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**Case study** 

### **RESOLVING AZOOSPERMIA (SHUKRA KSHAYA) WITH AN AYURVEDIC APPROACH**

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| Article info  | ABSTRACT  |
|---|---|
| Article History:  | Azoospermia, characterized by the absence of sperm in the ejaculate, is a significant   |
| Received: 05-03-2025                                    | contributor to male infertility. Traditional treatment approaches often combine hormonal  |
| Accepted: 11-04-2025                                    | therapies, surgical interventions and assisted reproductive techniques, yet not all cases   |
| Published: 15-05-2025                                   | resolve successfully. This paper explores a treatment approach using Ayurvedic therapies.   |
| KEYWORDS:   | The study focuses on a 37-year-old male diagnosed with azoospermia, initially presented   |
| Shukra Kshaya,<br>Azoospermia,<br>Ayurveda<br>medicines | with the symptoms of sleeplessness, fatigue and general weakness. The patient underwent a treatment regimen including Ayurvedic formulations over a period of six months. Post-treatment evaluations revealed significant improvements: total sperm concentration increased from nil to 28 million/ml, progressive motility improved to 50%, and sperm  |
|   | morphology normalized with 96% of sperm showing normal forms. Subjective symptoms<br>also showed remarkable improvement with the Insomnia Severity Index score reducing<br>from 18 to 8, and the Fatigue Severity Scale score reducing from 45 to 25. These findings<br>suggest that integrating Ayurvedic medicine with conventional treatments can effectively<br>enhance fertility outcomes and overall quality of life in patients with azoospermia. The<br>study advocates for further research through larger clinical trials to validate and potentially<br>standardize this integrative treatment approach. |

#### **INTRODUCTION**

Azoospermia, often correlated with Shukra Kshava in classical Avurvedic texts, represents a significant male reproductive anomaly, characterized by the complete absence of sperm in the ejaculate. In modern medicine, azoospermia affects approximately 1% of the male population and accounts for about 10-15% of cases of male infertility.<sup>[1]</sup> A comprehensive understanding of this condition from both contemporary and ancient perspectives is crucial for developing effective treatment strategies.

From an Avurvedic standpoint, ancient texts such as the 'Charaka Samhita' and 'Sushruta Samhita' elaborate on Shukra Dhatu (semen), emphasizing its role in reproduction and general vitality.<sup>[2]</sup> These scriptures categorize Shukra Dosha disturbances into various types, each having implications on fertility.



Ayurvedic scholars like Vagbhata in 'Ashtanga Hridayam' have also documented treatments ranging from Avurvedic treatments to dietary adjustments and lifestyle modifications aimed at rectifying the imbalanced *Doshas* that contribute to azoospermia.<sup>[3]</sup> highlight Previous works the relevance of Panchakarma (bio-purification procedures), particularly Basti (medicated enema) which is often recommended to tackle reproductive disorders.[4]

In terms of modern medical insights. azoospermia can be due either to an obstruction preventing sperm passage or a failure in sperm production, classified respectively as obstructive and non-obstructive azoospermia.<sup>[5]</sup> The pathophysiology behind non-obstructive azoospermia involves testicular dysfunction or hormonal imbalances inhibiting sperm development, whereas obstructive azoospermia is usually due to blockages in the ductal system. Epidemiologically, general risk factors include genetic conditions such as Klinefelter syndrome, previous infections, surgeries and lifestyle factors like smoking and exposure to toxins.

The Ayurveda aspect of azoospermia's pathogenesis or *Samprapti*, revolves around the imbalance in the *Vata* and *Pitta Doshas* along with *Dhatu kshaya* (depletion of tissues), particularly the *Shukra Dhatu*. According to the principles of Ayurveda, impairment in the diet and lifestyle that increases *Vata* and *Pitta* leads to the obstruction of the reproductive channels (*Strotas*) and thereby causes *Shukra Kshaya* (depletion of semen).<sup>[6]</sup> The restoration focuses on *Sodhana* (purification), *Shamana* (pacification) and the use of *Rasayana* (rejuvenation) formulations aimed at enhancing *Shukra Dhatu*.

