

Critical Analysis of *Mulsthana* of *Medowaha Srotas*

Review Article

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Abstract

According to Ayurveda *dhatu* (structural entities) are circulating through a channel known as *srotas*, these *srotas* carry *dhatu* (tissue elements or their constituent) undergoing transformation to their destination. Each *srotas* has 2 *mulasthan* (roots), which are different according to various text of Ayurveda. Different *Acharyas* describe roots of *Medowaha srotas* differently upto some extent, with this context the exploration of this concept is needed with respect to modern science which is mostly based on *Pratyaksha pramana*. An Ayurvedic principle, to treat the diseases of respective *srotas*, root site has to be treated. About *medowaha srotas*, out of two roots one is “*Vrikka*” is common in all text, but the second root is different with this context exploration is needed. When we correlate term *Vrikka* with kidney, we can't full fill the aspect of *Meda* (fat) metabolism but if *Vrikka* is correlates with kidney plus suprarenal gland then we can. In Structure suprarenal gland are attached to kidneys on superior side kidneys and suprarenal glands are made up of same tissue. The diseases of *Meda dhatu* given by compendia are correlated with diseases of hormone cortisol secreted by suprarenal gland, and cortisol is responsible for fat metabolism. Even suprarenal glands are not described in any text of *Ayurveda*. The second roots given by *Acharyas* are *Vapavahan*, *kati*, *Mansa* and *Jatharmeda* respectively all these structures are deposited with adipose tissue having adipocyte. During starvation this tissue is metabolized and used for energy. So, these all structures are roots of *Medowaha srotas*.

Key Words: *Vrikka*, *Vapavahan*, *Kati*, *Mansa*, *Jatharmeda*, *Asthavanindit*.

Introduction

Ayurveda goes back to a hoary past. In Ayurveda we find references not only to medical practice but also to elaborate medical theories. It can be said that the concepts mentioned in the text is found to be applicable on today's medical science context if explored well. As modern science is well developed and based on *pratyakshapraman*; it is need of today that the concepts of Ayurveda whenever possible should be interpreted on modern science parameters. So that it can be accepted as scientific tools to conduct further researches.

In Ayurveda concept of *dhatu* has been elaborated. *Dhatu* are the entities which support and nourish the body (1). These *dhatu* have its own *srotas*, where generation and transportation of that *dhatu* takes place. In short we say all corporeal entities in the body do not arise or decays without *srotas*. *Srotas* are defined

as transporting passages of *dhatu* undergoing transformation (2). It means that *srotas* generates, utilize and mobilize the *dhatu* which are undergoing transformation. Each *dhatu* has its own root sites mentioned in the compendia. The exploration of the concept of root sites of *srotas* is very essential so as to treat the diseases of respective *srotas*. To treat the disease of any *srotas*, we should treat the root sites (3). This is the principle of *Ayurveda*.

In the compendia with reference to *medodhatu* the root sites which are mentioned are not similar mentioned by all *Acharyas*. Slightly variations observed in their opinions. With this context the exploration of this concept is needed in context of modern science.

Aims and Objectives

Aim

To explores the concept of root sites of *medovahasrotas* in context of modern science.

Objectives

- To analyze different opinions mentioned in Ayurvedic literature in regards to *mulasthan* of *medovahasrotas*.
- To interpret its critical appraisal in context of modern Science.

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Materials & Methods

All the literature from Classical texts of Ayurveda .viz. *CharakaSamhita*, *SushrutaSamhita*, *Ashtanga Sangrah*, *Ashtanga Hridaya* and *Sharangdhar samhita* with the respective commentary has reviewed. Modern Physiology books were referred for review of modern perspective. The information of research database from various search engines, journals, *Ayurvedic samhita* and commentaries, books were referred for recent information. Critical analysis of available literature was done.

Observations

Charaka Samhita, *Sushrut Samhita* and *Vagbhat Samhita* are the major texts of Ayurveda called *Brihatrayi*. According to *Charaka Samhita vimansthan* all (corporeal) entities do not arise or decay without *srotas*. *Srotas* is the channel that transports only *Dhatu* under metabolic transformation (4). Some authors views that *srotas* can be interpreted as micro-vascular carrier, which specialized for exchange of the materials. Numbers of *srotas* are different by different *Acharyas*. The *srotas* have their own *mulasthan* or root site. *Chakrapani* mentioned *mulasthan* of *srotas* as *Prabhavasthan* means the anatomical seat of respective *srotas*. It is the main seat of pathological changes, having diagnostic value or it is the focus of treatment (5).

According *Charaksamhita* to *medovaha srotas* have their roots in *Vrikka* (kidneys) and *vapavahan* (omentum) (6). In *Sushrut Samhita* it has been mentioned that the root sites of *medovaha srotas* are *Vrikka* (kidneys) and *kati* (waist) (7). In *Vagbhat Samhita* root sites of *medovaha srotas* are *Vrikka* (kidneys) and *Mamsadhatu* (8). All the above references of *bruhatrai* revealed that kidneys are one of the common root sites of *medovaha srotas*. When we see these kidneys we do not find any direct correlation between kidneys & *meda dhatu* formation process.

