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Case Report

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EFFECTIVENESS OF AYURVEDA TREATMENT FOR BILATERAL TUBAL BLOCKAGE AND SUBFERTILITY; A CASE REPORT FROM SRI LANKA

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ABSTRACT

Subfertility is the failure to conceive within one year of unprotected regular sexual intercourse. Main causes for subfertility are ovulation disorders, seminal fluid defects, tubal damage, endometriosis and fibroids. Among those causes tubal and peritoneal factors are the second most contributory cause. The tubular obstruction may occur from pelvic inflammation due to various infections. In this case report, a 37-year-old female patient was reported with bilateral tube blockage and moderate secondary dysmenorrhea due to pelvic inflammation. She was treated with *shodhan* therapy followed by *Shamana* Ayurvedic formula. *Punarnawashtaka churna, Pippalimula churna, Maduyashtadi churna, Shariwan trivruth churna, Kaishora guggulu, Gokshuradi guggulu, Arogyawardhani vati and Sudarshana vati* formulae were administered for 6 months followed by 7 days of *Nirgundyadi* oil application and *Nadi sweda* after cessation of menstrual periods. There was a gradual improvement of dysmenorrhea. At the end of treatment, no dysmenorrhea or fallopian tube blockage was observed. No adverse effects were noted during the treatment period. The patient conceived during the follow-up period concurrent to the treatment action. The present case study concluded that above formulae is very effective in the treatment of subfertility secondary to tubal block.

KEYWORDS: Subfertility, Pelvic inflammation, Dysmenorrhea, Ayurveda.

1. INTRODUCTION

Subfertility is defined as the failure to conceive within one year of unprotected regular sexual intercourse. For couples who have had no previous conception, the subfertility can be described as primary, while inability to conceive after a successful conception is defined as secondary subfertility.[1]

Main causes for subfertility are ovulation disorders, seminal fluid defects, tubal damage, unexplained and other causes such as endometriosis and fibroids.[2] Among those causes tubal and peritoneal factors are the second most contributory factors for subfertility,[3] (25% - 35%).

The fallopian tubes are muscular tubes that are lined with ciliated columnar epithelial cells and peg cells (non-ciliated secretory cells). These cilia work in both directions; helping an ovum to travel from the ovaries down to the uterus and helping sperm travel up from the uterus. The fallopian tubes play an important role in conception because they are where most ova are fertilized. If any part of the fallopian tube is damaged, they can become blocked by scar tissue and fail to do their functions. As mention above, blocked fallopian tubes are one possible cause of female infertility. The obstruction of the tubes could occur due to pelvic infections or pelvic surgeries causing Peritubal adhesions, Endosalpingeal damage, Salpingitis isthmica nodosa, tubal endometriosis, polyps or mucous debris within the tubal lumen or tubal spasms.[4]

According to Acharya Susruta, four factors essential for conception are *Ritu* (Season), *Kshetra* (Reproductive system), *Ambu* (Nourishing Substances) and *Beeja* (Ovum and Sperm).[5] All these terms have broad meanings and here *Kshetra* includes all the structures of the female reproductive tract. Fallopian tubes are part of *Kshetra* mentioned by Acharya Susruta as one of the four elements necessary for conception. Any abnormality in these elements can lead to subfertility. According to Acharya Harita infertility caused by tubal block can be considered under *Garbhakoshabhanga* (Abnormality in the uterus).[6] Pelvic inflammation is one cause for tubal block and there are several disease conditions which correlate with Pelvic Inflammatory Disease (PID) in Ayurveda. *Pittala Yoni Vyapad* and *Paripluta Yoni Vyapad* are diseases mentioned in Ayurveda under the *Yoni Vyapads*,[7] and they are comparable with PID on the basis of its symptomatology. Tubal blockage is a

common complication of PID leading to subfertility. Acharya Caraka and Vagbhata consider infertility as a complication of all the yoni Vyapads.[8]

The pathogenesis of a disease in Ayurveda is explained differently from Western medicine. The root cause of any disease is due to vitiation of *Dosha*. With proper understanding of those *Dosha* vitiations, any disease can be treated successfully.

2. MATERIALS AND METHODS

The patient presented with complaints of dysmenorrhea and failure to conceive. She was examined.

