



RESEARCH ARTICLE

AN LITERARY REVIEW OF PUMSAVANA KARAMA

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ABSTRACT

Pumsavana Karma is one of important concept mentioned in ancient *Ayurveda*. It is preferably used to achieve the desirable child. Some of the theories postulated to determined the sex of embryo by our *Ayurvedic Acharyas* under the heading of *Pumsavana Karma* and general public is curious to know mystery of this concept. To determine sex of future offspring is an offence now a days because of many factors. The scientific review of this concept with modern embryology is felt. Study of modern embryological development process of urogenital system regarding the determination of sex is considerable to prove the efficacy and mode of action of *Pumsavana Karma* and the Drugs related. Drugs used for *Pumsavana Karma* are directly or indirectly acts on the pituitary gland and stimulates the secretion of hormones are responsible for the particular gonadal and sex organs development in male or female baby. For desirable results one should follow the methodology of *Pumsavana karma* as explained by *Acharyas* to see its mystery. How the drugs used during the procedure helps in the development of internal & external male and female urogenital system is discussed and conclusion is required further study.

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INTRODUCTION

Many theories postulated in regarding antenatal sex determination in human embryo have a subject for entire medical faculty. *Pumsavana Karma* is one of concept postulated by ancient *Acharyas* in *Ayurveda*. *Sushruta*, *Charaka* and even *Vagbhata* have presented in a very nut shell symbolic form. To update revalidates the concept of *Pumsavana Karma* required proper research work with help of modern equipments & parameters. General public since from begening interested in knowing how the mankind originated and developed. Thus curiosity resulted in the development of a separate branch of *Rachana Shareer* under the heading of *Garbha Shareer*. After relevant development in the fundamental basic knowledge of *Garbha Shareer*, man become eager to determine the sex of the future developing offspring prior to birth. Thus result in the development of theories like *Pumsavana Karma*.

Defination

Reproductive Functions: (E. 8/12)
Pumsavanamiti Pumsathvakarakam Karma.
Pumaan Suyaye Anen Iti Punansavanam (Chakrapadidta)

The procedure is to be adopted for achieving a pregnancy of desire sex is known as *Pumsavana Karma*. Proper time for *Pumsavana Karma*¹, *Acharya Sushruta* has advocated that *Pumsavana Karma* should be done just after the *Garbhadharana* (conception). But *Acharya Charakas* opinion is that the *Pumsavana Karma* prescribes for achieve male or female pregnancy used before the *Vyaktibhava* conspicuousness of organs; the change of sex is possible.

Garbha pumsavanatmatra purva vyakte prayojayet

Pregnancy: Ponsavanamutra Prev. Persons: Purpose (A.H.1.37) 3

The *Pragvyaktibhava kala* refers the a bisexual or indifferent stage of early gonadal development i.e. within 8th week of intrauterine life. The gonads develop from the intermediate mesoderm during 5th week of development, the gonads appears as bulges that protrude the ventral body cavity adjacent the gonads theses are mesonephric ducts i.e. wolfian ducts which eventually develop in structures of the male genital system. A second pair of ducts is called paramesonephric ducts (mullerian ducts) develops lateral to the mesonephric ducts & eventually they form structures of female reproductive organs. The sex of the embryo is determined genetically at the time of fertilization, the gonads do not require male or female morphological characteristic until the 7th week of development.

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The early embryo has follow either male or female pattern of development & it contains both sets of ducts & primitive gonads which can differentiate in to testes or ovaries. The male pattern of development is initiated by SRY (sex determining region of Y chromosome) genes. It can also referred as TDP (testis determining factor). It cause the primitive sertoli cells of differentiate into gonadal tissue during the 7th week. The development of sertoli cells secretes the hormone named MIS (Mullarian initiating substance) is also referred as AMH (anti mullarian hormone). This cause degeneration of mullarian duct. Thus they do not any part of contribution of any structure in the male reproductive system. Ledging cell in the gonadal tissue begin to secrete the testosterone during 8th week. It stimulates the development of wolffian ducts in to male genital organ. In the case of female embryo because of absence of SRY the gonads develop into ovaries because MIS is not produced, the mullarian ducts flourish to female reproductive system.

