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Clinical Outcome of Severe Oligoasthenoteratozoospermia (OAT) following Ayurvedic Treatment: A Single Case Report

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ABSTRACT:

Severe oligoasthenoteratozoospermia (OAT) is a significant cause of male infertility, marked by reduced sperm concentration, poor motility, and abnormal morphology. This single case report describes a 31-year-old male with primary infertility who presented with severe OAT, evidenced by a sperm concentration of 7 × 10^6/mL, total motility below 12%, less than 4% normal morphology, delayed liquefaction time, high viscosity, and slightly alkaline semen p^H. The patient underwent individualized Ayurvedic management for 3 months duration focused on correcting *Dosha* (body humors) imbalance, enhancing *Agni* (digestive fire), and nourishing *Shukra Dhatu (*sperm) through *Shodhana* (purification) and *Shamana* (pacification) therapies specially focused on *Vrushya* (aphrodisiac) and *Rasayana* (rejuvenate) therapies. Post-treatment semen analysis revealed significant improvement in sperm concentration, motility, morphology, and seminal characteristics, with no adverse effects reported. After follow-up the couple conceived successfully. These findings suggest that Ayurvedic intervention may offer a holistic and non-invasive therapeutic approach for managing severe OAT and larger controlled clinical studies are required to validate these observations and establish evidence-based Ayurvedic treatment protocols.

KEYWORDS: Ayurveda, Oligoasthenoteratozoospermia, Semen analysis, Male infertility, *Shukradushti*.

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INTRODUCTION:

Oligoasthenoteratozoospermia (OAT), with abnormalities in sperm count less than 15 million sperm per milliliter (mL) of ejaculate, motility and morphology, is considered as one of the most common causes of infertility generally defined as significantly reducing the chances of fertilizing an egg. Due to the harmful factors such as life pressures, worsening environments, and food contamination, the incidence of infertility has increased annually worldwide. Statistical results show that the infertility rate has reached 15% among people of childbearing age, with 50% of cases attributable to male infertility.[1] It impacts 15% of all couples worldwide and approximately 40–50% of those are due to male factor infertility. Globally, approximately 1 male in every 10 suffers from infertility or subfertility, and 10–20% of all infertile men have a complete absence of sperm in their ejaculate, also known as azoospermia.[2] Male factor infertility may result from pre-testicular, testicular, or post-testicular disorders. Semen volume, viscosity, leucocyte count, pH, sperm concentration, count, motility, and morphology are all problems that typically result from these diseases. Seminal fluid analysis thus offers some insight into the underlying pathological issues of male infertility and can be employed as a surrogate measure of male fecundity. As a result, semen analysis continues to be a crucial, impartial, affordable, and accessible way to assess male factor infertility.[3] After three to seven days of sexual abstinence, semen samples were obtained by self-masturbation at home or close to the laboratory. To guarantee thorough collection, precise instructions were given, and any sample loss was reported. For a precise evaluation, two or three samples were taken because semen parameters differ. Samples were gathered in hygienic, non-toxic containers and kept between 20 and 37 °C. Non-toxic condoms were used instead of latex condoms when masturbation was not practical. Following stringent safety and quality control procedures, samples were delivered in less than an hour and analyzed in accordance with WHO laboratory guidelines.[4] There is limited scientific evidence evaluating the efficacy of a standardized Ayurvedic treatment protocol in the management of Oligoasthenoteratozoospermia. Hence, this study aims to assess the effectiveness of Ayurvedic treatment using objective semen parameters.

CASE HISTORY:

A 31 year old male patient presented to the clinic with a presenting complaint of inability to conceive within past two years, despite regular unprotected marital life. He was diagnosed as having oligoasthenoteratozoospermia,
confirmed by Seminal Fluid Analysis. There was no history of erectile dysfunction, premature ejaculation or loss of libido. His spouse has undergone gynecological examination and reported as normal.

Past Medical History: The patient had no significant history of Diabetes mellitus, Hypertension, Mumps and Sexually transmitted diseases (STDs).

Past Medication History: There was no history on past medication, alcohol intake, smoking, or exposure to occupational toxins or radiation.

Social History: He has sleep disturbances with less amount of sleep due to the workload.

On Examination:

The patient had stable vital signs and a moderate build and level of nutrition upon general examination. No anomalies were found during the systemic examination. A local genital examination revealed normally descended testes with no palpable varicocele and normal development of secondary sexual traits.

