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Role of Panchakarma in Male Infertility w.s.r to High Altitude Induced Asthenozoospermia: A Case Report

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ABSTRACT

Background of the Study: Infertility is a diseased condition of the reproductive system which can be defined as failure to achieve a clinical pregnancy after 12 months or more of regular unprotected intercourse. It is a major health issue affecting 8%-12% of couples worldwide. Male factor contributes to 20-30%, in India the contribution rate is 23%. Asthenozoospermia is a common cause of male infertility defined as reduced sperm motility, lower than 40%. Present study is looking at the impact of chronic exposure of high altitude (environmental hypoxia) on male infertility. Hypoxia acts directly on testicular seminiferous tubules resulting in impaired quantity and quality of sperm cells. *Ayurveda* explains male oriented infertility under the wide classification of *Ashtshukradosha* and asthenozoospermia which can be correlated with *Ksheena Shukra*. In case of *Ksheenshukrta* there is predominance of vitiated *Vata* and *Pitta*. *Ayurvedic* literature clearly mentioned *Virechan Karma* in *Ksheena Shukra*. **Aim & Objectives:** The main aim of this study was to evaluate the effect of high-altitude exposure on seminal parameters along with its successful management with *Virechana Karma*. **Result:** The current case study of a 29 years old male visiting the OPD section with 20% active sperm motility treated with *Virechana Karma* after *Snehana* and *Swedana* which resulted in the positive effect and the female partner conceived the very next month after *Virechana Karma*. **Conclusion:** The case study established the positive impact of *Virechan karma* in male infertility due to asthenozoospermia.

Key words: *Asanas, Obesity, Sthaulya, Shaileyadi Churna, Udvartana.*

INTRODUCTION

Infertility is a big health burden nowadays and makes couples unable to produce their offspring. It can affect both males and females irrespective of their gender. Males' infertility constitutes about 40% of infertility case and females' infertility constitutes about 40% of infertility cases.^[1] Under various causes of male infertility obesity, psychological stress and hypoxia are

predominant causes.^[2] Hypoxia can be defined as a transient or sustained decrease in arterial oxygen partial pressure that is less than 90%.^[3,4] Exposure to extraordinary conditions like living in high altitude has a significant impact on the reproductive system of males. Chronic exposure to high altitude leads to hypoxia which causes damage to fundamental cellular components such as carbohydrates, proteins, lipids and DNA (deoxyribose nucleic acid) which result in increased apoptosis at the germ cell level.^[5,6] Hypoxia also shows direct negative effects on testicular seminiferous tubules, leading to disorders of seminiferous tubules.^[7] Because of this, hypoxia at high altitude causes adverse effects on both quantity, quality of semen.

Acharya Charaka in the Ayurvedic text book *Charaka Samhita* states that man without progeny is just like a solitary tree.^[8] Asthenozoospermia can be considered similar to *Ksheena Shukra* in Ayurveda. *Acharya Sushruta* clearly defines that *ksheena Shukrta* occurs as

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result of *Vata* and *Pitta Doshas* and *Upchaya* is stated as treatment of choice in this particular type of *Shukra Dosh*.^[9] *Chikitsa* is mainly of two types, *Shodhana* and *Shamana*. *Acharyas* always emphasize on *Shodhana Karma* prior to *Shamana* drugs. *Shodhana Karma* (*Virechana Karma*) in *Ksheena Shukra* is done only to eliminate *Vata* and *Pitta* vitiated *Dosha* from the body followed by *Shamana* therapy with *Vrishya* drugs. *Acharya Charaka* while explaining *Chikitsa* of *Klaibya* stated that after proper *Snehan Swedan Karma*, *Sneha Virechana* should be administered to the patient.^[10] On the other hand, *Acharya Kashyap* also describes the significant role of *Virechana Karma* and clearly states that the effect of *Virechana* boosts the structural and functional capabilities of germ cells. With all the above considerations and analysis, a case study was carried out to know the impact of *Virechana Karma* on male infertility.

