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Management of primary infertility with multifactor etiology - A case report

Case Report

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Abstract

In this case study patient aged 27 years presented with anxious to conceive since two years of regular and satisfactory marital relationship seeking *Ayurvedic* line of treatment, diagnosed with unexplained hyperprolactinemia & hyperemic cervix. From detailed history involvement of vitiated *Vata* and *kapha, Agnimandhya* noticed. she was treated with *samshamani vati* and *kapikacchu churna* orally along with *panchavalkal taila yonipichu*. With above mentioned medications patient approached with history of missed period and when advised for Urine Pregnancy test and was found to be positive Followed by dating scan confirmed the intrauterine pregnancy. An attempt is made in this article to analyze the probable cause of her infertility and management strategy adopted.

Key Words: *Hyperprolactinemia, Vandhyatva, Galactorrhea, Kapikacchu Choorna, Primary Infertility, Mucuna pruriens Linn.*

Introduction

Infertility is a relatively common reproductive health concern which strikes deep into the psyche of couples experience it. lt is "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. (1)

There are two types of infertility - primary and secondary. Primary infertility means that the couple has never conceived. Secondary infertility means that the couple has experienced a pregnancy before and failed to conceive later. (2)

The main disorders involved in infertility include pathologic spermiogram, ovulation problems / anovulation, tubal diseases, pelvic adhesion / endometriosis, cervical factors and idiopathic reason usually qualified as the so-called unexplained infertility. (3)

Acharya Sushruta have explained four important factors as *Garbha Sambhava Samagri* that is *Rutu(*Rutu means period suitable for conception of Garbha. lt is considered as proliferative or peri ovulatory period), *Kshetra(*reproductive system of mother), *Ambu(* Can be correlated to *Ras dhatu* and Hormones*)* and *Beeja* (ovum and sperm). These are important for conception. Infertility occurs if there is any abnormality in *Garbha Sambhava Samagri,* normalcy of *hrudaya* (psychology), *shadbhava*, improper functioning of *vayu, dhatwagni*mandyata leading to *rasa dhatupradoshaja vikara* are seen. (4)

According to Acharya Charaka Apradustha Yoni, Garbhashaya and *Garbhashaya Marga* are also important factors for conception, hence, it can be stated that healthy *Shaareera* of *Stree* possessing healthy *Yoni, Garbhashaya* (uterus) and *Garbhashaya marga* (cervix) as Kshetra. (5). Any obstructive or inflammatory pathology of the internal reproductive organs can also be the cause of infertility,

Hyperprolactinemia is a condition of elevated serum prolactin levels. (6) Prolactin is a protein having 199 amino acids with molecular weight 23000 Dalton; it is produced in the lactotroph cells of anterior pituitary. The serum levels of prolactin above 20ng/ml considered as hyperprolactinemia. (7) lts primary function is to induce lactation after child birth.

Hyperprolactinemia inhibits the secretion of GnRH and increase release of dopamine from arcuate nucleus, which in turns inhibits the release of FSH and LH from pituitary gland. lt also inhibits ovarian steroidogenesis causing secondary amenorrhea in 30% cases(8) Hyperprolactinemia ultimately results in hypogonadotropic hypogonadism, oligomenorrhea, amenorrhea & anovulation. (9) H-P-O axis is disturbed causing anovulatory cycles and later infertility. (10)

Ayurvedic management involves treating the above factors, as *Vata dosha* is main causative factor, Hyperprolactinemia can be understood as *vyanavayuvikriti* with *sanga* of *artavavahasrotas*.

A critical evaluation on female infertility shows that ovulatory factors contribute almost 30– 40% of the case. Among anovulatory causes of infertility, Poly Cystic Ovarian Syndrome (PCOS) plays a major role. (11) Diagnosis of PCOS is based on anovulation, elevated androgen levels and presence of multiple ovarian cysts on USG findings. (12) Most of the time these conditions are presented with signs and symptoms such as obesity, amenorrhea and hirsutism. (13) A direct

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description of Poly Cystic Ovarian Syndrome in classical *Ayurveda* Texts is not available. After considering clinical features, *Dosha* involvement management principles of *Vandhya*, Nashtartava, Sthaulya (obesity)] can be adopted.