On Investigations:

Semen analysis revealed reduced sperm concentration (7 x 10^6/mL) with reduced progressive and non-progressive motility (< 12%), 88% immotile and less normal morphology (< 4%) delayed liquefaction time (> 60 minutes), highly viscous, slightly alkaline (p^H 8) and normal volume (2.6 mL) in characteristics. Based on clinical findings, the patient was diagnosed as having severe oligoasthenoteratozoospermia (OAT syndrome) (*Ksheena Shukra* or *Shukra dushti* as per Ayurveda) and he was planned for the management with an Ayurvedic treatment protocol.

THERAPEUTIC INTERVENTION: The details are mentioned in table 1.

Patya-Apatya:

Dietary and behavioral recommendations were made and instructed to reduce the frequency of sexual encounters and wait three days between ejaculations. Advised to engage in regular exercise, a diet rich in protein and low in fat; whole grains and vegetables are beneficial for reproductive health or *Vrushya ahara* (aphrodisiac diet) as per Ayurveda. Hot, bitter, and astringent foods, caffeine consumption were avoided.

In this instance, effective counseling was essential to the successful treatment of oligoasthenoteratozoospermia. The nature of the illness, its causes, and the significance of following Ayurvedic treatment were discussed with the patient. A balanced *Pathya Ahara* (wholesome diet) that supports *Shukra Dhatu* (sperm) was emphasized, along with advice on changing one's lifestyle, managing stress, getting enough sleep, abstaining from alcohol, tobacco, and extreme heat. To avoid the heat of the testicles by wearing loose, cotton boxer shorts, avoiding hot baths, and losing extra weight. Advised for relaxation practices, such as yoga and meditation, to lower stress levels. Psychological reassurance enhanced treatment compliance, decreased infertility-related anxiety, and improved the overall therapy success.

RESULTS: The details are mentioned in table 2.

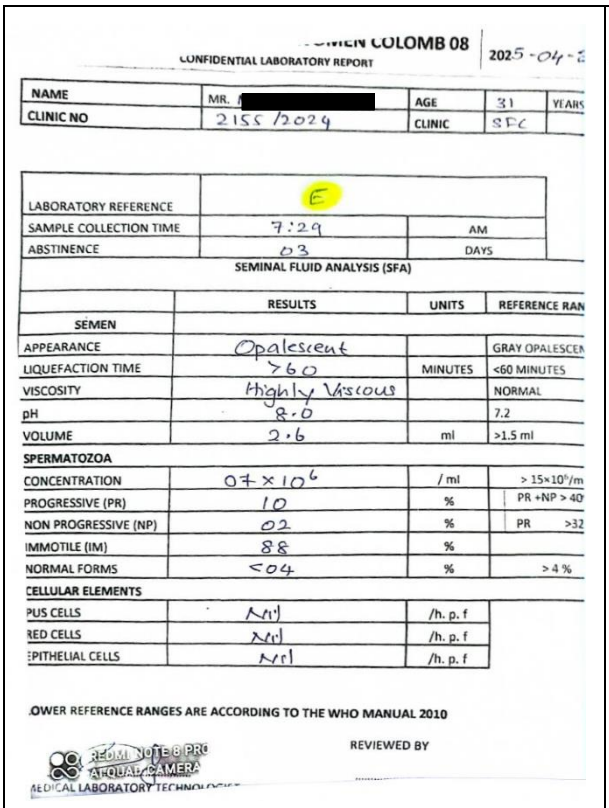
Table 1: Treatment plan and Time line

Date	Treatment principle	Treatment Plan	Time duration
2025.04.20	*Shodhana*	*Vasa draksha Kashaya* 120 mL morning and evening before meals	3 days
2025.04.23	*Raktashodhana*	*Madhuyasti nishayugma Kashaya* 120 mL morning and evening before meals	10 days
		Gokshuradi guggulu 2 pills with lukewarm water morning and evening	
2025.05.04	*Vrushya*	*Mashabala shukashimbi Kashaya + Rasana* 120 mL morning and evening before meals	10 days
2025.05.14		*Ashwagandha choorna* 2 tsp with milk morning and evening	01 month
		Penela amukkara vati 2 pills + *Gokshuradi guggulu* 2 pills with lukewarm water morning and evening	
2025.06.13	*Rasayana*	*Ashwagandha rasayana* 1 tsp with milk morning and evening	01 1/2 month
	Follow up with counselling sessions		