3. CASE PRESENTATION

A 37 years old married female presented to the *Stree roga* clinic, Wikramarachchi Ayurveda Teaching Hospital, Yakkala, Sri Lanka on 20th August 2017 with complaints of dysmenorrhea and failure to conceive for 10 years despite regular and unprotected sexual activity. Menarche occurred at 14 years of age and her menstrual periods had always been regular with normal flow despite having moderate dysmenorrhea. She reported no changes in bowel habits and denied any urinary symptoms. She has not used contraceptives since marriage. There was no dyspareunia. She was diagnosed with Polycystic Ovary Syndrome (PCOS) in 2015. Surgical history revealed an Appendicectomy in 1991 and 2 Laparoscopic Dye tests in 2010 and 2015. First Laparoscopic Dye test (2010) was normal and after that two intra uterine inseminations (IUI) has been performed in September, 2015 and October, 2015. However, the attempts have been unsuccessful. Laparoscopic dye test was repeated in December 2015, which revealed a congested pelvis, bilateral tube blocks with free fluids in Pouch of Douglas. Her spouse was on treatment for hypertension and his physical examination and seminal fluid analysis were normal.

On examination she was not pale. Pulse rate 78/min, normal rhythm and BP was 100/70 mmHg. Her BMI was 26.8kgm^{-2} Cardiovascular, respiratory, and nervous systems examinations were unremarkable. Abdominal examination revealed the presence of mild tenderness on lower abdomen. In vaginal examination, the cervix was healthy. There were no discharges. Uterus was anteverted and normal in size. There was no cervical excitation, no palpable adnexal masses and no contact bleeding. The *Prakriti* of the patient was diagnosed as *pittavata* while *nadi* was *pittaadhiktridosaja*.

Transvaginal ultrasonography revealed a uterus with normal size and the endometrial thickness was 6mm. There were several small follicles in ovaries confirming PCOS.

Her hormonal assay was as follows: FSH - 8.60mIU/ml, LH - 3.86mIU/ml, Prolactine - 127.1ng/ml, T3 - 5.05mIU/ml, T4 -16.4mIU/ml and TSH - 1U/ml.

Figure 1: Laparoscopic dye test which revealed bilateral tube blocks with free fluids in Pouch of Douglas.

Management

The treatment was carried out with oral medicines (*Punarnawashtaka churna, Pippalimula churna, Maduyashtadi churna, Shariwan trivruth churna, Kaishora guggulu, Gokshuradi guggulu, Arogyawardhani vati and Sudarshana vati*) and external treatments (*Nirgundyadi oil* application and *Nadi sweda*) over 6 months as depicted in table 1. At the beginning of the treatment the patient underwent *Shodana* therapy for two-week duration. Oral drugs were given for mild *Shodana* therapy after which oral drugs were started to reduce inflammation of the pelvis. Total duration of the treatment was 6 and half months and oral drugs were given continuously while external treatments limited for 21 days within first three months. After cessation of menses, external treatments were done for 7 days in first three-month duration (7days within one month and 21 days within 3 months).

Table 01: Treatment Plan.

Period of administration	Mode	Preparation	Herbal composition	Section of the herb
Drugs for purification (*Shodana*)	Oral	*Panchamuli laghu draksha Panta*	*Alysicarpus vaginalis* *Aerva lanata* *Solanum surattense* *Solanum santhocarpum* *Tribulus terrestris* *Cissampelos pareira* *Picrorrhiza kurrrooa* *Tinospora cordifolia* *Phyllanthus emblica* *Vitis vinifera*	Root Root Root Root Root Root Root Stem Fruit Fruit
	Oral	*Chandraprabha vati*	*Commiphora mukul* *Opeculina turpethum* *Embilica officinalis* *Terminalia chebula* *Terminalia bellirica*	Stem latex Root Fruit Fruit Fruit
	Oral	*Manibadra churna*	*Embelia ribes* *Embilica officinalis* *Terminalia chebula* *Opeculina turpethum*	Fruits Fruits Fruits Root
Drugs for first 3 months	Oral	*Punarnawashtaka churna*	*Boerhavia diffusa* *Azadirachta indica* *Trichosanthes cucumerina* *Zingibar officinale* *Picrorrhiza kurroa* *Tinospora cordifolia* *Cedrus deodara* *Terminalia chebula*	Root Stem Fruit Rhizome Root Stem Stem Fruit
	Oral	*Pippalimula churna*	*Piper longum* *Terminalia chebula* *Egle marmelos*	Root Fruit Root
	Oral	*Kaishora guggulu*	*Tinospora cordifolia* *Embilica officinalis* *Terminalia chebula* *Terminalia bellirica* *Commiphora mukul*	Stem Fruit Fruit Fruit Stem latex
	Oral	*Gokshuradi guggulu*	*Tribulus terrestris* (Main Ingredient)	Root
	External	*Nirgundayadi oil*	*Vitex negundo*	Leaves
Drugs for next 3 months	Oral	*Maduyashtadi churna*	*Glycyrrhiza glabra* *Curcuma longa* *Coscinium fenestratum* *Stereospermum suaveolens* *Cassia fistula* *Cyperus rotundus* *Azadirachta indica*	Root Rhizome Stem Root Stem Tuber Stem
	Oral	*Shariwan trivruth churna*	*Hemidesmus indicus* *Opeculina turpethum* *Vitis vinifera* *Tragia involucrate* *Cassia senna* *Picrorrhiza kurroa* *Adhatoda vasica* *Terminalia chebula* *Azadirachta indica* *Curcuma longa* *Coscinium fenestratum*	Root Root Fruit Root Leaves Root Root Fruit Stem bark Rhizome Stem
	Oral		*Plumbago zeylanica*	Root