Integrating these diverse viewpoints provides a holistic understanding of azoospermia and supports the formulation of a multifaceted treatment approach combining the strengths of both Ayurveda and Modern medicine.

# **Case Report**

#### **Patient History and Information**

The subject of this case study is a 37-year-old male recently diagnosed with azoospermia, presented with symptoms of sleeplessness, fatigue and general weakness. Despite these complaints, there was no significant family history concerning genetic diseases or fertility issues that could suggest a predisposition to reproductive disorders. The patient had no notable medical or surgical history that might correlate with his current diagnosis. However, it was important to note that the patient had a long-standing tobacco addiction, which could be, impactful reason, to established the links between tobacco use and reduced semen quality. He was a married man and had one child aged 13, suggesting that the onset of azoospermia occurred after the birth of his child.

#### **Diet and Lifestyle History**

The patient's diet was predominately reliant on processed foods with minimal intake of fresh fruits, vegetables and whole grains, which is not optimal for overall health and might have contributed to his symptoms. His lifestyle was sedentary, with minimal physical activity, which must have influenced his general feelings of fatigue and weakness. Furthermore, the patient reported erratic sleep patterns exacerbated by his job requirements that included irregular hours and high levels of stress. These elements combined illustrated a lifestyle that could potentially aggravate *Vata* and *Pitta doshas*, according to Ayurvedic principles, leading to the depletion (*Kshaya*) of *Shukra Dhatu* (reproductive tissue).

#### **Medicine History**

Previously, the patient had not pursued any significant treatment for infertility but had occasionally used over-the-counter slip aids and multivitamin supplements. He reported no prior use of prescribed allopathic or Ayurvedic medications related to fertility before his diagnosis.

**Surgical History:** The patient had no significant surgical history.

#### **Onset and Disease Progression**

The diagnosis of azoospermia was confirmed three months ago following an investigation into the couple's difficulty conceiving. Initial semen analysis revealed complete absence of spermatozoa in the ejaculate, leading to further assessments by a urologist specialized in male infertility. Subsequent examinations, including hormonal profiles were conducted to determine the subtype of azoospermia; however, these investigations did not indicate any obstructive or anatomical anomalies, hence suggested a non-obstructive azoospermia. This case study will explore the effects of selected Avurvedic treatments and their efficacy in managing and possibly reversing this patient's condition.

#### Vital Parameters

- **Body Mass Index (BMI):** The patient presents with a BMI of approximately 19.6 kg/m<sup>2</sup> suggestive of a normal BMI.
- Blood Pressure: 130/90 mmHg.
- Heart Rate: Regular, at 86 beats per minute.

# Samprapti of the Disease

Sukhradosha in Ayurveda refers to conditions stemming from disorders of the Shukra dhatu, which primarily affects reproductive health, manifesting as issues like infertility, menstrual irregularities, or impotency. The pathogenesis begins with causative factors such as improper diet, lifestyle, or psychological stress leading to an imbalance in the three Doshas- Vata, Pitta, and Kapha. This imbalance disrupts the Shukra dhatu (reproductive tissue), leading to its qualitative or quantitative decline. The impairment subsequently affects the Shukravaha Strotas, the channels responsible for transporting reproductive tissues, causing conditions such as obstructions, excessive activity or abnormal locations of reproductive components.

| Table 1: Samprapti Ghataka                         |  |  |  |
|--|--|--|--|
| Ghataka (Factor)                                   | Details  |  |  |
| Dosha Vata, Pitta, and Kapha                       |  |  |  |
| Dushya (Tissue)Primarily Shukra Dhatu              |  |  |  |
| Strotas (Channel) Shukravaha Strotas               |  |  |  |
| Srotodushti (Channel impairment type)              | Sanga (obstruction), Atipravritti (hyperactivity), Vimargagamana (ectopic movement), or Siragranthi (constriction) |  |  |
| Agni (Digestive/metabolic fire)                    | Dhatvagni, particularly Shukra Dhatvagni   |  |  |
| <i>Ama</i> (Toxic residue from improper digestion) | Accumulation of Ama  |  |  |
| Adhishthana (Primary site of disease)              | Reproductive organs  |  |  |
| Roga Marga (Pathway of disease)                    | Abhyantara Marga   |  |  |