In *Bruhatrai* endocrine glands are not mentioned separately. The diseases related to endocrine disorders are the diseases mentioned in the *srotas dushti lakshanas*. Suprarenal glands are two small yellowish bodies each situated immediately antero-superior renal pole. These glands are flat antero-posteriorly surrounded by connective tissue containing much perinephric fats; they are enclosed in renal fascia, and also called as adrenal Glands (9). These glands are placed in superior sides of kidneys means *Vrikka*, they are known as Suprarenal glands. Adrenal cortex develops from the mesonephros, which gives rise to the renal tissue, it secrets hormone known as corticosteroid (10). *Sushruta* says that kidneys are made up from *sarabhad* of *Raktt* (blood) and *Meda* (fats) (11).

Discussion

All the references shows that *srotas* is the aspect defined as transporting passages of *dhatu*s undergoing transformation. It means the *srotas* generates, utilize and mobilize the *dhatu*s which are undergoing transformation. All (corporeal) entities of

the body do not arise or decays without *srotas*. In *Sushrut Samhita Acharya* has mentioned two types of 1) *Antarmukh* and 2) *Bahirmukh srotas*. *Medovaha srotas* is one of the *antarmukh srotas* (12). *Dalhana* a commentator of *Sushrut Samhita* has mentioned in his commentary that all the structures through which *pran,anna, udaka, ras, rakta, mamsa, meda* etc.get circulated are called as *srotas* (13).

Medowah srotas has two root sites and these root sites are *Vrikka* (kidneys) and *vapavahan* (omentum) according to *Charaka Samhita, Sushrut Samhita* has mentioned as *vrikka* (kidneys) and *kati* (waist) and in *Vagbhat Samhita* it is said that roots are in *Vrikka* (kidneys) and *Mamsa dhatu*. When we refer the modern science, we find the supra renal gland; which is closely attached to the kidneys and appears as part of kidneys. This gland is also called as Adrenal Gland .The hormones of adrenal cortex are collectively known as adreno-cortical hormone or corticosteroids. Three groups of hormones are secreted by adrenal cortex viz. mineral corticoids, gluco-corticoids and sex hormone.

Gluco-corticoids are cortisol and corticosterone. Cortisol shows its effect on fat metabolism, it promotes mobilization of fatty acids from adipose tissue .This increases the concentration of free fatty acids in the plasma, which also increases their utilization for energy, cortisol seems also to have a direct effect to enhance the oxidation of fatty acids in the cells.

The mechanism by which cortisol promotes fatty acids mobilization is not understood. However, part of the effect probably results from diminished transport of glucose into the fat cells. It will be remembered that alpha glycerophosphate, which is derived from glucose is required for both deposition and maintenance of triglycerides in these cells and in its absence the fat cells begin to release fatty acids .The increased mobilization of fats by cortisol combined with increased oxidation of fatty acids in the cells helps to shift the metabolic systems of the cells in time of starvation or other stresses from utilization of fatty acids. Never the less the increased use of fatty acids for metabolic energy is an important factor for long term conversion of body glucose and glycogen.

Despite the fact that cortisol can cause a moderate degree of fatty acid mobilization from adipose tissue, many people with excess cortisol secretion develop a peculiar type of obesity, with excess deposition of fat in the chest and head region of the body giving a buffalo like tarso and a rounded moon face. Although the cause is unknown it had been suggested that this obesity results from excess stimulation of food intake, with fat being generated in some tissue of the body more rapidly than it is mobilized an oxidized (14).Thus this we can say *utapatti* (generation) *vahan* (mobilization) and *utilization* (oxidation) of fats is done in the influence of cortisol which is secreted by suprarenal glands.

Dusta medoroga described by *Charaka* are *ashthavnindit* viz. from 21st*adhayay* of *sutrasthan*, they are 1) *Atidirgha* (too tall) 2) *Atirasva* (too short) 3) *Atiloma* (too hairy) 4) *Aloma* (hairless) 5) *Atikarsha*

(too black) 6) *Ati gaur* (too white) 7) *Atisthul* (too corpulent) 8) *Atikrush* (too emaciated) (15) and the pre symptoms of disease *prameha*, which are *swedan* (sweating), *anga gandha* (emanation of foul smell) and *shithilangata* (flabbiness of the body), *shayya aasan swapne* (sleeping and leading an easy life) *hriday, netra, jiwha,* and *shrawan upadeho* (a feeling as if the cardiac region is covered with extraneous material, exudation of excreta from eyes, tongue and ears), *ghanaangata* (corpulence of the body), *kesh nakha ativriddhi* (excessive growth of hair and nails), *shitpriyata* (liking of cold things), *gal talu shos* (dryness of throat and palate), *mukh madhurya* (sweet test in mouth), *kar pad daha* (burning sensation in hands and legs) and *mutre abhghavanti pipalika* (swarming of ants on the urine)(16). All this symptoms in combination we say symptoms *medoroga*. (17)

