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A Review on the *Nadi Vikriti* w.s.r to *Pranavaha Strotas*

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ABSTRACT:

Treatment in Ayurveda is not all similar as the modern medicine. Ayurveda is based on various *siddhanta's* such as *tridosha*, *panchamahabhoota*, *sapta dhatu*, *dashvidha parikshya bhava* to name a few. The prognosis of a patient or the severity of a disease cannot be decided by a single thing. We use *rogi-rog pareeksha* to identify diseases. *Dashvidh pareeksha* is used to evaluate the patient, whereas *panch-nidan pareeksha* is used to diagnose the ailment. To determine a disease's cause, a questionnaire must be created. By simply sensing the radial artery's or any other pulsating artery's pulse, this diagnosis can be made with the use of *nadi vigyan*. *Hrudya*, *mahastrotas & rasvahai dhamniya* forms the moola of *pranavaha strotas* (Channels carrying vital life element). As the name indicates prana is something in which the life flows. In other words, *pranavaha strotas* play an important role in maintaining life energy, if not it can lead to death. So, it is important to know *nadi vikriti* which arises due to the physiological disturbances in the *pranavaha strotas*.in this paper we will review on the *nadi vikriti* with special reference to diseases related to *pranavaha strotas*, which can be achieved through appropriated knowledge and practice of its *nadi pareeksha* (Pulse diagnosis).

Keyword: *nadi vigyan*, *nadi*, *pranvaha strotas*, pulse

INTRODUCTION

Nadi vigyan is the knowledge of *nadi* or simply saying it is the science of pulsating artery. To understand it simply people correlate it with any pulsating artery or radial artery, but it is a much broader term in the ayurveda. From the perspective of common people, it might be understood just as pulsating artery, which might not be right term to define *nadi*. According to hatha yoga, there are 72,000 openings of *nadis*, of these, the *sushmuna nadi* is the only important one from the point of yogis through which they attain yogic power. If *sushmuna nadi* is excluded other *nadis* maybe involve in the normal & abnormal physiology.

MATERIAL & METHOD

Material related to *nadi vikriti* and *pranavaha strotas* was collected from classic ayurvedic literature & textbook.

Historical presence

All over the world physicians have emphasized on the examination of pulse since a long time. Its not a new topic which accidentally made its presence. The knowledge of *nadi pareeksha* (pulse reading) has been with us from a long time. Chinese physician has described the pulse examination in details before 2500 b.c. Chinese medicine was based on Ying and yang principles. They used to examine the pulse of several arteries with light, medium and strong compression of the vessel and reckoned the ratio

between pulse and respiration[1]. Hippocrates gave the details about the rate, amplitude, strength and rhythm of the pulse[2]. Details reference of *nadi pareeksha* is not available in *bruhat samhitas* such as *Charaka Samhita, Sushrut Samhita & Asthanghrridaya*. *Sharangdhar Samhita* was the first textual references which establishes the authenciation of *nadi pareeksha*.

Site of *nadi pareeksha*[3]

The radial pulse is examined as a routine. However, if necessary, the physician may examine the pulse at the following sites:

1.Wrist (radial artery)
2.Elbow (brachial artery)
3.Arm (brachial artery)
4.Axilla (axillary artery)
5.Ankle (posterior tibial artery)
6.Dorsum of foot (dorsalis pedis)
7. Neck (carotid arteries)
8. Infront of ear (superficial temporal arteries) i.e., right year- *pusha* Left ear – *yashwaswini* temples branch of superficial temporal.
9. Above the eyes (supra orbital)
10. Near the nose (facial artery branch)
11.Tounge (lingual)
12. Lips labial branch of facial artery)
13.Penis (branch of internal pudendal artery)
14. Perineum (branch of internal pudendal artery)
15. Apex beat

Site of pulse[4]

As mentioned earlier radial artery is felt as a routine and is important for diagnosing the following conditions:

- Physiological conditions like hunger, exercise, insomnia, and sexual activity. Even the main flavour of the food consumed can be predicted.
- Emotional states like dread, sadness, and restlessness.
- Digestive tract disorders, such as indigestion, abdominal lumps, and strong or weak digestion.
- Respiratory conditions including TB and asthma
- To identify the type of fever and anticipate the start of a fever.

Pranavaha strotas (Channels carrying vital life element)

There are 13 *strotas* described by the Acharya Charaka and 11 *yogwahi strotas* by Acharya *Sushrut*. Out of these *pranavaha strotas* is the first *strotas* in the sequence.

- Acharya Charaka : *Hrudaya & Mahastrotas*[5]
- Acharya Sushruta : *Hrudaya & Rasavahai Strotas*[6]

Table no. 1 *Pranavaha strotas*

Possible diseases & Diagnosis of different pulse for *pranvaha strotas* diseases[9]

1.***Jwar***

Pulse is hot and fast in the acute stage of fever. It speeds keeps increasing in proportion to the intensity of the fever[10]. Even in *Yogratnkar*, the pulse has been called *soushna* and *vegavati*[11]. If the first *nadi* moves at a slow pace and then gradually at a faster pace and if it starts moving *krodhpurvak*, then this *nadi* indicates a quick coming *jwar, sheetapurvak jwar or kampapurvak jwar*.This *nadi* represents the manifestation of *ekahikadi jwar*[12].

