

Management of Shukrakshaya (Oligospermia) by implementing traditional Ayurveda treatment: A case report

Case Report

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Abstract

Oligospermia (Low sperm count) is one of the most common causes of male infertility today, which is easily diagnosed via semen analysis, keeping in mind the semen qualitative parameters preset by World Health Organization. There is however no clear reason as to why the condition occurs except for the congenital reasons. Heat, smoking, alcohol are certain factors that might affect the sperm count, these are being studied. Ayurvedic scriptures explain Shukra Dhatu (semen) vitiation by *Vata-Pitta-Kapha* (three fundamental humors of the body) which leads to Shukra Dosha (ailment in semen) like *Ksheen or Alpa Shukra or Shukrakshaya* (Oligospermia). The article here presents a case of a 35-year-old male patient with a known case of Oligospermia (8 million/mL), infertile for 5 years, who was diagnosed as *Shukrakshaya* and successfully managed by Ayurvedic intervention within a period of about 5 months. The case was managed by initiating *Agnidipaka aushadha* (therapy to increase functionality of the digestive fire) and *Aampachaka Chikitsa* (therapeutic digestion of the sluggish indigested food), followed by using *Virechana* (medicated purgation) as *Shodhana* (bio-purification). Later the patient was taken on Shaman (Ayurvedic palliative therapy)-*Vajikarana* (aphrodisiac therapy) & *Balya Chikitsa* (nourishing therapy) for 3 months, where a significant rise in the sperm count (51 million/mL) variables depicting normal values was observed which is discussed further in this article.

Keywords: *Shukrakshaya, Oligospermia, Shodhana, Virechana, Vajikarana, Balya.*

Introduction

Infertility has been a concern through the ages and has now become a significant clinical issue with its ascending incidences. With about 8-12% suffering couples, the male factors here results in about 40-50% of these cases. The term infertility encompasses the inability of a couple to achieve a clinical pregnancy in 12 or more months of regular unprotected intercourse. According to the most recent (April 2023) report by the World Health Organization, around 17.5% (1 out of 6) people worldwide experience infertility (1). Along with it, the fertility rate among younger males has dropped by 15%. In India, the infertility estimates range from about 3.7% in states like Maharashtra and goes up to 15% in Kashmir (2). Indian couples seeking treatment have tended to show that about 23% of the cases 'the male factor' is the cause. Factors influencing the causation of male infertility are many, however, most frequently the cause remains idiopathic (3).

Today, the provided conventional infertility treatments are mostly surgical and quite expensive. Non-surgical interventions include hormonal treatments and medications, antibiotics, etc., which in turn have their own set of side effects. Hence, there arises a need to provide some alternative treatments that help to aid this issue.

A separate chapter dealing with *Vajikarana*, and its aspects has been discussed by the Acharyas (4). Shukra (seminal fluid/semen) is considered as the seventh dhatu. Due to certain dietary, psychological and behavioural factors, vitiation of a physiological state of Tridosha occurs, leading to an *anuloma kshaya* of *Dhatu* (5). Thus, causing symptoms like *Daurbalya* (general debility), *Klaibya* (infertility), *Shrama* (fatigue), *Shukra Apraseka* (delayed ejaculation) to name a few (6). *Ayurveda* has an abundance of drugs which can be helpful in treating the male reproductive disorders with different modes of action like *Shukravardhaka* (enhancing spermatogenesis), *Shukrashodhaka* (clearing morphological defects of semen), etc. There is clear indication for the use of *Shodhana* procedures to gain the maximum effect of *Vajikarana* drugs (7).

The present article deals with a case of *Shukrakshaya* and its successful management by Ayurveda.

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Case report

Patient Information

A 35-year-old male patient attended the OPD of *Kayachikitsa* department on 8/04/2023, already diagnosed as Oligospermia with no major comorbidities. He complained of general debility and fatigue. The patient had a history of smoking from an early age. He reduced the frequency of smoking in the last 2 years but continued occasionally.

The patient had been married for 5 years and had no kids. He was diagnosed with Oligospermia in March 2022, according to the reports (Figure 1), and wanted to undertake Ayurvedic intervention for management of his condition, after an unsatisfactory allopathic treatment of 10 months.

Clinical findings

Chief Complaints: K/C/O Oligospermia, General Debility, Fatigue.