CASE REPORT

A 29 years old male, a soldier who came to the OPD of Ayurvedic hospital along with his wife. The couple was trying to conceive for the past 4 years but was unsuccessful. The female patient had regular menstrual cycles and no signs of hirsutism were detected, but the semen analysis report of male patient carried out one month ago showed that the sperm count of the patient was 30 million per ml along with 20% active motility. Patient did not complain about any other problem related to sexual intercourse. On further enquiry, the patient gave the history of working in very high altitude approximately at the height of 21000 feet (Indo Tibetan Border Post) for 3 years. Stress became a part of his life due to the nature of his profession. Inability to reproduce in 4 years of married life further added to existing stress. The couple had stayed together for the last one year but were still unsuccessful to conceive, even after regular unprotected intercourse. The couple tried various treatments for the last 4 years and the female underwent various diagnostic tests like hormonal profile, USG, graffian follicular study, and sonosalpingography. All tests of the female were normal, but despite it she was unable to conceive. With

this complaint the couple came to Ayurvedic hospital for treatment.

History of Past illness

No History of sexually transmitted disease, mumps, urogenital infection or any other chronic illness/surgical intervention.

Family history

No relevant family history was found.

General Examination of Patient

Temperature	: 98°F
Respiratory	: 22/min
Pulse Rate	: 84/min
Blood Pressure	: 128/78 mm of Hg
Weight	: 72 kg

Ashtvidha Pariksha

<i>Nadi</i> - <i>Vata Pradhan</i>
<i>Mala</i> - <i>Samanya</i>
<i>Mutra</i> - <i>Nirmal</i>
<i>Jihva</i> - <i>Anavrutta</i>
<i>Shabda</i> - <i>Spasht</i>
<i>Sparsh</i> - <i>Ruksha</i>
<i>Druka</i> - <i>Samanya</i>
<i>Akriti</i> - <i>Madhyam</i>

Personal History

There is no history of smoking, alcohol intake or any other addition.

Appetite	: Decreased
Thirst	: Normal
<i>Koshtha</i>	: <i>Madhyam Koshtha</i>

Sleep	: Disturbed
Prakriti	: Vatopittaja

Semen Analysis Reports (13/11/2022)

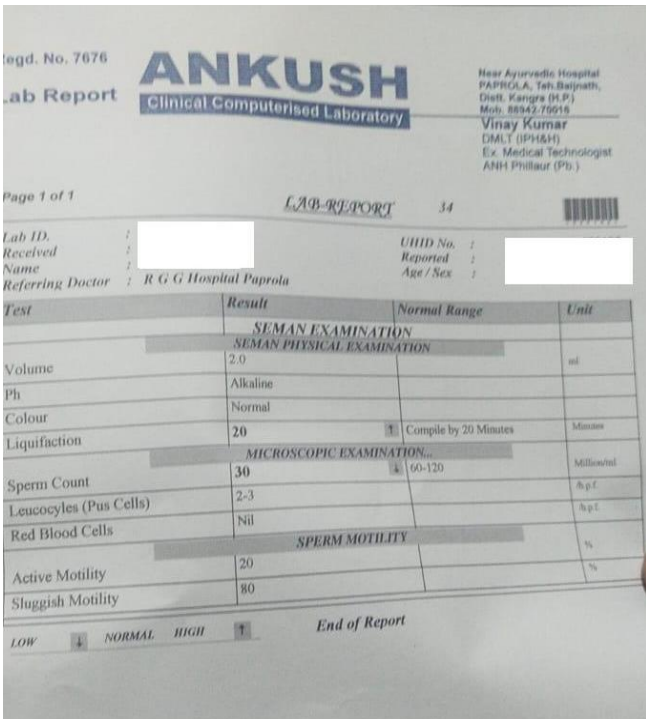


Figure 1: Male Semen Report

Semen Physical Examination	
Volume	: 2 ml
Ph	: Alkaline
Colour	: Normal
Liquification	: 20 minutes
Microscopic Examination	
Sperm Count	: 30 million/ml
Leuco Cycles (Pus Cells)	: 2-3 /h.p.f
Red Blood Cells	: Nil /h.p.f
Sperm Motility	
Active Motility	: 20 %
Sluggish Motility	: 80 %

Diagnosis - Asthenozoospermia~ *Ksheena Shukra Dosh*~ *Vata* and *Pitta* predominance.