#### **Ayurvedic Examination**

# Table 2: Ashtavidha Pariksha (Eight-fold Examination)

| S.No | Examination                        | Findings                     |
|------|------------------------------------|------------------------------|
| 1.   | Nadi (Pulse)                       | Vata- Pittaja                |
| 2.   | Mutra (Urine)                      | Ishat peeta                  |
| 3.   | Mala (Stool)                       | Abadh                        |
| 4.   | Jihva (Tongue)                     | Saam                         |
| 5.   | Shabda (Voice)                     | Spashta                      |
| 6.   | Sparsha (Touch)                    | An <mark>ushn</mark> asheeta |
| 7.   | Drik (Eyes)                        | Pra <mark>kri</mark> ta      |
| 8.   | Akriti (Appear <mark>an</mark> ce) | Avik <mark>ri</mark> ta      |

# Table 3: Dashavidha Pariksha (Ten-fold Examination)

| Sr.No | Examination MAPR                   | Findings             |
|-------|------------------------------------|----------------------|
| 1.    | Prakriti (Constitution)            | Vata Pitta           |
| 2.    | Vikriti (Imbalance)                | Vata Pittaja         |
| 3.    | Sara (Tissue excellence)           | Madhyam              |
| 4.    | Samhanana (Body build)             | Moderate             |
| 5.    | Pramana (Body proportions)         | Within normal limits |
| 6.    | Satmya (Adaptability)              | Moderate             |
| 7.    | Satva (Psychological strength)     | Madhyam              |
| 8.    | Ahara Shakti (Digestive strength)  | Madhyam              |
| 9.    | Vyayama Shakti (Exercise capacity) | Moderate             |
| 10.   | Vaya (Age)                         | Yuvavastha           |

# Systemic Examination

- **Cardiovascular and Respiratory Systems:** Both systems presented as normal with no abnormalities detected in heart rate, rhythm and lung sounds.
- **Gastrointestinal System:** Abdominal examination showed no signs of tenderness or masses, with normal bowel sounds.
- **Genitourinary System:** External genitalia and testes were normal in appearance and texture, with no palpable abnormalities.
- **Neurological System:** The patient was alert with fully intact cranial nerves, motor, sensory functions and symmetrical reflexes.
- Endocrine, Musculoskeletal and Dermatological Systems: No evidence of hormonal imbalances such as gynecomastia or abnormal hair distribution and no joint issues or skin lesions were observed.

### **Diagnostic Assessment**

#### Laboratory Results

- 1. Sperm Analysis Done on 08/07/24 s/o of Volume: 1.0 mL
  - a. Liquefaction time: 30 mins
  - b. Appearance: Viscous, whitish grey
  - c. pH: 7.8
  - d. Total Sperm Concentrate: Nil
  - e. Sperm Motility:
    - a. PR: Nil
    - b. NPM: Nil
    - c. NM: Nil
  - f. Sperm Viability: Nil
  - g. Sperm Morphology: Nil
  - h. Pus cells/WBC: 3%
  - i. Immature Germ cells: Nil
  - j. Debris: 2%

### Assessment Parameters Used in this Case Report Objective Parameters - Semen Analysis

- 1. Total Sperm Concentrate<sup>[7]</sup>
  - **Scale**: Count per millilitre (ml). Normal range is ≥ 20 million/mL.

# 2. Sperm Motility:

- Scale: Classified into:
  - PR (Progressive motility): Sperms moving actively, either linearly or in a large circle, ≥ 32%.
  - NPM (non-progressive motility): Sperms move but do not progress forward, ≥ 60%.
  - NM (Non-motile): Sperms that do not move, ≤ 75%.
- 3. Sperm Morphology<sup>[8]</sup>
- **Scale**: Percentage of sperms with normal morphology. Normal range is ≥ 1 million/mL.
- 4. Sperm Viability:
- **Scale**: Viability percentage. Normal is  $\ge 4\%$ .