Table 2: Seminal fluid Analysis

Feature	Before treatment	After treatment	Remarks
Semen			
Appearance	Opaque	Opaque	-
Liquefaction time	>60min	20min	⬆
pH	Alkaline	Alkaline	-
Viscosity	High	Normal	⬆
Volume	2.6 mL	3 mL	⬆
Spermatozoa			

Sperm concentration		7×10^6/ mL	45×10^6/ mL	⬆
Progressive motility		10%	60%	⬆
Non – Progressive motility		02%	30%	⬆
Immotility		88%	10%	⬇
Normal forms	<4%	80%	⬆	



CONFIDENTIAL LABORATORY REPORT

NAME	MR. [redacted]	AGE	31 YEARS
CLINIC NO	2155/2024	CLINIC	SPC

LABORATORY REFERENCE	E	
SAMPLE COLLECTION TIME	7:29	AM
ABSTINENCE	03	DAYS

SEMINAL FLUID ANALYSIS (SFA)

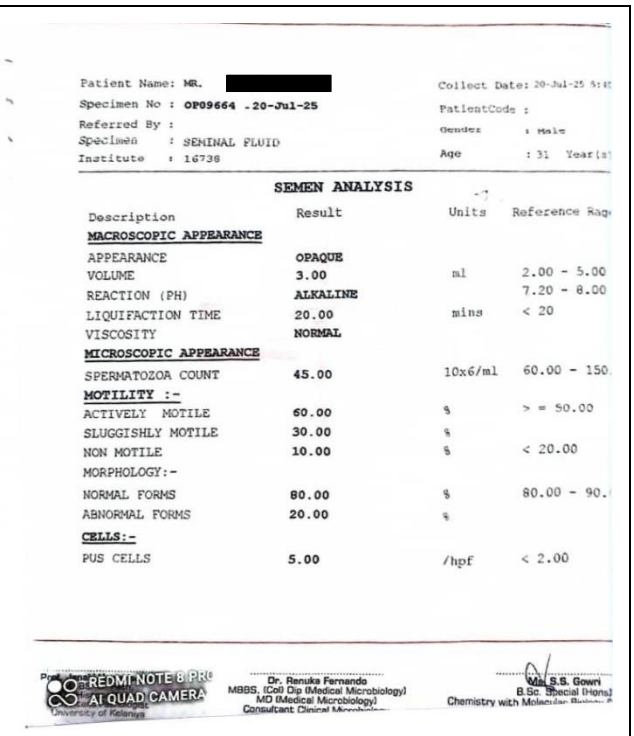
	RESULTS	UNITS	REFERENCE RAN
SEMEN			
APPEARANCE	Opalescent		GRAY OPALESCEN
LIQUEFACTION TIME	>60	MINUTES	<60 MINUTES
VISCOSITY	Highly Viscous		NORMAL
pH	8.0		7.2
VOLUME	2.6	ml	>1.5 ml
SPERMATOZOA			
CONCENTRATION	07×10^6	/ ml	> 15×10^6/m
PROGRESSIVE (PR)	10	%	PR +NP > 40
NON PROGRESSIVE (NP)	02	%	PR >32
IMMOTILE (IM)	88	%	
NORMAL FORMS	<04	%	> 4 %
CELLULAR ELEMENTS			
PUS CELLS	Nil	/h. p. f	
RED CELLS	Nil	/h. p. f	
EPITHELIAL CELLS	Nil	/h. p. f	

LOWER REFERENCE RANGES ARE ACCORDING TO THE WHO MANUAL 2010

REVIEWED BY

REDMI NOTE 8 PRO AI QUAD CAMERA

MEDICAL LABORATORY TECHNOLOGIST



Patient Name: MR. [redacted]
Specimen No : OP09664 .20-Jul-25
Referred By :
Specimen : SEMINAL FLUID
Institute : 16738

Collect Date: 20-Jul-25
PatientCode :
Gender : Male
Age : 31 Year(s)

SEMEN ANALYSIS

Description	Result	Units	Reference Rag
MACROSCOPIC APPEARANCE			
APPEARANCE	OPAQUE		
VOLUME	3.00	ml	2.00 - 5.00
REACTION (PH)	ALKALINE		7.20 - 8.00
LIQUIFACTION TIME	20.00	mins	< 20
VISCOSITY	NORMAL		
MICROSCOPIC APPEARANCE			
SPERMATOZOA COUNT	45.00	10x6/ml	60.00 - 150.
MOTILITY :-			
ACTIVELY MOTILE	60.00	%	> = 50.00
SLUGGISHLY MOTILE	30.00	%	
NON MOTILE	10.00	%	< 20.00
MORPHOLOGY:-			
NORMAL FORMS	80.00	%	80.00 - 90.
ABNORMAL FORMS	20.00	%	
CELLS:-			
PUS CELLS	5.00	/hpf	< 2.00