		Arogyawardhani vati	*Commiphora mukul* *Embilica officinalis* *Terminalia chebula* *Terminalia bellirica*	Stem latex Fruit Fruit Fruit
	Oral	*Sudarshana vati*	*Cyperus rotundus* *Terminalia chebula* *Curcuma longa*	Rhizome Fruit Rhizome

Preparation and administration of oral drugs

In first two weeks drugs were used for purification (*Shodana*) purpose. *Panchamuli laghu draksha churna* (5g) was seeped in half a cup (125 ml) of boiled water and administered in the morning (after meal) and evening (16.00h). *Chandraprabha vati* (pill) was prescribed to take with warm water in the morning (after meal) and evening (16.00h). *Manibadra churna* (5g) seeped in 125 ml of boiled water was administered at night (after meal).

In the first 3 months, *Punarnawashtaka churna* (5g) was seeped in half a cup (125 ml) of boiled water. This preparation was administered in the morning (after meal) and evening (16.00h). In addition, *Pippalimula churna* (5g) seeped in 125 ml of boiled water was administered at night (after meal). *Kanchanara Guggulu* (pill) was prescribed to take with warm water in the morning (after meal) and evening (16.00h). *Gokshuradi Guggulu* (pill) was administered in night (after meal) with warm water.

In the next 3 months, *Maduyashtadi churna* (5g) was seeped in half a cup (125 ml) of boiled water. This preparation was administered in the morning (after meal) and evening (16.00h). In addition, *Shariwan trivruth churna* (5g) seeped in 125 ml of boiled water was administered at night (after meal). *Arogyawardhani vati* (pill) was prescribed to take with warm water in the morning (after meal) and evening (16.00h). *Sudarshana vati* (pill) was administered in night (after meal) with warm water.

After using oral drugs for *Shodhana* Therapy, external treatments were done for 7 days in first three-month duration (7days within one month and 21 days within 3 months after cessation of menses). External Treatment was done by using *Pinda oil* and after oil application, sudation (*Sweda karma*) had performed by using *Nadi sweda*.

Upon completion of treatments for 6 months, the patient underwent a Hysterosalpingogram (HSG) which revealed normal uterine cavity with bilateral patent tubes. Patient was followed up for a period was 2 years after completion of the 6 months of treatment. Follicular maturity drugs were given during the follow-up period and the patient was assessed at one month intervals. She was advised a low fat diet consisting of whole grains, green leafy vegetables, fruits and to avoid fried foods. She was also encouraged to exercises regularly.

4. RESULTS

During the treatment she noted gradual improvement of dysmenorrhea and at the end of the treatment moderate dysmenorrhea improved up to no dysmenorrhea. Hysterosalpingogram (HSG) was performed to assess the results of management after completion of treatment for six months. HSG revealed bilateral patent tubes with a normal uterine cavity. The patient did not report of any adverse effects during the treatment period and the follow up period. She conceived during the follow up period.

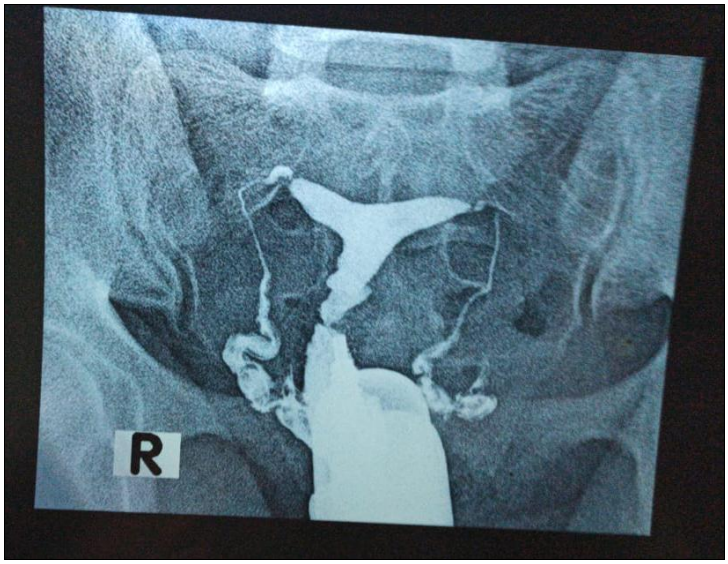

Figure 2: Hysterosalpingogram (HSG) which revealed bilateral patent tubes.