# Subjective Parameters - Sleeplessness, Fatigue, and Weakness

# 1. Sleeplessness (Insomnia)<sup>[9]</sup>

- **Scale**: Insomnia Severity Index (ISI), a 7-item self-report questionnaire assessing the nature, severity and impact of insomnia. The total score categorizes insomnia severity.
- 2. Fatigue<sup>[10]</sup>
  - **Scale**: Fatigue Severity Scale (FSS), which has 9 statements that the patient rates from 1 (strongly disagree) to 7 (strongly agree) regarding their fatigue levels.

# 3. Weakness<sup>[11]</sup>

• **Scale**: Medical Research Council (MRC) Scale for Muscle Strength. This is a 6-point scale ranging from 0 (no muscle contraction) to 5 (normal strength).

#### **Therapeutic Intervention**

### I. Ayurvedic Diet Plan<sup>[12]</sup>

The dietary guidelines provided by Jeena Sikho Lifecare Limited Hospital included the following key commendations:

a. Foods to be avoided

- Do not consume wheat, refined food, milk and milk products, coffee and tea and packed food.
- Avoid eating after 8 PM.
- During solid consume as small bite and chew 32 times.

#### b. Hydration:

- During water intake, take sip by sip and drink slowly to ensure the amount of water intake each time.
- Drink about 2-3 liters of alkaline water 3 to 4 times throughout the day.
- Include Herbal tea, living water, and turmericinfused water part of your daily routine.
- Boil 4 liters water and reduce up to 2 liters and consume.

#### c. Millet Intake:

- Incorporate five types of millet into your diet: Foxtail (Setaria italica), Barnyard (Echinochloa esculenta), Little (Panicum sumatrense), Kodo (Paspalum scrobiculatum) and Browntop (Urochloa ramose).
- Use only steel cook wares for preparing the millets
- Cook the millets only using mustard oil.
- d. Meal Timing and Structure:
  - 1. Early Morning (5:45 AM): Herbal tea, curry leaves (1 leaf-1 min/5 leaves- 5 min) along with raw ginger and turmeric.
  - 2. Breakfast (9:00-10:00 AM): The patient had steamed fruits (seasonal), steamed sprouts (according to the season) and a fermented millet shake (4-5 types).
  - 3. Morning Snacks (11:00AM): The patient given red juice (150 ml) and soaked almonds.
  - 4. Lunch (12:30 PM 2:00 PM): The patient received Plate 1 and Plate 2. Plate 1 included a steamed salad, while Plate 2 with cooked millet-based dish.
  - 5. Evening Snacks (4:00 4:20 PM): Green juice (100-150ml) along with 4-5 almonds.
  - 6. Dinner (6:15-7:30 PM): The patient served a steamed salad, chutney, and soup, as plate 1, along with millet khichdi as Plate 2.
- e. Fasting
  - It is advised to observe one-day fasting.

#### f. Special Instructions

- Express gratitude to the divine before consuming food or drinks.
- Sit in Vajrasana (a yoga posture) after each meal.

- 10 minutes slow walk after every meal.
- g. Diet Types
  - The diet comprises salt-less solid, semi-solid and smoothie options.
  - Suggested foods included Herbal tea, red juice, green juice, a variety of steamed fruits, fermented millet shakes, soaked almonds and steamed salads.

# II. Lifestyle Recommendations

- (i) Include meditation for relaxation.
- (ii) Practice barefoot brisk walk for 30 minutes.
- (iii) Ensure 6-8 hours of quality sleep each night.
- (iv) Adhere to a structured daily routine.

### Medicines used in this Case

Following medicinal Treatment was given to the patient during the admission period