Systemic Examination: CNS- Oriented to time, person and place; CVS- S₁ S₂+, RS- Clear, AEBE

General Examination:

Pulse- 72/min
 Blood Pressure- 120/70 mmHg
 Temperature- 98.6 F
 P/A- Non- Tender
 L/E- No structural deformity. Normal

Pallor- Absent
 Icterus- Absent
 Cyanosis- Absent
 Clubbing- Absent

Therapeutic intervention

Table 1: Table for plan of treatment, medications, route of administration, dose & dietary regimen

Treatment Regimen	Duration	Drug	Dose & Frequency	Route of Administration	
Dipana-Pachana-Brimhana	8/02/2023 to 15/02/2023	Aampachaka Vati	250 mg 2 tablets twice a day	Oral	
		Chitrakadi Vati	250 mg 2 tablets twice a day	Oral	
		Aarogyavardhini Vati	250 mg 2 tablets twice a day	Oral	
	25/04/2023 to 1/05/2023	Vrishya Capsule	500 mg 2 capsules twice a day	Oral	
		Ashwagandha Ghrit	10mL twice a day	Oral	
Abhyantar Snehapan	28/04/2023 to 2/05/2023	Ashwagandha Ghrit	28/04/2023 (7 AM)	25mL	Oral
			29/04/2023 (7 AM)	50mL	
			30/04/2023 (7 AM)	75mL	
			1/05/2023 (7 AM)	100ml	
			2/05/2023 (7 AM)	150mL	
Virechana (along with Snehana-Swedana)	2/05/2023 to 5/05/2023	Trivrit Avleham	3tsf ≈ 15 gram	Oral	
Samsarjana Krama	Regulatory dietary regimen according to type of Shuddhi (here, Madhyama)				
1	6/05/2023	Morning (7AM)	Warm Water		
		Evening (7PM)	Peya (Rice+14X Water)		
2	7/05/2023	Morning (7AM)	Peya (Rice+14X Water)		
		Evening (7PM)	Vilepi (Rice+6X Water)		
3	8/05/2023	Morning (7AM)	Vilepi (Rice+6X Water)		
		Evening (7PM)	Akrut Yush (Dal+16X Water)		
4	9/05/2023	Morning (7AM)	Krut Yush (Dal+16X Water+Spices)		
		Evening (7PM)	Akrut Mamsa rasa (Mamsa+ 4X Water)		

Physical and systemic examinations revealed no abnormalities.

His tongue was coated, suggesting the presence of Saam Dosh in the body. The patient had no signs of pallor, cyanosis, or clubbing.

Rugna Pariksha:

- | | |
|-----------------------------|---|
| 1.Nadi- Kapha Pradhan Pitta | 8. Sparsha- Snighdha |
| 2.Mala- Samyaka | 9. Druka- Prakruta |
| 3.Mutra- Samyaka | 10. Akroti- Madhyam |
| 4.Shabd- Prakruta | 11. Jihva- Saam |
| 5.Kshuda- Prakruta | 12. Nidra- Akhandit |
| 6.Trushna- Prakruta | 13. Koshtha- Madhyam |
| 7.Agni- Madhyam | 14. Addiction- Smoking (since an early age) |

Diagnostic assessment

The couple had no issues for 5 years even after periodic unprotected intercourse. According to the reports of semen analysis done on 24/02/2023, the sperm count was 8 million/mL (suggestive of mild to moderate Oligospermia), along with low motility of sperms 15% (Fig. 1) (Table 2). The examination of the patient revealed no other abnormalities, as discussed in the section above. The semen analysis was repeated before and after the treatment regimen, which showed a marked improvement in the sperm count.

5	10/05/2023	Morning (7AM)	Krut Mamsa rasa (Mamsa+ 4X Water+Spices)	
		Evening (7PM)	Normal Food	
Vajikarana-Brimhana	16/05/2023 to 13/08/2023	Tab. Makardhwaja	125 mg 1 tablet once a day	Oral
		Tab. Shilappravang	250 mg 1 tablet twice a day	Oral
		Ashwagandharishta	10mL twice a day	Oral
		Ashwagandha Ghana Vati	250 mg 2 tablets twice a day	Oral

