

**A CONCEPTUAL REVIEW OF SHUKRAWAHA STROTAS
W.R.S.OLIGOSPERMIA**

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ABSTRACT :

Ayurveda is an ancient health science which helps in the eradication of disease as well as maintaining health of healthy person. It forms a precious base of Indian culture. It is best among all the health sciences because of its basic Sidhantas Tridosha, Panchmahabhootas, Dincharya, Ritucharya, Sadvrita etc. The Chaturvidha Ahara (Asita, pita, leedha, Khadita) which a person consumes is responsible for formation Seven Dhatu. Shukra is also formed from this Aahara, finally as a Dhatu, according to physiology described by the Acharyas by the way of kshiradadhi nyaya, kedarikulya nyaya, khalekapot nyaya. Charak consider Vrishanu (testicles) and Shepha (penis) as the Mula of Shukravaha srotas¹. Shushruta considers Vrishna and Stana (breasts) as the Mula of Shukravaha srotas. The Prasadansha of Shukra is responsible for the conception denotes spermatozoa which carry all genetic characteristics of the individual. When insufficiency of semen is occurring then it called as Kshinshukrajanya Klaihya² according to classical text. In the Ayurvedic text, acomphresive description has been given of Shukravaha Srotas. The aim of

this conceptual article is to compile and re-evaluate the various principles related to different aspect of Shukravaha srotas and its pathology like Kshinshukrajanya Klaibya (Oligozoospermia).

Key Words: *Shukravaha srotas, Kshina sukrajanya klaibya, Vrishana, Oligospermia, Oligozoospermia*

INTRODUCTION

Ayurveda being the science of life not only deals with the health and illness of human beings but also throws considerable light on the socio religious and philosophical aspects such as Dharma, Artha, Kama and Moksha are four tenets of life. One can't attain this without progeny; further continuation of human race is also not possible without progeny. Perpetuation of species is the basic phenomenon in nature. Parenthood remains one of the most desired goals of every couple, and failure to procreate causes great anguish. The main factor for failure is some physiological disturbances in Shukravaha Srotas leads to pathology. Srotas are the main and important topic as per physiology, because these are related with the nourishment of the different parts of the body and on other hand are important in the pathological understanding of the different topics. Ayurveda is a completely practical science and for the sake of this practicality we should have a better vision about these Srotasa. Vata, Pitta and Kapha are the dosha which are though vitiated the biological condition but not capable to create a disease independently at their own accord. Ayurveda deals with the dosha, dusya, Srota, agni and ama as biological factors. Rasa, Guna, Virya, Vipaka and Prabhava deal with the action of the drugs by the process of which it acts on the system. The vitiated posaka dosha after passing series of pathological changes developed a disease. The Srotas in the system are only responsible for the transporting the vitiated posaka dosha from the place of kha-Vaigunya to the place of manifestation of the disease. Concept of Srotas is unique contribution of Ayurveda to medical system. Srotas are minute hallow part pathways or passages through which Parinamita Dhatus are transported across body Any Vikruti in srotas leads to disease. All the Brihatrayis have mentioned Sukravaha Srotas Therefore, a detailed description regarding Shukravaha srotas, normal Physiology, related pathology and its etiopathogenesis has been given.

AIMS AND OBJECTIVE :

1. To discuss and elaborate about Shukravaha srotas.
2. To understand pathology of Shukravaha srotas especially oligozoospermia.

MATERIAL AND METHODS:

This article is based on a review of Ayurvedic texts. Material related Shukravaha srotas and related relevant topics have been collected. The main Ayurvedic texts used in this study are Charak Samhita, Sushruta Samhita, Ashtang Samgraha, Ashtang Hridaya, Bhava prakash, Sharangdhar Samhita and available commentaries on these. I have also referred to the modern texts and searched various websites to collect information on the relevant topics.

CONCEPTUAL STUDY CONCEPT OF SROTAS:

The term Srotas is derived from the main Sanskrit root "Srusrawane" which means the structure to exudates, to ooze, to filter and to permeate. According to Amarkosha it has been defined as "Srotoambu Sarnam Swatah".