| Medications   | Dose           | Anupana                                       | Duration                          |
|---|----------------|---|-----------------------------------|
| <b>Dhatuposhak Capsule -</b> The Ingredients are <b>Chuna Shudh</b> is<br>purified limestone, known as Calcium carbonate. <b>Shankh<br/>Bhasam</b> is derived from conch shell, referred to as conch<br>shell ash. <b>Mukta Shukti</b> is made from the pearl oyster shell,<br>or Pinctada margaritifera. <b>Prawal Pishti</b> involves the use of<br>coral, scientifically recognized as Corallium rubrum.<br><b>Kapardika</b> refers to the Cowrie shell, identified as Cypraea<br>moneta. Lastly, <b>Loh</b> typically refers to iron, known in<br>scientific terms as Ferrum or iron oxide when oxidized. | 1 Cap BD       | Lukewarm<br>water<br>( <i>Koshna</i><br>Jala) | <i>Adhobhakta</i><br>(After meal) |
| Spermosurge Capsule - The Ingredients are Viddhadaru is<br>known scientifically as Argyreia nervosa, Gokshuru as<br>Tribulus terrestris, Jeevanti as Leptadenia reticulata,<br>Shailyeam (likely Parmelia perlata), Ashwagandha as<br>Withania somnifera, Kokilaksha as Hygrophila auriculata,<br>Vanya Kahu as Lactuca scariola, Kapikacchu as Mucuna<br>pruriens, Salam Panja as Dactylorhiza hatagirea, Bala as Sida<br>cordifolia, and Chopchini as Smilax china.   | 1 Cap BD       | Lukewarm<br>water<br>( <i>Koshna</i><br>Jala) | <i>Adhobhakta</i><br>(After meal) |
| <b>Ashwagandha ghan Vati</b> - Ashwagandha Ghan Vati is the<br>extract of Withania somnifera, commonly known as<br>Ashwagandha. The term "Ghan Vati" refers to tablets made<br>from concentrated Ayurvedic extracts, implying a more<br>potent formulation compared to those made from dried<br>powdered herbs alone.   | 1 Tab BD       | Lukewarm<br>water<br>( <i>Koshna</i><br>Jala) | Adhobhakta<br>(After meal)        |
| <b>Org. Shilajit Tab</b> - Shilajit <b>Tablets</b> encapsulate Shilajit, a resin-like substance sourced from mountain ranges like the Himalayas. Rich in <i>fulvic acid</i> and minerals, it's known in <i>Ayurveda</i> for boosting energy, enhancing vitality and offering anti-inflammatory and antioxidant benefits. These tablets are commonly used to improve stamina, supports male fertility, enhances cognitive functions and promotes overall wellness.   | 1 Tablet<br>BD | Lukewarm<br>water<br>( <i>Koshna</i><br>Jala) | <i>Adhobhakta</i><br>(After meal) |

# Table 5: Day 2,3 and 4 - 11/10/24, 11/11/24 and 02/01/24

| Medications           | Dose        | Anupana                      | Duration                |
|-----------------------|-------------|------------------------------|-------------------------|
| Dhatuposhak Capsule   | 1 Cap BD    | Lukewarm water (Koshna Jala) | Adhobhakta (After meal) |
| Spermosurge Capsule   | 1 Cap BD    | Lukewarm water (Koshna Jala) | Adhobhakta (After meal) |
| Ashwagandha ghan Vati | 1 Tab BD    | Lukewarm water (Koshna Jala) | Adhobhakta (After meal) |
| Org. Shilajit Tab     | 1 Tablet BD | Lukewarm water (Koshna Jala) | Adhobhakta (After meal) |

#### DISCUSSION

# **Follow-Up and Outcomes**

After 5 days oral Ayurvedic medicines and a follow-up of 3 months the results that were seen are

| Parameters              | Pre-Treatment<br>(08/07/2024) | Post-Treatment<br>(06/01/2024) |  |
|-------------------------|-------------------------------|--------------------------------|--|
| Total sperm concentrate | Nil                           | 28 mill/ml                     |  |
| Sperm motility          |                               |                                |  |
| PR                      | Nil                           | 50%                            |  |
| NPM                     | Nil                           | 40%                            |  |
| NM                      | Nil                           | 10%                            |  |
| Sperm viability         | Nil                           | 60%                            |  |
| Sperm morphology        | Nil                           | 96%                            |  |
| Pus cells/WBC           | 3 %                           | 4-6 %                          |  |
| Immature germ cells     | Nil                           | Nil                            |  |
| Debris                  | 2%                            | Nil                            |  |