Agni Dipana and Aam Pachana

The treatment was initiated by giving the patient medications that would aid *Agni Dipana* and *Pachana* of *Saam Doshas* in the body. So, *Chitrakadi Vati* 250mg (2 tablets twice a day), *Aampachaka Vati* 250mg (2 tablets twice a day) & *Arogyavardhini Vati* 250mg (2 tablets twice a day) were given for this purpose (8)(9) (10). Along with it, as the patient showed symptom of generalised weakness *Brimhana* (nourishing) and *Vajikarana* (aphrodisiac) medicines were also advised; *Vrishya* Capsule 500mg (2 capsules twice a day) for a period of seven days was started. The patient then skipped the treatment for a while after his second follow up and came back to the OPD after about 1.5 months later in April 2023. His *Dipana* and *Pachana* were re-initiated for a period of 7 days from 25th April to 1st March after which internal *Snehapana* was given before *Virechana*.

Snehapana and Virechana

The patient took *Ashwagandha Ghrith* in an ascending order of dosage per day (25ml, 50mL, 75mL, 100mL & 150mL) since the patient had a *Madhyam Koshtha* and *Agni*. Later his *Snehana* (medicated oleation) and *Swedana* (sudation therapy) were initiated continuously for 3 days. He was admitted to the male ward on 5th May 2023 and was given *Virechana* (medicated purgation) medication (*Trivrit Avleham*; 3 teaspoonfuls ≈ 15gram) and monitored thoroughly. The patient had *madhayama shuddhi* (medium purification) with about 16 vega (number of bouts of stool) in total along with *Kaphant Shuddhi* (*Kapha dosha* on end point of purgation) (11).

Vajikarana and Brimhana

A proper *Samsarjana Krama* regimen was followed for 5 days since the patient had a *Madhyam Shuddhi* (Table 1). He was later discharged with proper *Pathya-Apathya* instructions along with *Vajikarana* (aphrodisiac) and *Brimhana* (nourishing) medicines: *Tab. Makardhwaja* (1 tablet once a day), *Tab. Shilappravang* (1 tablet twice a day), *Ashwagandharishta* (10mL twice a day) and *Ashwagandha Ghana Vati* 250mg (2 tablets twice a day) for a period of about 3 months with suggestive follow ups in between.

The table below shows the whole set of procedures, timeline & medications along with dietary indications implemented in the treatment protocol.

Pathya-Apathya

Instruction on lifestyle, activities & what to eat along with dietary restrictions were given to the patient.

Pathya: *Gehu* (Wheat), *Jowar* (Barley/Sorghum), *Bajra* (Pearl Millet), *Moong Dal*, *Chanak* (Chickpea), *Fish*, *Bathua* (*Chenopodium album*), *Lauki* (Gourd), *Palak* (Spinach), *Rasona* (Garlic), *Palandu* (Onion), *Kadali* (Banana), *Karjur* (Dates), *Narikel* (Coconut), *Amra* (Mango), *Payas* (Milk), *Dadhi* (Curd), *Ghee*, *Ikshu* (Sugarcane), *Guda* (Jaggery), *Stress free*, *Brisk Walking*, *Massage*, etc.

Apathya: *Excessive Kshara-Salt*, *Lakuch* (Monkey Jack), *Chavya* (Long pepper), *Asafoetida*, *Rajmasa* (Kidney beans), *Kulattha* (Horse gram), *Shimbi* (Flat Beans), *Gram*, *Maricha* (Black Pepper), *Overindulgence in copulation*, *Inhibiting natural urges specially urine and semen*, *Stress*, *Hunger*, *Excessive Work*, etc.

Table 2: Table showing medications used, their contents and probable mode of action