Treatment plan

According to *Ayurveda*, the patient was diagnosed as *Ksheenshukra Dosh*, with investigation showing evidence of Asthenozoospermia. *Ksheena Shukra* is a type of *Shukra Dosh* which shows *Vata* and *Pitta* predominance. So, *Virechana Karma* was planned. At the very first, *Prakriti* and *Kostha Pareeksha* were done. After their careful assessment *Deepana Pachana* with *Chitrakadi Vati* (250 mg) 2 tablets twice a day with lukewarm water as *Anupan* before meal was given for 3 days just prior to *Snehpana*.

Protocol For *Virechana Karma* has been shown below.

Table 1: Protocol carried out for *Virechana Karma*

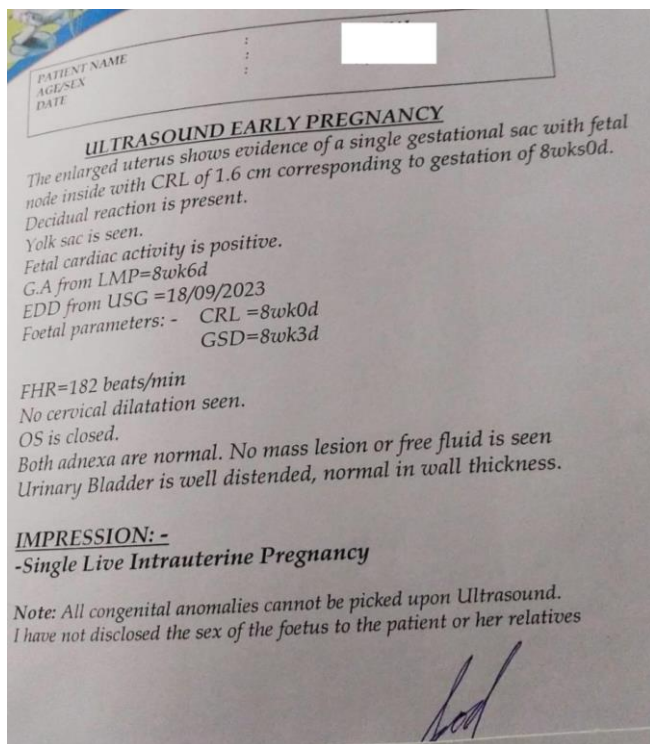
S N	Type of intervention	Drug of choice	Dose	Days	Route of Administration
1.	<i>Deepan - Pachan</i>	<i>Chitrakadi Vati</i>	250 mg	3 days	Oral
2.	<i>Snehapan</i>	<i>Ashwagandha Ghrita</i>	40ml – 240ml	5 days in incremental dose	Oral
3.	<i>Sarvang Abhyang</i>	<i>Bala Ashwagandha Tail</i>	Till appearance of proper symptoms	3 days (6 th -8 th day)	External Application
4.	<i>Nadi Swedana</i>	<i>Dashmool Kwath</i>	Till appearance proper symptoms	3 days (6 th -8 th day)	External Application
5.	<i>Virechana Karma</i>	<i>Erand Tail</i> with <i>Triphala Kwath</i>	80 ml + 150 ml	9 th day	Oral

Madhyam type *Shuddhi* seen as a patient had a total 18 *Vegas*. Therefore, *Samsarjana Karma* was advised for 5 days. After *Samsarjana Karma*, the patient was asked to take *Ojovardhak Dravya* like *Dugdha*, *Navneeta*, *Ghrita* etc. and also to follow *Viharas* like proper *Nidra*, *Vega Adharana* etc.

RESULTS

The couple was successfully able to conceive just after a month of *Virechana Karma*. Refer to Figure 2.