So, Proper functioning of *Vataadi Dosha* must be maintained for pregnancy and throughout the entire pregnancy period. Establishing the proper functioning of all these is the first step of infertility management in *Ayurveda.*

Case Presentation

A female patient, aged 27yrs living in Amrutnagar, Kolhapur, was anxious to conceive, came to our OPD on 15/09/2017. Married life of 2 yrs with regular unprotected sexual intercourse. The other associated complaints where white discharge vaginally (on and of since 1 year), mild pain in the left breast since 2-3 days. Milky secretions from B/L breast since 1 year. patient was on medications with no relief to the symptoms. Menstrual cycles were regular. M/H 4-5 days/28-30 days/2pads/day clots+. No complaints of dysmenorrhea, intermenstrual bleeding, dyspareunia. On examination, the dosha involvement was *vatakaphaja.*

General examination of the patient revealed no significant abnormality. Secondary sexual characters well developed.

On Per speculum examination, hyperemic cervix noted indicating chronic cervicitis ; that is

raga (redness and inflammation) is present indicating pitta dosha vikara.

On Per vaginal examination Uterus is Anteverted, Normal in size, free fornixes with good mobility. BMl is 26 indicating slightly overweight. Blood pressure-110/60mm of Hg, pulse -78/minute. vitals stable, No any abnormal finding seen in general and systemic examination. Mild galactorrhea noted from both breasts. Husband sterility was ruled out. No coital difficulties were present. Since two years of married life, regular unprotected sexual intercourse was present.

Diagnostic parameteers

Patient was already having USG report which was done on 14/09/2017 which was day 17th of her menses,

USG- (14/9/17)

Right ovary volume is 6. 2cc, left ovary 5. 8cc with dense central echogenic stroma, peripherally arranged follicles in chain like pattern, with normal sized ovaries. Suggestive of Polycystic ovaries noted. ET-8. 6mm. as per the impression of Ultrasound.

USG report was suggestive of Multiple follicles and PCOD as given by Radiologist, but as per Clinical examination patient did not present with acne on face, buttocks or back. No hirsutism or androgenic alopecia were seen. i. e. no signs of hyperandrogenism are noted. No Acanthosis nigricans. No obesity is noted. so according to Rotterdamms criteria, she was excluded from PCOS.

As patient was also presenting Galactorrhea, To rule out Hyperprolactinemia induced anovulation and Infertility, serum prolactin and thyroid function test were advised with other infertility workup (serum FSH, LH, AFC, AMH, serum estradiol).

Reports (18/9/2017)

- Sr. Prolactin- 37. 80ng/ml
- Sr. T_3 - 1. 7 ng/ml
- Sr. T_4 - 9. 37 µg/ml
- Sr. ultera TSH - 1. 54 µlU/ml

However the presence of multilple follicles and absence of matured follicle and ovulation is efect of raised prolactin level. (9)

As patient was complaining of white discharge, per speculum examination was done. In Per speculum examination, hyperemic cervix is noted which indicates chronic cervicitis, so irritable discharges may be hampering entry of motile spermatozoa.

Table 1: Treatment Protocol

Date	Medication	Dose	Anupana	Time	Duration
19/09/ 2017	*Samshamani vati*	500 mg twice daily	water	After food	2 month
19/09/ 2017	*Kapikacchu choorna*	2gm twice a day	water	After food	2 month
15/09/ 2017	*Panchavalkal Tail Yonipichu*	Daily	-	Before food	15 days

Initially treatment of 2 months was planned.

Treatment advised to the patient

Internally *Tablet Samshamani vati* was given for amapachana. lt was taken from 19/09/2017till 2/11/2017. The patient was treated with a course of *yonipichu* with *panchavalkala taila* to reduce the hyperemic condition of cervix from 15/09/2017 to 30/09/2017. For hyperprolactinemia *Kapikacchu choorna* 2 gm twice daily with water was advised. Patient had taken it from 19/09/2017 to 2/11/2017. She was also advised exercise*, laghu* and *supachya aahara*, avoid junk food, fermented food curd and other *Vatakaphavardhak aahara, vihara.* She had her regular period in August and September.

After one month of treatment started from 19/09/2017, galactorrhea decreased. cervix visualized normal. Same treatment continued for another cycle. Patient had her regular period on 2/10/2017. As advised she stopped oral medications from 2/11/2017 as she missed the period. On 20/11/2017 patient came with complaints of nausea, headache and missed period. LMP- 02/10/17, UPT done which came positive.

USG findings 21/11/17:- Single live intrauterine gestational age of 7. 5 weeks, fetal pole and cardiac activity seen, FHR- 156/min, Placenta is situated anterior and normal in echo pattern.

As treatment protocol medicine was planned to be given for two cycles but as she conceived in 2nd cycle oral medicines were stopped from 3/11/2017.

Assessment parameter

After the treatment repeat of sr. prolactin and USG to confirm the ovulatory cycles were planned but patient has conceived in second cycle of treatment.