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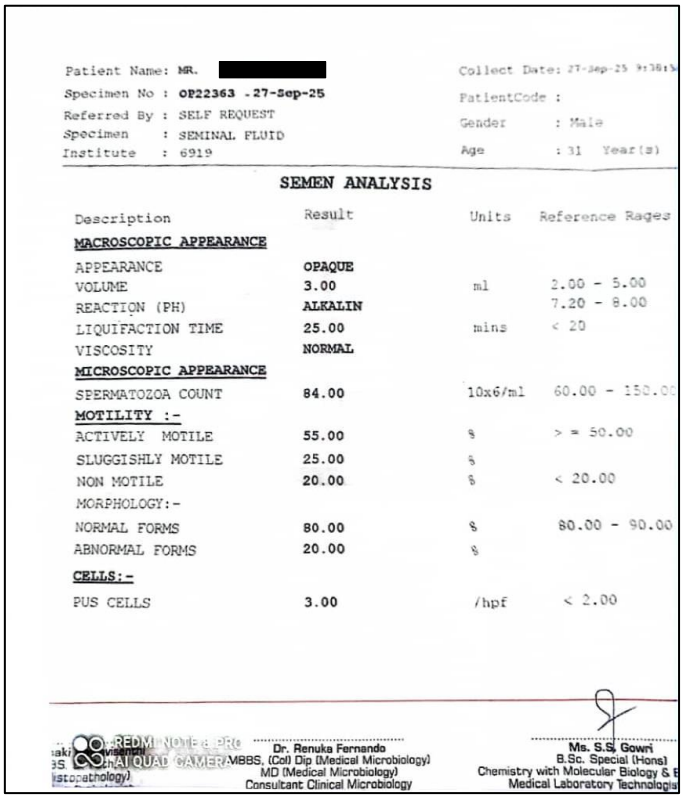
Semen analysis before treatment	**Semen analysis after treatment**

Figure-1: Seminal Fluid Analysis before and after treatment



Patient Name: MR. [redacted]
Specimen No : OP22363 - 27-Sep-25
Referred By : SELF REQUEST
Specimen : SEMINAL FLUID
Institute : 6919

Collect Date: 27-Sep-25
PatientCode :
Gender : Male
Age : 31 Year(s)

SEMEN ANALYSIS

Description	Result	Units	Reference Rages
MACROSCOPIC APPEARANCE			
APPEARANCE	**OPAQUE**		
VOLUME	**3.00**	ml	2.00 - 5.00
REACTION (PH)	**ALKALIN**		7.20 - 8.00
LIQUIFACTION TIME	**25.00**	mins	< 20
VISCOSITY	**NORMAL**		
MICROSCOPIC APPEARANCE			
SPERMATOZOA COUNT	**84.00**	10x6/ml	60.00 - 150.00
MOTILITY :-			
ACTIVELY MOTILE	**55.00**	%	> = 50.00
SLUGGISHLY MOTILE	**25.00**	%	
NON MOTILE	**20.00**	%	< 20.00
MORPHOLOGY:-			
NORMAL FORMS	**80.00**	%	80.00 - 90.00
ABNORMAL FORMS	**20.00**	%	
CELLS:-			
PUS CELLS	**3.00**	/hpf	< 2.00

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Figure-2: Semen analysis after 2 months follow-up with diet and regimen

DISCUSSION:

Sperm count, motility and normal forms are typically found to be low in Oligoasthenoteratozoospermia.

Increasing sperm count and motility should be the goals of treatment for oligoasthenoteratozoospermia.