Table 1. Development of Internal Uro-genital System of Male

S.No	Structure in the Embryonic Life	Fully developed Organ
1	Mesonephric Duct	Epididymis, Vas deference, Seminal vesicle, Ejaculatory duct,
2	Tubules connecting Testis to Mesonephric duct	Seminiferous tubules
3	Endodermal outgrowths of urethra	Prostate and Bulbo-urethral glands

Table 2. Development of Internal Uro-genital System of Female

S.No	Structure in the Embryo Life	Fully developed Organ
1	Distal ends of Paramesonephric ducts	Uterus and Vagina
2	Proximal portions of Paramesonephric ducts	Fallopian tubes
3	Endodermal outgrowths of the Vestibule	Greater and lesser Vestibular Glands

The internal genitals of both male & female embryos also remain undifferentiated until the 8th week, before differentiation all embryos are having an elevated midline swelling called genital tubercle. The tubercle consists of the urethral groove, a paired fold and labio-scrotal swelling

Table 3. Development of External Uro-genital system

S.No	Structures in the Embryonic life	Developed Organs in Male	Developed Organs in Female
1.	Genital tubercle	Penis	Clitoris
2.	Urethral Folds	Penile Urethra	Labia minora
3.	Labo-scrotal swellings	Scrotum	Labia majora
4.	Urethral groove	Fuses	Vestibule

Dvitiye Shitoshmanilarabhiprapachyamananam Mahabhutanam Sanghato Ghana Sanjayet
Yadi Pinda Puman stree chet Peshi napurnsakum cha Arbudam iti. (SU. Sha 3/15)

In the second month of gestation, the embryo takes the compact form in the shape of a *Pinda* (Knot) which leads to the male fetus, a muscle shape which leads to a female fetus and a tumor shaped which leads is a hermaphrodite child⁷. The reference we also available in *Charaka Shareer Sthana*, the sex determination occurs in to the fetus during this period. In the fetus there are same characteristics that are permanent (*Nitya*) and some are temporary (*Anitya*). The *Nitya* characteristics

determine the Masculine, Feminine or natural characters of fetus. The feature determine male or female sex are either of spiritual or maternal in nature sex determination caused by the dominance of one or other of these factor. This suggest that during the indifferent period the gonads are not still well developed. By interfering With AMH, it can influence the sex of offspring. This hormone interfered by activating the pituitary gland through inhalation of drug as in *Pumsavana Karma*.

Procedure of Pumsavana Karma

According to *Sushruta* the drug *Lakshmana*, *Vatashringa*, *Sahadeva*, *Vishwadeva* etc. should be pasted with cow's milk and 3- 4 drops of expressed juice should be instilled in right nostril to the woman desirous of a male baby. According to *Charaka*, two intact and healthy leaf buds of Banayan tree, seeds of *Dhanya masha* and yellow musturd should pasted with curd and is taken during *Pushya Nakshatra*. By *Asthang Hridaya*, the pregnant woman keeping the head on a doorsill should instill personally few drops of juice prepared by *Shalipisti* during *Pushya Nakshatra* in the right nostril. A small red hot idol of man made with gold is dipped in milk, or water and total quantity should be taken during *Pushya Nakshatra*. Here *Pushya Nakshatra* in suggested because it is the muscunanising planet due to its masculine properties. Other than this it is also having psychological effect on the pregnant woman hence chosen as auspicious plants for this work.

DISCUSSION

For the achievement of the object of sex determination the nasal rout was selected as the rout of drug administration. The anatomical and physiological pathway which might be causing their impact on the determination of sex during different period of intrauterine life. The olfactory nerve is closely associated with nose. The small pair of Nervi terminalis which is non medulated nerve fibers on them. There are some small groups of bipolar and multipolar nerve cells, each nerve runs along with the medial side of corresponding olfactory track & its branches on cribriform plate of the ethmoid bone and distributed to nasal mucus membrane. Controlling the nerve connected to brain close to anterior perforated substance. The drug used for *Pumsavana Karma* have an antidiuretic property. Posterior lobe of pituitary secrete ADH, it established that these drugs are also effect on pituitary gland. The posterior lobe of pituitary has vascular connection with hypothalamus. The veins communicates between these two structures pass one some unknown hormones or nuro secretory substance from hypothalamus to anterior lobe of pituitary. The anterior pituitary has its control on the activity of the glands. In *Ayurveda* said that rout of drug administration through transnasal route because "*nasa hi shiraso dwaram*" i.e. nose is the gateway of head. Through this efficacy of drug centers in to the body.

Conclusion

The differentiation of the sexual organs is primarily detected by genetic factors which may be medicated by endocrinal control. The different actions of the gonads on an embryo may be modified by several influencing the chromosomal constitution. The *Vatashringi* etc exerts their indirect effect through nerve terminates on posterior lobe and through hypothalamus on anterior lobe of pituitary. Activated pituitary

causes impact on secretions of ovarian and placental hormone of pregnant woman. The hormones probably bring masculinising and feminizing changes on the gonads of an embryo during the indifferent period of embryonic development. This is only a brief review of scientific study of *Pumsavana Karma*. But still needs embryological research to find out how actually the sex differentiation occurs is a mystery.

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