As ovulation is important factor for conception, it is a direct evidence of correction of hyperprolactinemia induced anovulatory cycles.

Mode of action Drugs given

Initial management including *pathayaharvihar* acting as *nidanaparivarjana*. *Agnideepan*a and *amapachana* done with *samsamani vati* which consists of *guduchi.* To reduce Hypereamic cervix a course of *Yonipichu* with *Panchavalkala Tail* was given.

Panchavalkala refers to bark of five following plants. 1. *Vata - Ficus bengalensis Linn*. 2. *Udumbara- Ficus glomerata Roxb.* 3. *Ashwattha- Ficus religiosa Linn*. 4. *Parisha - Thespesia populnea Soland ex Correa. 5. Plaksha - Ficus lecor Buch. Ham*. (14) lt has activities like *Vranaprakshalana, (15)Vranaropana, (16)Shothahar* properties. (17)The phyto-constituents from *Panchavalkala,* mainly found to contain phytosterols, tannins and glycosides. Tannins have antiseptic and antibacterial activities. (18)Tannins had the best antimicrobial activity in comparison with glycosides and phytosterols. (19)

*Kapikacchu-Mucuna pruriens Linn***,** having *rasa-madhura-tikta, (20) vipaka-madhura, virya- ushna, prabhva-vrushya,* helps in *artavajana ;(21)* and thus promotes ovulation, lts *prabhavac* is *vrushya* (potent for ovulation and spermatogenesis)and has *rasayana* (rejuvenation) effect. (22) Due to its effect it works on *rasa dhatu*. when *rasa* becomes proper its *upadhatu (artava and stanya*) becomes *shuddha.* lt contains L-dopa. (23) Dopamine is one of the main regulators of production of prolactin from pituitary gland. Dopamine restrains prolactin production through its direct effect on anterior pituitary lactotrophs, by inhibiting high secretory tone of cells by binding with D2 receptors expressed on cell membranes of lactotroph, activation of which results in reduction of prolactin, so more the dopamine less prolactin is released. (24)Thus *kapikacchu* reduces levels of prolactin. *Artava* which can be understood as oocyte as per the context explained in chakrapani *teeka* on *charaka shareera* sthana, , the property *artavajanana* of *kapikacchu* (25)can be considered as ovulatory induction with raised prolactin levels. lts two property of reducing raised prolactin by dopamine regulation and as per *Ayurvedic Acharya's* opinion as *artavajanana* which achieves pregnancy.

Discussion

Probably the case presented was not able to conceive due to hyperprolactinemia induced anovulation and also hostile cervical secretions due to inflammation which was treated with local treatment, *panchavalkala taila yonipichu,* which is a potential *vranasodhana* and *vranaropana* and drug, that is anti-inflammatory, wound healing property. Hyperprolactinemia inhibits the secretions of GnRH from hypothalamus, thus FSH and LH secretion from pituitary gland are inhibited, . Hyperprolactinemia inhibits ovarian steroidogenesis, leading to anovulatory cycles and further infertility. *Vandhyatva* due to anovulation is *Vata-Kaphapradhanavyadhi.* (26) lt is *vikruti* of *vatadosha*(i. e. *vyanavayu*) Hence main line of treatment should be *vatakaphashaman, agnideepan, aampachana and vatanuloman.* Empirically considering increased prolactin as cause of anovulation and infertility and associated cervicitis causing difficulty of sperm penetration both were treated Appropriately. After given treatment, patient has conceived. After first one month patient improved clinically. Prolactin levels decreased which was indicated clinically by absence of galactorrhea. The *samprapti* of *vandhyatwa* can be understood as follows

Midhyaharavihara leading to *agnimandya*, *trodoshavikriti* as *vatakapahpradhana*, *pitta anubandha (*cervical hyperaemia) *dhatwagnimandyata* represented by *rasadhatu dushti* and its *upadhatu stanya akalapravrit* (hyperprolactinemia) further leading to *pradushtaartava* (hyperprolactinemia induced anovulation), *artavavahasrotasdushti* in the form of *sanga* (anovulation), manifesting as *vandhyatwa.*

Conclusion

This case report shows an insight into successful management of primary infertility associated with Hyperprolactinemia and hyperemic cervix efectively through Ayurvedic treatment modalities. here it shows that with proper clinical evaluation and systemic approach of ayurvedic treatment multiple factors responsible for infertility can be cured simultaneously. The result obtained in this single case study is encouraging and the protocol followed here may be subjected for trial in larger samples.

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