In *ekahik jwar*, sometimes the pulse leaves its place and pulsates and starts appearing at its place only after a moment. In *dvitiyak, trutiyak* and *chaturthik jwar*, it moves like a whirlpool of waves and its sequence remains[13].

2.***Atisar***

In *atisar*, the pulse is found to be slow, emaciated and moving like the motion of a *jaluka* at the time[14]. In the initial common stage of diarrhoea, there is accumulation of faeces, therefore the pulse is found to be thick in touch and moving at a very slow speed[15].

3***.Aanaha***

In *aanah vyadhi(*bloating with air in the stomach), the pulse moves hard and heavy[16].

4.*Gulma*

The *nadi* moves in vibrating motion. This kind of movement seems like that of a *paravat*[17].

5.*Visuchika*

In *visuchika*, vomiting and diarrhoea occur simultaneously which leads to dehydration and electrolyte disbalance at a quick rate. These two factors also hinder the blood circulation. Therefore, the pulse is very weak so much that sometimes the impulses are not available at all, and keep happening & moving at their places. *Nadi* leaving its place is a *arishta lakshana*, but in *visuchika* it is only the indication of *kruchta* of diseases[18]. Bhekvat(frog) like movements are seen[19].

6.*Vaman*

Atisar is the condition of lower G.I.T and *vaman* is the condition of upper G.I.T. Both are pathological condtiton of digestive tract. *Vaman* is a kapha dominating disease. Therefore, the *nadi* is *parusha* and cold in touch[20].

7.*Arsha*

Arsha is generated as a result of *agnimandya, vibandh* etc. and as result they are also found as symptoms as well. There is a predominance of air in the body and the pulse moves heavily, sometimes in a curved motion, sometimes

in a straight motion, sometimes in a slow motion. On touch, pulses are full, less force is available and relatively more movements of air are available[21].

8.*Kasa*

In this *vyadhi* the pulse rate is subtle, slow moving at the same speed[22].

9.*Shavasa*

Along with the increase in pulse rate, the rate of breathing is also found to be increased. The pulse appears strong and restless[23].

Pulse description According to Modern Science

In modern arterial pulses are palpated for evaluation of rate, rhythm, character and symmetry.

- **Rate and rhythm**

  Both are assessed by palpating the right radial pulse. Rate, expressed in beats per minute, is measured by counting the number of beats in a timed period of 15 seconds and multiplying by four. Normal sinus rhythm is regular, but heart rate varies with the respiratory cycle[24].

- **Character**

  This is defined by the volume and waveform of the pulse and should be evaluated at the right carotid artery. Pulse volume provides a crude indication of stroke volume, being small in heart failure and large in aortic regurgitation. The waveform of pulse is greater diagnostic importance[25].

- **Symmetry**

  Symmetry of the radial, carotid, femoral, popliteal and pedal pulses should be confirmed. A reduced or absent pulse indicates an obstruction more proximally in the arterial tree caused usually by atherosclerosis or thromboembolism[26].

- **Common arterial pulse pathologies**

  Bradycardia is defined as a pulse rate of <60bpm; tachycardia is a rate of > 100 bpm. The most common cause of bradycardia is medication, athletic conditioning and sinoatrial or atrioventricular node dysfunction[27]. In atrial fibrillation the pulse has no appreciable pattern and is often described as irregularly irregular[28]. A large pulse volume is a reflection of a large pulse pressure, which can be physiological or pathological. Low pulse volume may result from severe heart failure and conditions associated with inadequate ventricular filling such as hypovolaemia, cardiac tamponade and mitral stenosis[29]. Pulsus bisferiens, an increased pulse with a double systolic peak separated by a distinct mid-systolic dip, is classically produced by concomitant aortic stenosis and regurgitation[30] Pulsus alternans, beat-to-beat variation in pulse volume with a normal rhythm, may occur in advanced heart failure. Both of these signs are rare, however, and of limited relevance in contemporary practice[31]. Pulsus paradoxus is an exaggeration of the normal variability of pulse volume with breathing. Pulse volume normally increases in expiration and decreases during inspiration due to intrathoracic pressure changes affecting venous return to the heart. This variability is exaggerated when ventricular diastolic filling is impeded by elevated intrapericardial pressure. This is usually due to accumulation of pericardial fluid but can occur to a lesser extent with pericardial constriction and in acute severe asthma. If suspected, pulsus paradoxus can be confirmed using a blood pressure cuff; a fall of >10 mmHg between the cuff pressure at which Korotkoff sounds appear in expiration only and the cuff pressure at which Korotkoff sounds persist throughout the respiratory cycle is diagnostic[32]. In patients with atrial fibrillation, the rate should be measured by auscultation at the cardiac apex, because beats that follow very short diastolic intervals may create a 'pulse deficit' by not generating sufficient pressure to be palpable at the radial artery[33]. Water hammer pulse is a physical exam finding that describes a bounding, forceful pulse with a rapid upstroke and descent. It is seen in many physiological and pathological conditions but is most often associated with aortic regurgitation[34] .Fig.1[35]