According to charaka, srotas with external openings are:- 9

Eye -2, 2- nose -2, 3- ear -2 ,4- mouth-1 ,5- anus-1 ,6- urethral opening-1

According to sushruta 9 srotas with external openings are present in males & 12 in females. He has included 2 nipples & 1 uterine opening in external orifice srotas in females.

शुक्रवहना स्रोतसां वृणो मूल्यं श्लेष्मच्च
च.वि. 5/8
वदे शुक्रवहे (धमन्यौ) शुक्र पदुर्जाव वदे विसर्ज्या
शुक्रवहे वदे तयो मूल स्तनी वृणो च ।
सु.शा. १५

Table No 1:

Sr. No.	Strots	Sites of origin
1.	Pranavaha (Vital birth)	Heart and mahasrotas (Central Cavity or alimentary tract)
2.	Udakavaha (watery elements)	Talu (Palate) and Kloman (Pancreas?)
3.	Annavaha (Food and its products)	Stomach and Vamaparsva (left side?)
4.	Rasavaha (Plasma)	Heart and ten vessels
5.	Raktavaha (blood specifically the Hb fraction of it)	Liver and spleen
6.	Mamsavaha (muscle tissue)	Ligaments and skin.
7.	Medavaha (fat & adipose tissue)	Kidney & Omentum
8.	Asthivaha (bone)	Adipose tissue and buttock
9.	Majjavaha (Marrow)	Bones and joints
10.	Sukravaha (Semen Specially the sperm)	Testicles
11.	Mutravaha (Circulation of Urine)	The bladder and Vanksanas (Kidneys)
12.	Purisavaha (Carrying faeces)	The colon and the rectum
13.	Swedovaha (Carrying Sweat)	Adipose tissue and the hair follicles

CONCEPT OF SHUKRAVAHA SROTAS:

Concept of Srotas is unique contribution of Ayurveda to medical system. Srotas are minute hallow part pathways or passages through which Parinamita Dhatus are transported across body Any Vikruti in srotas leads to disease. All the Brihatrayis have mentioned Sukravaha Srotas. Acharyas have differently opined about the Moolasthan (root) of Shukravaha srotas.

During streepurushasamyoga due to cheshta, sankalpa and pidana, shukra moves out through the mutramarga . Shukra which moves through whole body in shukravahasrotas gets propelled with force due to harsha, sankalpa and manobhavas. It becomes vileena like ghee and is displaced due to the ushma caused by vyayama and comes out of the vasti just like water flowing towards a lower surface under the mesh of network of shukravaha srotas. This Shukra is constituted of 4 bhootagunas i.e. vayu, agni, jala and pruthvi and it originates from madhuradi shad rasas . This shukra helps in production of progeny . It develops dhairya(confidence), chyavana(youth), preethi(passion), dehabala(promotes physical strength), harsha(pleasure) and the pramana of this shukra is half anjali .This shukra has its own respective mala as per the opinion of different Acharyas as ojas ,youvanapidaka,twaksneha as per the opinion of vagbhatta,Sharangadhara,and bhavaprakasha respectively.

MOOL OF SHUKRAVAHA STROTAS :

Table no 2:

Mool	Cha vim 5/9	Shu sha 9/12	Ash sang
<i>VRISHNAU</i> (BOTH TESTICLES)	+	+	-
<i>SEPHA</i> (PENIS)	+	+	+
<i>STANAOU</i> (BOTH BREAST)	-	-	+
<i>MUSHKOU</i> (BOTH TESTICLES)	-	-	+
<i>MAJJI</i> (BONE MARROW)	-	-	+

SHUKRAVAHA STROTO DUSHTI KARAN

Table No 3:

SR.NO	AHARAJ KARAN	CHA	SHUS	VAG	YOG
1.	DOSHA GUNA SAMA SHAREERA	+		+	
2.	DHATU VAIGUNYA KARA AHARA	+		+	
	VIHARAJA KARANA				
3.	AKALA YONI GAMANA	+			
4.	ATI MAITHUNA	+			
5.	VEGA NIGRAHA	+			
6.	SHASTRA KARMA	+	+		+
7.	AGNI KARMA	+	+		
8.	KSHARA KARMA	+	+		
9.	VIDHA		+		+
10.	AYONI GAMANA	+			