Drug	Contents	Mode of Action
<i>Aampachaka Vati</i>	<i>Sunthi</i> (<i>Zingiber officinale</i>), <i>Pippali</i> (<i>Piper longum</i>), <i>Kali Mirch</i> (<i>piper nigrum</i>), <i>Haritiki</i> (<i>terminalia chebula</i>), <i>Shuddha Kucchala</i> (<i>Purified Strychnos nux-vomica</i>), <i>Shuddha Hing</i> (<i>Purified Ferula assafoetida</i>), <i>Shuddha Gandhak</i> (<i>Purified Sulphur</i>), <i>Saindhava Lavana</i> (<i>Sodium Chloride</i>) & <i>Nimbu Swaras</i> (<i>Citrus limon</i>)	The formulation is specially for <i>Agni Dipana</i> and <i>Aampachana</i> due to <i>Ushna Virya</i> of all the ingredients present in it. All the ingredients belong to <i>Dipaniya-Pachniya Mahakashaya</i> . (9)
<i>Chitrakadi Vati</i>	<i>Chitraka</i> (<i>Plumbago zeylanica</i>), <i>Pippali Moola</i> (<i>piper longum</i>), <i>Yavakshara</i> (<i>Potassium Carbonate</i>), <i>Sajjikshara</i> (<i>Sodium Carbonate</i>), <i>Panch Lavana</i> (<i>Saindhava</i> [Rock Salt; <i>Sodium Chloride</i>], <i>Samudra</i> [<i>Sodium Chloride</i>], <i>Bida</i> [<i>Ammonium Chloride</i>], <i>Sauvarchala</i> [<i>Potassium Nitrate</i>] & <i>Romaka</i> [<i>Earthen Salt</i>]), <i>Sunthi</i> (<i>Zingiber officinale</i>), <i>Maricha</i> , <i>Pippali</i> (<i>Piper longum</i>), <i>Hingu</i> (<i>Ferula assafoetida</i>), <i>Ajmoda</i> (<i>Apium graveolens</i>), <i>Chavya</i> (<i>Piper retrofractum</i>) & <i>Dadima</i> (<i>Punica granatum</i> Linn)	A well-known drug to increase digestive fire and helps in managing the condition that occurs due to formation of <i>Ama dosha</i> . All the drugs mentioned work by their <i>Ushna Virya</i> and <i>Tikshna guna</i> due to which it helps in <i>Agni Dipana-Pachana</i> and has <i>anulomaka</i> properties as well. (8)