Figure 3: The Ultra Sound Scan (USS) conducted in the second trimester indicating the head circumference and normal biometry.

5. DISCUSSION

Ayurveda Pathogenesis of Tubal block due to Pelvic Inflammatory disease

Due to previously done laparoscopy (*Nidana* / Etiological factors)

↓

Vata Dosha and *Pitta Dosha* Vitiation (*Dosha Vigunya*)

↓

Rakta and *Mamsa* Vitiation (*Dushya*)

↓

Rakta vaha and *Artava vaha Srotas dushti* (*Kha vaigunya*)

↓

Sanga (*Shrotodushti*)

↓

Pelvic Inflammatory disease (Disease / *Vyakta avasta*)

↓

Fallopian Tube Blockage (Complication of the Disease/ *Bheda avasta*)

Fig. 04: *Samprapthi* / Pathophysiology of the tubal block due to *Pittala Yoni Vyapad.*

The first Laparoscopic dye test done in 2010 revealed bilateral patent tubes whereas the second laparoscopic dye test conducted five years later showed bilateral fallopian tubal blockage with a congested pelvis. Thin layer of free fluid was visualized in the Pouch of Douglas. Patient complained of moderate dysmenorrhea and abdominal examination revealed the presence of mild tenderness on lower abdomen. These features suggestive of Pelvic Inflammatory Disease (PID) can be correlated with *Pittala Yoni Vyapad* and *Paripluta Yoni Vyapad* in Ayurveda. Fallopian tubes were blocked due to ongoing PID.

Effects of used drugs

In first two weeks drugs used for purification (*Shodana*) purpose. *Panchamuli laghu draksha churna* has *Pitt Virechaka*, *Shodhana* properties and it also reduces inflammation. *Chandraprabha vati* has *Pitta Shamaka* property. *Manibadra churna* was effective in *Srotas Shodhana* and *Mala Anulomana* actions.

This condition should be treated with medicines and procedures (karma) which have *Vata* and *Pitta Shamaka* properties. *Punarnavashtaka churna* has *Sarvanga* Shothahara,[9] properties (cure edema like conditions), thereby reducing inflammation and oedema. *Pippalimula churna* has the *Ama pachana* and *Agni deepana* (increase digestive power) effects with balancing of *Apana Vata*. *Kaishora guggulu*,[10] has *Vranahara* (wound healing) property. *Kaishora pills* reduces inflammation and *Gokshuradi* pills reduce oedema. Both *Kaishora* and *Gokshuradi* pills have blood purification properties. In addition, main ingredient of those pills was *Guggulu* which promotes detoxification, rejuvenation purification of blood and has *Karshana guna* and *Shothahara Guna*.[11]

The treatment of the second three-months consists of, *Maduyashtadi churna*, *Shariwan trivruth churna*, *Arogyawardhani vati* and *Sudarshana vati*. *Maduyashtyadi churna has Vata Pitta Shamaka* Guna,[12] and it reduces inflammation. Both *Arogyawardhani vati* and *Sudarshana vati* have blood purification properties with anti-inflammatory action.

All these properties indicate its antiseptic as well as anti-inflammatory actions. *Nirgundyadi* oil is *Vata* falsifying oil,[13] and *Nadi Sweda*,[14] helps to increase blood circulation. Hence, those drugs hasten the healing and rejuvenation of the inner lining of tubes. Therefore, the combination of above formulae improves the inflammatory condition and removes the tube blockage.

6. CONCLUSION

The treatment strategy in this case study proves to be safe, reliable and effective in the treatment of subfertility caused by tubal blockage secondary to PID in a patient with Polycystic Ovarian Syndrome. Following opening of the fallopian tubes through this treatment protocol, the patient was administered Ayurvedic follicular maturity drugs which in turn increased the conception rate of this patient. Hence, the treatment protocol can be used as the standard treatment for the management of female subfertility secondary to tubal blockage in Ayurvedic Gynaecology practice in the future.

7. Conflict of interest

The authors declare no conflict of interest.

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