role in *Avarana*. As per the starling forces, proposed by E H Starling, the four primary forces that determine whether fluid will move out of the blood into the interstitial fluid or in the opposite direction. These four forces are 1. The capillary pressure (P_c), which tends to force fluid outward through the capillary membrane. 2. The interstitial fluid pressure (P_{if}), which tends to force fluid inward through the capillary membrane when P_{if} is positive but outward when P_{if} is negative. 3. The capillary plasma colloid osmotic pressure (P_p), which tends to cause osmosis of fluid inward through the capillary membrane. 4. The interstitial fluid colloid osmotic pressure (P_{if}), which tends to cause osmosis of fluid outward through the capillary membrane.^[21] If any variations happens in any of this pressure, it results in the extra fluid accumulation results in

oedema. This can be compared to *Avarana* as there is a hamper in the normal flow of fluids and ends up in pathology.

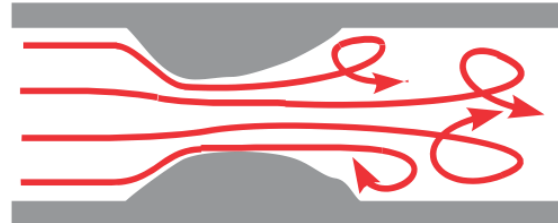
Turbulent Flow

Blood flows in streamlines in a vessel, if there is a steady rate, with each layer of blood remains the same distance from the vessel wall. This type of flow is known as laminar flow. Opposite to this is a turbulent flow, where the blood flows in all directions and



Laminar Flow

continually mixing within the blood vessel. The turbulent flow is due to the following reasons as: rate of blood flow is high, when it passes any obstruction (eg: atherosclerotic plaque), when it makes a sharp turn or when it passes through a rough surface.^[22] This turbulent flow can be compared to *Avarana*, as the normal streamline flow is interrupted, i.e., *Gati* is hampered.



Turbulent Flow

[23]

Also the viscosity of blood is directly proportional to resistance and inversely proportional to flow; therefore, any condition that causes viscosity to increase will also increase resistance and decrease flow. This can be considered as *Avarana* due to *Ama*. The heaviness of *Ama*, slows down the *Vata*, i.e., *Gati* is affected.

Sludged Blood

In the context of progressive shock, one of the underlying mechanisms explained is sludged blood, the mechanism where a block occurs in many small blood vessels leading the shock to progress. As the tissue mechanism continues despite the decreased flow, there accumulates large amounts of carbonic acid and lactic acid, which further increase the acidity of the blood. The reduced blood flow also causes ischemic changes in the affected tissues. The acid and the ischemic tissues causes local blood agglutination, that further results in minute blood clots, leading to very small plugs in the small vessels. Even though the vessels do not plug, there will be an increased tendency for the blood cells to stick to one another making the blood flow more difficult through the microvasculature, finally ends up in sludged blood.^[24] This can be compared to *Avarana* as there occurs the hindering of the normal flow.

DISCUSSION

For every *Dosha*, *Vridhi* and *Kshaya* are the main pathological state. Similarly, in the case of *Vata Dosha*, *Vata vridhi* happens due to *Dhathu kshaya* and *Vata Kshaya* happens in *Avarana*. *Vataroga* manifest based on the *Hethu* and *Sthana*.^[25] Here *Acharya Chakrapani* explains *Hethu* as the *Pithadi Avarana*. Even if the *Avarana* happens by the *Pitta*, *Kapha* etc, the importance to be given to the *Vata Dosha* only, due to its *Sukhmatva*, *Sukhma Marganusarithaya* and

Prerakatva Gunas. So, in *Avarana*, *Vata* will be prevented from doing its *Prakrutha Karma* of *Vikshepana* etc thereby ends in *Dhathu Shoshana*. The manifestation of these diseases again based on the *Sthana* of *Avarana*. It emphasises that, *Avarana* can happen anywhere in the body, which has to be understood by the non-functionality of the *Vata Dosha* pertaining to that area.

CONCLUSION

Avarana always happens as a complex phenomenon involving *Vata*. The proper understanding of the *Avarana* helps to do the *Samprapti Vighatana* and hence makes the treatment fruitful. To understand this, consider the example of a truck which can be compared to *Vata* here. The truck does the transportation of different goods, via road. Truck has a speed, path to travel and a destination point to reach. So many factors can interfere with the journey of this truck. If the truck is moving in a heavy traffic, its speed is slow down, this can be compared to the *Murtha Avarana*. If the truck carries heavy load then also speed decreases, this can be considered as *Ama* association. If the road is uneven or with gutter, can also interferes with the speed and that can be considered as *Sroto Dushti*. In the similar manner *Gati* of *Vata dosha* gets hampered due to various factors. Proper identification of the underlying pathology is most important factor in treatment as *Samprapti Vighatanameva Chikitsa* is explained. Hence understanding *Avarana*, holds prime importance. The *Avarana* can be compared to various mechanisms involving the blood flow as in the disequilibrium of Starling forces, turbulent flow of blood and sludged blood, in general.

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