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<p><i>Aarogyavardhini Vati</i></p>	<p><i>Triphala (Amalaki [Embllica officinalis], Haritiki [Terminalia chebula], Vibhitaki [Terminalia bellerica]), Shilajatu (Asphaltum punjabianum), Shuddha Guggul (Purified Commiphora mukul), Chitrakamool (Plumbago indica), Katuki (Picororhiza kurroa), Shuddha Parada (Purified Mercury), Shuddha Gandhaka (Purified Sulphur), Loha Bhasma (Calcined Iron), Tamra Bhasma (Calcined Copper), Abhraka Bhasma (Calcined Mica) & Nimba Swaras (Azadirachta indica)</i></p>	<p>It is a Tridosha Shamaka drug. It has been indicated in several metabolic disorders, hyperlipidemic actions and several skin disorders. It has also been proven to have free radicle scavenging properties. (10)</p>
<p><i>Vrishya Capsule</i></p>	<p><i>Ashwagandha (Withania somnifera), Shatavari (Asparagus racemosus), Kawach Beeja (Mucuna pruriens), Nagarmotha (Cyperus scariosus), Shuddha Shilajatu (Purified Asphaltum punjabianum) & Vanga Bhasma (Tin Dioxide)</i></p>	<p>Kawach Beeja, Shatavari, Ashwagandha, Shilajatu etc are some of the key ingredients in this capsule. All are proven to provide aphrodisiac benefits (12)(13).</p>
<p><i>Ashwagandha Ghrit</i></p>	<p><i>Ashwagandha (Withania somnifera), Goghrit (Clarified butter from cow), Godugdha (Milk from cow), Triphala (Amalaki [Embllica officinalis], Haritiki [Terminalia chebula], Vibhitaki [Terminalia bellerica]), Haridra (Curcuma longa), Musta (Cyperus rotundus) & Nimbu Swaras (Citrus limon)</i></p>	<p>Ashwagandha is a well-known Rasayana-Vajikarana drug. The chemical composition suggests having a significant anti-anxiety effect and is known to support immunomodulatory actions (14). In Ayurveda, it is a widely used drug with its many clinical advantages like Balya, Brimhana, Shukrala, psychotropic activity to name a few. It is both a Rasayana and Shukrala dravya according to its Prabhava.</p>
<p><i>Trivrit Avleham</i></p>	<p><i>Trivrit (Operculina turpethum), Tamala Patra (Cinnamomum tamala), Twak (Cinnamomum cassia), Ela (Elettaria cardamomum), Madhu (Honey) & Khandsharkara (Rock candy)</i></p>	<p>It is one of the most used drugs for Virechana in Ayurveda. Aids in expulsion of dosha accumulated in the Kosta. (15)</p>
<p><i>Tab. Makardhwaja</i></p>	<p><i>Makardhwaja (Shuddha Swarna [Purified Gold], Shuddha Parada [Purified Mercury], Shuddha Gandhaka [Purified Sulphur], Karpasa Swaras [Gossypium herbaceum], Kumari Swaras {Aloe vera}, Jatiphala (Myristica fragrans), Kali Mirch (Piper nigrum), Karpur (Camphur; Cinnamomu camphora) & Kasturi (Deer musk)</i></p>	<p>Containing a combination of purified Swarna (Gold), Parada (Mercury) & Gandhaka (Sulphur) (Makardhwaja), along with several other ingredients like Jatiphala, Kasturi, etc. It is used for its aphrodisiac ability and is known to increase sexual potency (16). The drugs collectively help in the production of Shukra dhatu by initiating spermatogenesis via Sertoli cells. It also helps in increasing dhataavagni of shukra dhatu due to contents like Jatiphala and Kali Mirch (17).</p>
<p><i>Tab. Shilapravang</i></p>	<p><i>Shuddha Shilajatu (Purified Asphaltum punjabianum), Praval Pishti (Calcium carbonate, Magnesium, trace elements), Vanga Bhasma (Tin oxide), Swarna Makshika Bhasma (Calcined Copper pyrite), Mukta Pishti (Calcium Carbonate & Conchiolin), Guduchi Satva (Tinospora cordifolia), Ela (Elettaria cardamomum), Vanshlochana (Bamboo silica), Karpura (Camphor) & Gokshura (Tribulus terrestris)</i></p>	<p>This medication is a well-known Aphrodisiac and is also suggestive of improving blood circulation due to its contents like Ashwagandha and Shatavari (18). The collection of ingredients is believed to stimulate the production of androgens. Also, the medication is known to have antioxidant and hormone regulating properties. Thus, removing the harmful free radicals from the body, present due to excessive smoking along with shukra dhataavagni vriddhi (19).</p>
<p><i>Ashwagandh-arishta</i></p>	<p><i>Ashwagandha (Withania somnifera), Museli (Chlorophytum borivilianum), Haridradwey (Haridra [Curcuma longa], Daruharidra [Berberis aristate]), Manjistha (Rubia cordifolia), Haritaki (Terminalia chebula), Mulethi (Glycyrrhiza glabra), Rasna (Pluchea lanceolata), Vidarikand (Pueraria tuberosa), Arjun Twak (Terminalia arjuna), Nagarmotha (Cyperus scariosus), Shyamala (Ichnocarpus frutescens), Vacha (Acorus calamus), Chandandwey (Santalum album), Chitrakamoola (Plumbago indica), Trikatu, Trimad (Musta [Cyperus rotundus], Chitraka [Plumbago zeylanica], Vidanga [Embelia ribes]), Nagakesar (Mesua ferrea) & Priyangu (Callicarpa macrophylla)</i></p>	<p>An Aphrodisiac, which helps to maintain vigor, vitality & debility. It is known to work on loss of libido, insomnia and gives strength to the body, according to some recent studies (20).</p>
<p><i>Ashwagandha Ghana Vati</i></p>	<p><i>Ashwagandha (Withania somnifera)</i></p>	<p>Ashwagandha is a well-known Rasayana-Vajikarana drug. The chemical composition suggests having a significant anti-anxiety effect and is known to support immunomodulatory actions (21). In Ayurveda, it is a widely used drug with its many clinical advantages like Balya, Brimhana, Shukrala, psychotropic activity to name a few. It is both a Rasayana and Shukrala dravya according to its Prabhava.</p>

Follow up and Outcomes

Table 3: Semen Routine Analysis before and after the treatment

Semen Routine Analysis	Before Treatment	After Treatment
Date	24-2-2023	13-8-2023
Volume	2MI	2.5mL
Reaction	Alkaline	Alkaline
Fructose	Present	Present
Sperm Count	08 mil/mL	51 mil/mL
Sperm Motility	15%	62%
Pus Cells	Occasional	0-1 /hpf
Comment	Oligospermia	Within Normal Limit