SHUKRAVAHA STROTO DUSHTI LAKASHAN

Table no 4 :

SR.NO	LAKASHAN	CHARAK	SUSHURTA
1.	KLAIBYA	+	+
2.	AHARSHANA	+	+
3.	ROGAYUKTA SNATANA	+	
4.	KLIBYA SNATANA	+	
5.	VIKRITARUPAYUKTA SANTANA	+	
6.	GARBHA NASHANJAYATE	+	
7.	GARBHA SRAVA	+	
8.	GARBHA PATA	+	
9.	SHUKRA CHIRAT PRASEKA		+
10.	RAKTAYUKTASHUKRA PRAVRATI		+
11.	SHUKRASHMARI		+
12.	SHUKRAMEHA		+

VRISHANA: -

It is one of Moola of Shukravaha Srotas, they are two in number. The word *Vrishana* is formed from *Vrishana*, *Mushka*, *Phala* and *Anda* are synonyms of testes used in the Ayurvedic classics. *Vrishana* The term 'Vrishana' which means showering. The *Vrishana* shower *Shukra* and hence name *Vrishana*. *Anda* It resembles the egg in shape and hence the name *Anada Phala*, it contains numerous seeds. It can be said that the *Vrishanagata Shukradhara Kala*, brings about the formation of *Rupa Dravyam* which is a mixture of the fertility factor and fluid media. While considering the embryonic origin, *Vrishana* is produced from the Sara of *Mamsa*, *Rakta*, *Kapha* and *Medas* They are suspended outside the body within a sac behind the penis and in between the thighs. *Vrishanagata Shukradhara Kala* (this *kala* pervades all over body), brings about the formation of *Rupadravya*, which is admixture factors responsible for progeny and some liquid medium. Here, this factor can be correlated to sperms, since they are produced only at *Vrishana*; following quoting of Sharangadhara and Sushruta; any injury to *Vrishana* leads to infertility or impotence, also supports the same, The formation of *Vrishana* in *garbha* takes place with the help of the following components:-

SEPHA:-

Sepha is the copulatory organ in males. It performs dual functions of excretion and ejaculation of *mutra* and *shukra* respectively by the action of *Apanavayu*. *Upstha*, *Sishna*, *Medhra*, *Mehana*, *Dhwaja*, are some of synonyms used in classics. *Sepha* is bound in the middle by *Sepha sevani* and belongs to one of the Panchakarmendriyas functioning under the control of *Apan Vayu*. Erection of penis and ejaculation of *Shukra* or *Rupdravya* takes place as follows -Because of *chesta* (physical stimulus), *Sankalpa* (psychological stimulus or desire to enjoy) and *Pidana* (stimulation of erogenous area) causes filling up of *Shukravaha Siras* with blood, resulting in erection of penis which facilitate sexual act...*Harsha* (passionate desire), *Tarsa* (psychological excitement), *Sarattva* (Fluidity), *Picchlattva* (slimness), *Gaurava* (Heaviness) and *Anuttva-Pravanattva* (atomicity and tendency to flow)-quality of *Shukra* causes to come out, through *Sepha* at the height of sexual intercourse under the influence of *Apan Vayu*. *Medracharma Medhrasandhi* is the area surrounding the external urethral orifice and *medhrasandhi* (corona glandis).

SHUKRADHARA KALA:

It is the seventh Kala and is pervaded in the entire body of living beings ,Shukra pervades all over body in Shukradhara Kala in such a way ghrita is present in milk and iksu rasa present in iksu. Shukradhara Kala is not an anatomical entity present in body, but is a physiological phenomenon taking place in males, which has two main functions viz.