#### Table 6: Outcomes - Objective Parameters

The changes in the subjective parameters that were observed are

| Table 7: Outcomes – Subj | ective Parameters |
|--------------------------|-------------------|
|--------------------------|-------------------|

| Parameters   | Pre-Treatment                                    | Post-Treatment   |
|--|--|--|
| Sleeplessness (Insomnia) -<br>Scale: Insomnia Severity Index (ISI)             | 18 (indicative of moderate insomnia)             | 8 (indicative of sub-threshold insomnia)                       |
| Fatigue<br>Scale: Fatigue Severity Scale (FSS)                                 | 45 (out of 63, representing significant fatigue) | 25 (a substantial reduction indicating less perceived fatigue) |
| Weakness<br>Scale: Medical Research Council (MRC)<br>Scale for Muscle Strength | 3 (moderate muscle strength)                     | 4 (good muscle strength)                                       |

# DISCUSSION

Azoospermia, identified in the classical Ayurvedic framework as *Shukra Kshaya*, is a challenging infertility issue marked by an absence of sperm in the ejaculate. In Ayurveda, disruptions in *Shukra Dhatu* (semen) are primarily attributed to imbalances in *Vata and Pitta Doshas*, which can stem from lifestyle factors such as poor diet, stress and exposure to toxins like tobacco. These imbalances are believed to obstruct the microchannels (*Strotas*) essential for sperm transport and production.

Modern medicine categorizes azoospermia into obstructive and non-obstructive types, which align well with Ayurvedic principles of physical blockages and deficiencies in biological processes, respectively. This categorization supports targeted treatment approaches, including surgeries, hormone therapy and assisted reproductive techniques.

The treatment administered in this case incorporated Ayurvedic formulations. Significant improvements were evident in the semen analysis results post-treatment. The total sperm concentrate saw a remarkable uptick from nil to 28 million/ml. Sperm motility greatly improved, with progressive motility (PR) at 50%, non-progressive motility (NPM) at 40%, and non-motile sperm reduced, to just 10%. Sperm viability also enhanced significantly to 60%. Perhaps most strikingly, morphology sperm normalized dramatically, with 96% of sperm showing indicator normal formsan of substantial improvements in reproductive health. However, there was an increase in pus cells/WBC from 3% to 4-6%, indicating a possible mild inflammatory response which could require further investigation.

The treatment approach also led to significant improvements in subjective health parameters related to sleep, fatigue and physical strength. Initially, the patient exhibited moderate insomnia with an Insomnia Severity Index (ISI) score of 18. Post-treatment, this score decreased to 8, shifting the condition to subthreshold insomnia and indicating a considerable reduction in sleep disturbances. Fatigue levels, as measured by the Fatigue Severity Scale (FSS), also improved notably. The pre-treatment score of 45 (indicative of significant fatigue) was reduced to 25 post-treatments, reflecting a substantial decrease in perceived fatigue levels. Moreover, there was an improvement in muscle strength, assessed via the Medical Research Council (MRC) Scale for Muscle Strength, which increased from a moderate score of 3 to a good strength score of 4. Collectively, these outcomes demonstrate the beneficial impacts of the

treatment on enhancing overall quality of life and physical health.

The mode of action of these formulations used in this case reports are *Dhatuposhak Capsule*: This formulation comprises minerals predominantly used to strengthen and nourish the body tissues (*Dhatus*). Ingredients like calcium carbonate from *Chuna Shudh*, conch shell ash, *Pinctada margaritifera* shell, *Corallium rubrum*, *Cypraea moneta* and *Ferrum*/iron oxide work collectively to enhance the quantity and quality of *Shukra Dhatu* (semen), crucial for addressing oligospermia and azoospermia by nourishing and stimulating the reproductive tissues.

**Spermosurge Capsule:** Spermosurge combines various potent herbs known for their reproductive health benefits. *Argyreia nervosa* and *Tribulus terrestris* are known to improve libido and overall sexual health. *Leptadenia reticulata* and *Withania somnifera* enhance vitality and combat stress, crucial for optimal sexual function. *Mucuna pruriens* supports dopamine levels that influence mood and sexual desire. *Dactylorhiza hatagirea* is especially notable for its role in improving sperm count and motility, critical for reversing azoospermia factors.

Ashwagandha ghan Vati: Ashwagandha, as a powerful adaptogen, contributes significantly by reducing stress, enhancing stamina and bolstering hormone function, which includes supporting testosterone levels and reproductive health. In the context of azoospermia, it is beneficial for improving semen quality and relieving stress-related disorders that can impair reproductive function.