Semen Analysis Report



Fig. 1.: Semen Analysis Report- Before Treatment

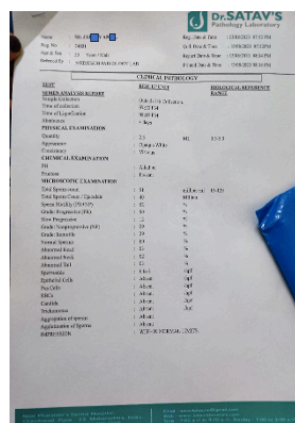


Fig. 2.: Semen Analysis Report- After Treatment

Discussion

A lower sperm count along with low sperm motility which was suggestive of oligospermia, was alleviated after a successful Ayurvedic intervention of about 5 months. The patient had peculiar signs and symptoms of *Shukrakshaya* which were *Klaibya* (infertility), *Daurbalya* (general debility) & *Shrama* (fatigue). According to Ayurveda, there was a definitive *anulomaka Kshaya* of *Shukra Dhatu* observed in the subject. Also, as per the history given by the subject, he had been addicted to smoking since an early age. Prolonged smoking, supposedly, causes formation of unstable free radicals which have the capability of causing biological damage in the body (22). Nicotine has been directly linked with causing reproductive toxicity shown by decline in testosterone level, changes in the sperm characteristics, atrophy and degenerative alterations and perturbations of spermatogenesis by increase in interstitial space and Leydig cells reduction (23).

The approach was initiated by administering the patient with *Dipana* and *Pachana* medications. Here, *Chitrakadi Vati* and *Aampachaka Vati* helped in increasing the digestive fire of the patient along with digesting the untoward existing *Aam* in the body.

For *Shukra dosha* management, *Shodhana* (*Virechana*) was planned. *Abhyantara Snehana* and *Swedana* therapy was initiated as per the protocol. *Ashwagandha Ghrith* was taken in an ascending dose for a period of 5 days. It was chosen as a drug for internal oleation due to its aphrodisiac property and the tendency to nourish (*Balya*) the body at *Dhatu* level. Proper *Snehana*

in a patient is suggested to provide *Agnideepan* (Increase in digestive fire), *Brimhana* (strength), *Shukravardhana*, etc. *Swedana* liquifies the *doshas* and brings them to the *kostha* for proper expulsion of *dosha* during *Virechana*.

For *Virechana* this *Trivrit leham* was used (3-teaspoonful≈15 gram). Patient had a *Madhyam Shuddhi* with about 16 Vega in total along with *Kaphant*. He was later given *Samsarjana Krama* (regulated dietary regimen), for a period of 5 days. *Shodhana* therapies are suggested by Acharyas before initiating the patient with *Vajikarana* drugs. Essentially, *shrotoshuddhi* ensures maximum effect of *Vajikarana* drugs for the patient (24).

Conclusion

A significant improvement was observed in the sperm count along with the motility of the sperms, changing the condition of the patient from Oligospermia to one within normal limits. An improvement in his general signs and symptoms were also observed just after the initial *Dipana* and *Pachana*. *Shodhana* was done and later *Vajikarana* and *Shamana* medications were started for about 3 months during which there was a marked difference in the variables of semen analysis report. The general condition of the patient was also improved, along with improvement in the reports that now suggested the condition of the patient as normal.

Future Scope: In conclusion, an integrated (*Shamana* & *Shodhana*) Ayurvedic treatment approach can be effectively implemented in managing cases of Oligospermia with ease. Time and again it has shown its consistency in improving the condition of the patients suffering from *Shukradosha*. Since there are ascending incidences of fecundity today, documented cases like these will help Ayurveda to be established as a mainstream treatment modality with the current system of medicine, & to create the best possible cure for the patient in such cases. Patients will have more treatment options to choose from, hence reducing the need for more invasive treatments. In turn this will make Ayurveda to be more accessible and acceptable. This will also help to terminate the attached taboo of Ayurveda being a slow mode of therapeutics. Potential for integration with the modern technologies will also provide a comprehensive approach to fertility and improving reproductive health.

Challenges Faced: Analysis could not be maintained from the same diagnostic centre before and after the treatment due to patient’s personal issues.

Patient’s perspective

The patient stated that he had never imagined such a positive outcome so soon. The amount of time he invested in searching for other mainstream treatments which proved to be costly & ineffective, Ayurveda showed consistent outcome from the beginning, during the whole course of the treatment process, there were no side effects and there was a significant improvement at every stage of the treatment.

Informed Consent: The patient gave permission for this case to be published.

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