DISCUSSION

Although a lot of *nadi* pathologies have been mentioned in the texts but there is no specific reference which mentions the *pranavaha strotas vikritis* specifically. *Pranavaha strotas moola* is represented by *hrudaya* and *mahastrotas*. So aforementioned diseases were taken on the basis of diseases covered under the *abhyantara rogmarga*. Diseases related to *Pranavaha strotas* like *jwar, atisar, arsha, shvasa* to name few can be observed easily and are pretty much common at opd levels. And it is our responsibility that we make a keen observations of these diagnostics pulse and increase our experience and knowledge. Detailed discussion is not given in the burhattrayi's regarding *nadi vigyan*. Although first reference Is observed in sharanghdhar smahita, it's not detailed like *ravan samhita & nadi vigyan by mahrishi kanad*. There is no specific collection for *pranavaha strotas* in the texts. The *nadi vikriti* of various diseases is scattered unevenly and is not arranged according to specific classification. Modern science also has the concept of pulse diagnosis but it is limited only to cardiovascular system and that too with the help of ECG.

CONCLUSION

Knowledge of *nadi* is not only limited to text. Its more kind of practical knowledge which will keep getting updated with the time. Even though diagnosis of disease can be done on the basis of various ayurvedic *siddhanta's* as mentioned earlier, like *rogi rog pareeksha & dash vidha pareekshya bhava*. *Nadi pareeksha* is like a diagnostic procedure whose experienced knowledge can be used by the physician to the benefits of patient. Ayurvedic physician are required to practice the knowledge of *nadi* at the OPD level. We discussed *pranavaha strotas* diseases and its relation with *nadi vikriti*. Same need to be done with other *strotas* and concise them at one place accordingly. It requires immense concentration, time and regular practice. It is a whole new science which requires a lot of awareness & recognition.

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Table no. 1 *Pranavaha strotas*

Acharya Charaka	*Acharya Sushrut*
Atisrishthamatibadha kupitam *alpamalpamabheekshna* *Shabdshool uchwasa*	*Aakrosh* *Vinaman* *Mohana* *Brahaman* *Vepan* *Maran*

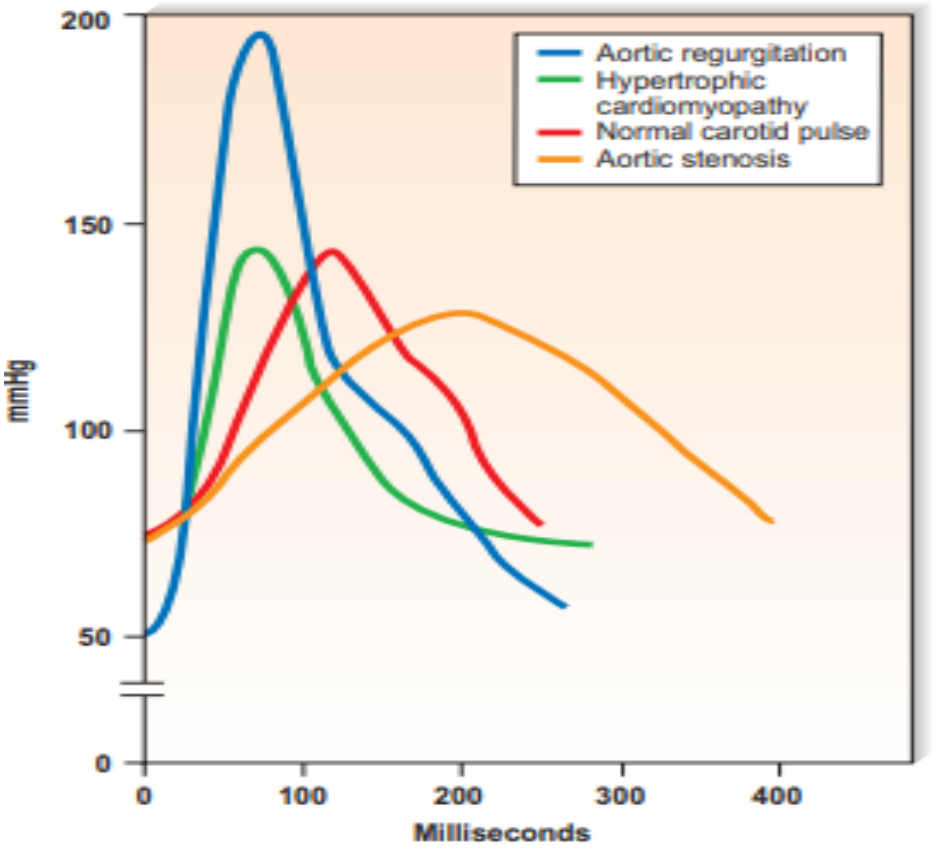

Fig.1[35]