ETYMOLOGY OF WORD SHUKRA :

शुच क्तदे + ऋवेन्द्रायववेति उणाः । इति रन्प्रत्ययेन साधु मञ्जवातघातुः॥

The derived word Shukra is having multiple meanings They include:

1. Bright
2. White
3. Resplendent (to shine)

Definition of 'Shukra':- Shukra is the substance which is responsible for all systemic body activities including metabolic functions and part of which comes out of the body at the time of sexual act and performs specific functions of reproduction. Various lexicographers have elucidated definition of word 'SHUKRA' according to different contexts (Nalanda Vishal Sabda Sagar): Technically in different contexts term "Shukra" is used to denote different substances.

1. A name of fire
2. The planet Venus (Shukra graha)
3. Preceptor of Daityas.
4. A disease of the eye.
5. Silvery white substance that is ejaculated.

6. The substance which is white and potential.

7. A very pure substance.

8. Seventh Dhatu of the body.

9. Gold Synonyms representing androgen: The substances in the body, which are having masculinising properties, are known as androgens. Major portion of these are produced from the interstitial cells the adrenal cortex, growth of sex organs, development of male secondary sex characters, spermatogenesis, muscular development are facilitated by these androgens. Its activity and production are controlled by pituitary and hypothalamus. Synonyms identify Shukra as androgen derivative is given below:

- I. Paurusam (Virility which is inherit in a man)
- II. Veerya (Potency by which action is performed)
- III. Bala (Power)
- IV. Teja
- V. Pumsatvam Synonyms representing semen: Semen is the suspension of Spermatozoa in the secretion of the Prostate, seminal resides and Cowper's gland ejaculated at the end of sexual act. The synonyms identifying Shukra as Semen are: Retas: Chakrapani while commenting on that word described. It has factors and responsible for production of offspring Rupdravya can be considered semen as a whole along with its subtitle bodies like sperm.

PHYSIOLOGICAL CONSIDERATION OF SHUKRA IN SHUKRAVAHA SROTAS

Production Shukra from Ahara Rasa: Beginning from Rasa Dhatu upto Shukra all the Dhatu are produced in a fashion of progressive evolutive metamorphosis. This means that Rasa Dhatu is basically produced from Ahara rasa which is ingested by the action of Jatharagni. Rasa Dhatu gets converted into Rakta Dhatu and so on. Previous Dhatu is precursor to next and higher by the action of respective dhatvagni in it. So from Majja Dhatu, Shukra Dhatu is produced The mode of conversion of Ahara rasa into Shukra is explained by three hypotheses namely –

1. *Ksiradadhi Nyaya*
2. *Khalekapota Nyaya*
3. *Kedarakulya Nyaya*

The ingested chaturvidha ahara converts in to Ahara rasa after acting upon it by jatharagni and bhutagni. Then the action dhatwagni starts. The former Dhatu gets converted and divided into two portions by the action of dhatwagni. They are i) Prasada Bhaga ii) Kitta Bhaga Production of Shukra from Majja Dhatu: Shukra is seventh in order of Sapta Dhatu and is quoted to be produced from evaluative metamorphosis of Majja Dhatu by the action of Shukradhatvagni on Majja Dhatu. Shukra is produced from prasada bhaga of Majja Dhatu Vayu and Akasa Mahabhuta produce porosity in Asthi Dhatu. From this pores, *Shukra* oozes out like water from a new earthen pol and spreads all over body. Time Required For Production Of *Shukra* Dhatu: Sushrutaacharya says that nearly one month is required for metamorphosis of ahara rasa into Shukra. But Parasara opines that eight days are enough for Shukra nirmana. Finally Vagbhata quoted all the view of different authors, either it may take twenty four hours or six days or one month. Chakrapani has correlated all the above opinions and brought the concept according to status of Dhatvagni. According to Cakrapani, if dhatvagni is at optimum level, then process of *Shukra* production occurs at speed of 'Archi' and produced within eight days. If dhatvagni is at moderate level, *Shukra* nirmana takes place at the speed of 'Shabda' and produces Shukra Dhatu within two to three weeks. If Dhatvagni is at mild level, the process of Shukra production takes place at the speed of 'Jala' and it takes one month.