**Org. Shilajit Tab:** Shilajit, rich in *fulvic acid* and over 84 minerals, offers deep tissue rejuvenation and increases the core energy responsible for sexual and spiritual power. Its role in enhancing male fertility is well-documented, including increasing sperm production and testosterone levels in men, making it valuable in the treatment regimen for azoospermia.

Research into the treatment of azoospermia, especially through integrative or Ayurvedic approaches, reveals several studies that elucidate the potential benefits of avurvedic and natural supplements. One significant study analyzed the effects of Tribulus terrestris, incorporated in Spermosurge Capsules, on male fertility and found that this herb could substantially improve sperm count and motility. critical elements in treating azoospermia.<sup>[13]</sup> Another clinical trial focused on the benefits of Withania somnifera (Ashwagandha), revealing that treatment with this herb could enhance semen quality, boost sperm count, motility, morphology and even elevate testosterone levels in men suffering from stressrelated infertility.<sup>[14]</sup>

Furthermore, research investigating the properties of *Shilajit* highlighted its antioxidative

capabilities, noting improvements in spermatogenic activity and reducing oxidative stress, which contributes to sperm quality degradation.<sup>[15]</sup> Additionally, a study involving *Mucuna pruriens* demonstrated significant enhancements in sperm concentration and motility, again endorsing its use in treating fertility issues such as azoospermia.<sup>[16]</sup>

An Ayurvedic case report also demonstrated successful management of azoospermia using traditional Ayurvedic preparations and treatment methodologies, where a patient showed notable improvements in sperm health and production.<sup>[17]</sup> These assessments collectively affirm the growing interest and potential efficacy of integrating traditional Ayurvedic treatment with conventional methods in managing male infertility, specifically azoospermia.

# Need for further research

Despite promising initial findings, there is a clear need for further research in the area of azoospermia, particularly concerning the integration of Ayurvedic treatments with conventional medical therapies. Future studies should focus on large-scale clinical trials to robustly evaluate the efficacy and safety of Avurvedic herbs and treatment protocols. Additionally, research should aim to elucidate the mechanisms through which these treatments exert their effects on male reproductive health. Establishing standardized formulations and dosages, as well as exploring the long-term outcomes and potential side effects of these treatments, will also be crucial. Such comprehensive research efforts will help to validate and possibly integrate traditional medicinal practices mainstream healthcare, into offering enhanced treatment options for azoospermia and other reproductive disorders.

# CONCLUSION

In conclusion the management of azoospermia through an approach using Ayurvedic treatments demonstrated considerable promise in the case presented. The use of *Ayurvedic* regimens such as *Spermosurge Capsule, Dhatuposhak Capsule* and supportive treatments like *Ashwagandha Ghan Vati* and *Org. Shilajit Tab* has shown significant positive outcomes in enhancing male reproductive health.

Objective outcomes from the semen analysis post-treatment provides compelling evidence of the effectiveness of these treatments. There was a remarkable improvement in the total sperm concentrate from nil to 28 million/ml. Sperm motility saw a vast enhancement with progressive motility (PR) escalating from non-existent to 50%, non-progressive motility (NPM) rising to 40%, and non-motile (NM) reducing to only 10%. Sperm viability increased to 60%, and sperm morphology normalized significantly, with 96% of sperm displaying normal forms posttreatment, showcasing an impressive recovery from a state of azoospermia.

Subjective assessments also reflected substantial improvements. The Insomnia Severity Index score improved from 18, indicating moderate insomnia, to 8, reflecting sub-threshold insomnia. The Fatigue Severity Scale score saw a reduction from 45 to 25, denoting a notable decrease in fatigue. Additionally, muscle strength, as evaluated by the Medical Research Council (MRC) Scale, improved from a score of 3 (indicating moderate strength) to 4 (indicating good muscle strength).

Given these outcomes, the use of Ayurvedic medicine in the treatment of azoospermia not only enhances seminal parameters but also contributes overall to the quality of life by alleviating associated symptoms like sleeplessness and fatigue.

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