Figure 2: Female Pregnancy Report



DISCUSSION

Role of Purvakarma

Before proceeding to main *Karma* i.e., *Samshodhan Karma*, *Purva Karma* needs to be done. *Purva Karma* includes *Prakritip Pareeksha*, *Koshtha Pareeksha*, *Depan*, *Pachan*, *Snehana* and *Swedana*.

Deepan Karma - *Deepan* drugs composed of *Agneya* and *Vata Mahabhoot*. Due to this, they help in ignition of digestive fire. They also help in separation of *Leena Dosh* from *Dhatu*.

Pachan Karma - *Pachan Karma* is helpful in *Ama Awastha*. If *Snehana Karma* is done in *Amaj* condition,

it can further enhance *Ama Dosh* in the body and lead to destruction of sensory perception and even death. If *Sanshodhan* therapy is used in *Ajeerna Awastha* symptoms like *Vibhandh* (Constipation) and *Glani* (exhaustion/fatigue) appear.^[14]

Therefore, *Deepan* and *Pachan Karma* are mandatory prior to *Snehana* and *Sanshodhan Karma*.

Snehana Karma - *Snehana Karma* is done in two forms - Internal and External application. Internal *Snehana* is also of two types *Sodhana Snehana* and *Shamana Snehana*. *Sodhana Snehana* is done for minimum three days and maximum for seven days. Days for Internal application (*Snehapaan*) depends upon the patient's *Koshtha*, *Agni* and appearance of proper *Snehana* symptoms. *Snehana* enhances the *Drava Guna* of *Doshas* which is needed for the eviction of vitiated *Doshas*. *Snehana Dravya* with its *Sukshma* property, reaches to the minute channels and performs its action.

Next is *Sarvang Abhyang* which comes under external application. Main purpose of *Snehana Karma* before *Pradhan Karma* is alleviation of *Vata Dosh*, softness of *Doshas* (*Dosha Mriduta*) and lubrication of channels (*Strotasas*) which ease the expulsion of *Doshas* from the body without any discomfort.

Swedana Karma - *Sarvang Swedana* (fomentation) results in *Dosha Dravta* (liquefaction of *Doshas*) and helps to move *Doshas* from *Shakha* (extremities) to *Koshtha* from where *Doshas* are expelled out from the body through the nearest route.

Role of Virechana Karma - *Virechana Karma* /purgative therapy is a procedure for removal of vitiated *Pitta* and *Vata Doshas* through anal route. Mainly indicated in *Pitta* predominant condition. *Virechana Karma* are of two types: *Snigdha* and *Ruksh Virechana*. *Sneha* type of *Virechana* was selected for current study as *Acharya Charaka* mentions *Snehan Virechana* in *Klaibya Chikitsa*. Due to peculiar properties of *Virechana* drugs (*Ushna*, *Teekshan*, *Sukshma*, *Vyavayi* and *Vikasi Guna*) it will reach up to *Dhatu* level and helps in expulsion of *Doshas* from minute channels of the body. After *Smayaka Virechana* symptoms like feeling of purification, feeling of

lightness along with feeling of generalized weakness were there. Therefore, the process of *Virechana Karma* helps in removal of vitiated *Vata* and *Pitta Doshas* and simultaneously clear the *Sroto-Avrodha* of *Shukra Vaha Srotas*. So, execution of *Virechana Karma* is helpful in the management of *Ksheena Shukra Dosh*.

CONCLUSION

Ayurveda has crystal clear treatment protocol in case of *Ksheena Shukra Dosh*. The unique *Shodhana* therapy (*Virechana*) specifically hits on the target that is *Shukravaha Srotas* and this is what we actually want in case of *Ksheena Shukra Dosh*. *Virechana Karma* helps in both removal of *Srotorodha* as well as stimulation of *Shukragni*. Because of this, *Virechana Karma* gears up the metabolism of the body which boosts the quantity and quality of semen. *Shodhan* therapy detoxifies the body and improves physical as well as psychological health. Treatment given to the patient was found effective and no complication was found during the treatment. Also, treatment is very cost effective. So, the further study should be conducted on a large number of patients.

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