1 Month: - Kshiradadhi nyaya

6 days: - Kedarikullya nyaya

1 day, immediately: - Khalekapota nyaya

LAKSHANAAS OF KSHEENA SHUKRA ACCORDING TO VARIOUS ACHAARYAAS

Lakshanas of Shukra Kshaya: Charaka Samhita	Sushruta Samhita	Ashatang Hridaya
1. Dourbalya	Medhra vedana	Chirat Prasichet
2. Mukhashosha	Vrushan vedana	Shukra Shonitamev
3. Pandutwa	Ashakti Maithune	Atitoda of Vrushan
4. Sadana	Chiradwa Praseka	Medhra Dhumayativ
5. Shram	Alpa Praseka	
6. Klaibya	Raktashukra darshana	
7. Shukra Avisarga		

SARVADAIHIKA LAKSHANAS OF KSHEENA SHUKRA AND THEIR EXPLANATION

Sarvadaihika Lakshanas	Explanation
Dourbalya	Due to Shukra Kshaya the Ojokshaya also occurs. This further leads to Dourbalya. Kapha Dosha and Shukra Dhaatu are having the Ashraya – Ashrayi Sambandha. So that whenever Shukra Kshaya occurs there will be Kapha Kshaya also. It is Known that Praakruta Sleshma is Bala and its Vikrutavasta is Mala. So when ever Kaphakshaya occur that time Dourbalya also takes place.
Shrama	Due to Dourbalya, the patient may not be able to do the work. When he tries to do the work there will be tiredness.
Asya Shosha	Dryness in the mouth is due to Kaphakshaya and Rasakshaya
Angamarda	Pain all over the body is due to the Vaataprakopa which is formed as a resultant of Dhaatukshaya ie especially Shukra Kshaya.
Paandutwa	Paleness of the body is a resultant of the improper nourishment of the body due to lack of Kapha, Vaataprakopa and Pittaprakopa and due to these vitiation, the Rasadhaatu gets vitiated which further leads to Paandu.
Sadana	Feels like joints are having less strength because of the Kaphakshaya occurred.
Bhrama	Giddiness is due to the Prakopa of Vata and Pitta as well as it may be due to the improper nourishment of the Dhaatu.

Samprapti of Kshina Shukra When a person consumes Samanaya and Visishta nidana of Kshina Shukra, it leads to prakopa of Vata and Pitta doshas. This is a common happening and from this stage the Samprapti can be completed in two different ways: 1. Prakupita Vata and Pitta doshas vitiate Jatharagni following as Vaishamya of Jatharagni ends in Amotpatti. Ama means improperly digested Anarasa. As a result of the entrance of Ama dosha into the Rasavaha Srotas, obstruction of Rasavaha Srotas takes place. Since there is obstruction to flow of nutrients, transformation of Rasa Dhatu to the next higher Rakta Dhatu is hindered. The result is Rakta Kshaya. So, progressive evolutive metamorphosis of Dhatu is hampered. Majjavaha srotas, obstruction leads to poor nourishment of Shukra Dhatu, which in turn produces Shukra Dhatu of low quantity and quality, manifestes as Kshina Shukra. 2. The other way, Khavaigunya in the Shukravaha Srotas produces directly by the Nidana of Kshina Shukra. At the same time, if person who is possessing Khavaigunya in Shukravaha Srotas and he is indulging in Vatakar and Pittakar Nidana, Shukragata Vata prakupita Vata and Pittakara Nidana. In this stage, localization of vitiated doshas in Shukravaha Srotas facilitates Dosha Dushya Sammurchana. The Prakupita doshas i.e. Vata and Pitta with a potential of creating pathology in body interact with Shukra Dhatu, thus producing Kshina- Shukra. Components of Samprapti of Kshina Shukra: 1. Dosha: Vata and Pitta 2. Dushya: Shukra 3. Srotas: Shukravaha Srotas 4. Srotadusti Lakshna: Sanga

OLIGOSPERMIA :