The diseases related to adrenal gland like Cushing syndrome and Addison's disease. If we refer the etiopathology of Cushing syndrome we observed that it's a result of excess secretions of glucocorticoids. In Addison's disease there we observed low secretions of glucocorticoids and mineral corticoids. The symptoms of Cushing syndrome are truncal obesity, moon like face, back like buffalo humps, weakness, fatigue, emotional disturbance and osteoporosis (18). Most of symptoms of Cushing syndrome correlate with pre symptoms of *prameha*. The measure clinical symptoms of Addison's disease are generalized fatigueness, weight loss, weakness anorexia, nausea, vomiting, dizziness, hyperpigmentation in exposed area which is dark brown in color, increase thirst for cold liquids, hypoglycemia, hyponatramia and hyperkalemia, in most cases children usually present short stature. In females we observe the symptom of amenorrhea and loss of axillary and pubic hairs. Literature showed that when there is autoimmune destruction of the adrenal gland; 50% patients have circulating anti adrenal antibodies. Antibodies against the thyroid, parathyroid, gonads and pancreas may be present along with the symptoms of pernicious anaemia, vitiligo, non-tropical sprue and myasthenia gravis (19). Most of the observed symptoms of Addison's disease can be correlated with *asthavnindit*, which we commonly say as hormonal diseases.

From the above finding we come to know that there is relation of *medawah* with suprarenal gland. This finding is also supported by the previous researcher, (20) he stated that kidneys are not directly related with fat metabolism there is no clear evidence of this concept, if we take into consideration of structures situated above the kidneys I.e. suprarenal glands as a whole is *vrikka* (kidneys) then we will fulfil the aspect of fat metabolism. It shows that has assumed Supra renal gland as a part of kidneys only; not separately.

Second *mulasthan* of *medovaha* are different according to *Charak, Sushrut and Vaghbhatt*. According to *Charak* it is *vapavahan* (omentum). *Chakrapani* the commentator of *Charak Samhita* says *vapavahan* is deposition of *meda* in abdomen which he says as '*tail varti*' (oil wick) present in abdominal region (21). According to modern science it is organ called

omentum it is usually thin and cribriform but is always contains some adipose tissue, which in the obese may be massive in amount between the two layers of its anterior folds (22) Whereas, *Acharya Sushruta* called it as '*medodharakala*' (23). *Sharangdhar* says that *Vrikka* are made from *sarabhaga* of *rakt* (blood) and *meda* and they deposit this *meda dhatu* in abdomen (24). This is the abdominal fat, other than omentum. So from all the above references we come to know that most of the *meda* (fat) *dhatu* prepared in the body is deposited in abdomen and when starvation like condition occurs in body this abdominal fat is metabolized and used for energy, even in inanition condition atrophy of omentum occurs (25).

Same we can say about the *kati* as second *mulasthan* mentioned by *Sushrut* because most of the fat is also deposited in *kati* (waist) and at the time of starvation it is metabolized and used for energy, that's why *Vagbhat* quoted '*Kati Swapanam*' (empty feeling) symptom of *meda kshaya* (deficiency) (26).

Vaghbhat has quoted *mansa* as a second *mulasthana* because; according to *brihatrayi* coming *dhatu* is prepared by *poshakansha* of prior *dhatu*. *Charaka* quoted that *mansa* is further cooked by its own heat and unctuous properties is converted into *meda dhatu* means *mansadhatu* is root of *meda dhatu* (27). *Vagbhat* says if there will be deficiency and excess of prior *dhatu* then there will deficiency and excess of next *dhatu* (28). But this concept is exclusively belongs to *Ayurveda*, we can't correlate with modern science.

Conclusion

In the *Samhitas* endocrine glands are not separately mentioned. In this context there is no any structure is mentioned as suprarenal glands in the *Samhitas*, even kidneys and adrenal cortex are made up of same tissue. When we revealed the origination, *dushti* symptoms of *meda dhatu* which is directly involved in the *srotas* we observed that the root site of *medovaha* is *Vrikka* which is accepted by all *Acharyas*. This *Vrikka* is not separately correlated with kidneys, but this term includes kidneys with supra renal glands. Hormone secreted by *Vrikka* has influence on the *meda* (fat) metabolism.

Kati (waist) and *Jathar meda* (abdominal fats) are the deposited adipose tissue, which is metabolized during starvation. Even omentum is a structure which contains adipose tissue with some extent, and massive in obese, all this adipose tissue deposited in *kati, jathar* and *vapavahan* get metabolized during starvation for energy *Mansa* as a *mulsthan* of *medawah srotus* is by *kshirdadhi nyay*, which is given exclusively by *Ayurveda* text.

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