Shukradushti (semen defects) is the causative factor for the infertility.[5] *Ksheenashukra* is a type of *Shukradushti* (semen defects) which can be correlated to oligospermia. The treatment of *Ksheenashukra* (oligospermia) mainly aims at *Shukrajanaka* and *Shukrapravartaka* in-terms of increasing the sperm count and motility by using *Vajeekarana Dravya* (Aphrodisiac medicine).[6] These medications, which include *Katu, Tikta Rasa* and *Ushna Veerya*, primarily benefit in the correction of *Agnidushti* as well as *Vata* and *Mala Anulomana*.[7]

It focuses on all aspects like *Aahara* (Diet), *Vihara* (Lifestyle) that play an important role in manifestation of any pathology. In the present case, Ayurvedic principles were applied in the management of *Shukra Dushti*. Following the completion of appropriate treatment based on Ayurvedic principles, along with prescribed dietary modifications and regulation of daily regimen, a significant improvement was observed in semen parameters, particularly sperm count and sperm motility (Figure 1). The improvement in the status of *Dhatus*, along with the therapeutic action of the administered formulations, also resulted in enhanced sexual desire, increased duration of

coitus, attainment of orgasm, and overall sexual satisfaction, in addition to the observed improvement in sperm count and motility.[8]

Based on treatment principles *Shodhana* (purifying), *Shamana* (pacifying), *Shukrajanana* (semen generating) and *Tarpana cikitsa* (nourishing treatment) have been applied. In *Shodhana* stage, *Vasa draksha Kashaya* has been applied to purify the body. *Shodhana* process involves the purification as well as reduction in the levels of toxic principles which sometimes results in an enhanced therapeutic efficacy. While *Draksha (Vitis vinifera)* supports *Agni Deepana* (induce enzymes) and functions as a mild *Anulomana* (laxative), *Vasa (Justicia adhatoda)* possesses *Sheeta Veerya* (cold potency) and *Tikta–Kashaya Rasa* (bitter and astringent tastes), which help purify *Rakta* and calm vitiated *Pitta also Abhaya (Terminalia chebula) with Anulomana* (laxative) properties. This preparatory stage improves the effectiveness of later treatments and helps restore metabolic balance. After that *Madhuyashti Nisha yugma Kashaya* has been used to purify blood. As per Ayurveda, *Rakta* (blood) is the main functional part for hormone, hence to balance hormone level blood purification is essential.[8] Along with *Gokshuradhi guggulu*, has given as a *Jeevaniya dravya* which has *Ojovardhaka guna* (nourishes vital essence of the body). *Tribulus terrestris L. (Nerenchi)* is the main active ingredient plays a *saptadhatu vardhaka (*promotes body tissues) property in *gokshuradi guggulu.* Following *shodhana* and *raktashodhana* stages, *Vrushya* medicine can be added in the next stage. In this level, those medications are given to enhance male sexual health, virility, fertility, and sperm quality (spermatogenesis) while promoting overall strength, vitality, and healthy progeny.[9] As semen generating and proper ejaculating medicines, *Aswagandha choorna, Penela amukkara vati* has been given with added supportive pills; *Gokshuradhi guggulu* to improve hormone imbalances. At the final stage, nourishing treatment has been applied with *Aswagandha rasayana*. *Rasayana* means rejuvenation therapy, focusing on enhancing vitality, longevity, immunity, and overall well-being by nourishing the body's tissues *(dhatus)* and optimizing cellular function, essentially fighting aging *(Jara)* and disease through specific herbs, foods, lifestyle, and purification. It aims for a long, healthy, youthful life with sharp mind, lustrous complexion, and strong senses, achieved by improving the body's fundamental essence *(rasa)* and cellular channels *(ayana).*[10]

After follow up of the case, and obtaining a new semen analysis, the sperm count has been markedly increased (84 x 10^6/mL) (Figure 2) with the evidence of success of the treatment protocol and the patient has been able to conceive successfully to have a baby.

CONCLUSION:

This case study shows that severe oligoasthenoteratozoospermia can significantly improve with Ayurvedic treatment. Sperm concentration, motility, and morphology, as well as general reproductive health, significantly improved after customized

Ayurvedic treatment targeted at improving *Agni* (digestive fire), correcting *Dosha* (body humors) imbalance, and boosting *Shukra Dhatu* (Sperm). These results imply that Ayurveda may provide a safe and useful supplemental treatment for male infertility, which calls for additional confirmation through more extensive, carefully monitored clinical trials.

Limitation of study:
Fertility outcomes and long-term follow-up were not evaluated. It is necessary to conduct larger, controlled studies.

Written informed consent:
All the patients selected for the study has been informed the nature of the study and written consent has been obtained**.**

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Conflict of interest: The author declares that there is no conflict of interest.

Guarantor*:* The corresponding author is the guarantor of this article and its contents.

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