As explained earlier Oligospermia or synonymously oligozoospermia highly resembles Kshina Shukra vyadhi. However Kshina – Shukra is a condition in which Shukra Dhatu is quantitatively and qualitatively reduced. Etymological origin of the word OILGOZOOSPERMIA is as: Oilgo (few) + Zoo (live) + Sperm + Ia (Condition) So, this is a condition in which sperm count will be less than 20mil/ml. (WHO1992). Now WHO reassessed sperm criteria and establish a lower reference point less than 15 million/ml. This condition occurs due to etiological factors which hamper Spermatogenesis and also blockage in path, which conveys sperms from testis to outside. Etiology of Oiligozoospermia²⁴: Causative factors, which lead to Oligospermia, can be explained under the

LOCAL CAUSES:

A. Congenital: - Cryptorchidism or Congenital mal-position or undescended testis an incidence is one among causes poor semen quality. It causes permanent irreparable of testis (Berodafa 1974). They are also hormonally defective (Gendod et al 1978). Unilateral Cryptorchidism even when corrected prior to puberty is associated with abnormal semen in many males (Harrison 1994).

B. Thermal: - Scrotal temperature should be less than 2oF from the core body temperature. Raised scrotal temperature may depress the spermatogenesis because it is sensitive process, which alters with alternations in temperature. The temperature of scrotum will be raised in conditions like Vericocele, Hydrocele and Filariasis. Vericocele causes disruption in later stages of sperm maturation (Alvin & Paulser 1976). Moreover working near hot zone and wearing of tight undergarment more than 15 hours/day may also depress the spermatogenesis.

C. Infection: - Infections like Syphilis, non-specific Urethritis, Mumps and Orchitis after pubertal period may permanently arrest spermatogenesis. Mumps Orchitis arrests the maturation process and also arrest the androgenic function of leydig cells (Adamopoulous et at 1978). Systemic infection like bacterial or viral affect the sperm count. Chlamydia trachomitis or T. Mycoplasma infection lead to defective spermatogenesis.

2. Non local causes:

A. Genetic: - Klinefelter's Syndrome and xx Male syndrome are two genetic defects which lead to defective spermatogenesis. (Palsen 1974)

B. Endocrinal: - Hyperprolectinaemia can lead to hypogonadisim and has been associated with impotence (Franks et at 1977), effect on testosterone and dihydrotestosterone levels (Margini et al 1978) and a reduction in sperm count and volume of semen. (Falaschi et at 1978) Hypopituitarism, Hypothyroidism, Adrenal hyperplasia can also cause the disease – Oligospermia.

DISCUSSION:

Shukravaha srotas is important one among the Srotas, any physiological disturbance in the Srotas may cause pathology in Srotas and induces oligozoospermia like pathology. Oligozoospermia can be co-relate with the Kshinshukra and induces male infertility. Oligozoospermia is major cause of male infertility. Infertility is a deeply personal, emotionally charged subject. The inability to conceive or bear a child challenges one's self image, sexuality and hopes for the future. People experiencing infertility often find it difficult to understand and cope with the complex feelings that can arise during this trying time. Infertility affects the psychological harmony, sexual life and social relation of the couple. The incidence of male infertility is about 50% of infertile couples. It may vary from place to place, nation to nation but magnitude of the problems remains the same. Even with the advent of modern techniques, the success rate in conception is very low; the cost of treatment is also not affordable by all. The agony, sorrow of infertile patients remains almost same even today.

CONCLUSION :

Concept of Srotas is unique contribution of Ayurveda to medical system. Srotas are minute hollow part pathways or passages through which Parinama Dhatus are transported across body. Any Vikruti in srotas leads to disease. All the Brihatrayis have mentioned Shukravaha Srotas. The predominance of Vata and Pittadosha in predisposing disease Kshina Shukra (Oligozoospermia) is corroborated clinically. If the concept of Shukravaha Srotas understands then we can able to know the pathophysiology of Shukravaha Srotas and we can manage these pathologies like Oligozoospermia before worst condition of disease. Though this is conceptual study, but the information provided can be utilized in various experimental and clinical studies.

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