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Understanding the *Nadi Vijnana* (Pulse diagnosis) with special reference to Modern Science

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ABSTRACT

'Rogamaadou Parikshet Tato Anantaram Aushadham' is the method of treatment as told by *Aachrya Charaka*. So it is important to examine the disease first. For that various tools are given by Ayurveda like *Dashvhdhpariksha*, *Ashtasthanpariksha* etc. From the *Ashtasthana Pariksha* one important point is *Nadi Pariksha*. It is very easy and patients friendly also. So, after coming towards physician, the first investigation is *Nadi Pariksha*. Here it is small attempt made to explain the *Nadi Pariksha* in relation to modern medicine pulse examination science.

Key words: *Dashavidha Pariksha, Ashtasthana Pariksha, Nadi Pariksha, Pulse Diagnosis.*

INTRODUCTION

Nadi Pariksha is one of the important aspects of *Ayurveda*. It is mainly explained *Aachrya Basavaraja* and *Aachrya Yogartanakar* very neatly. *Nadi Pariksha* understands the vibratory frequency of the pulse at various levels on the Radial artery. Subtle vibrations are read at seven different levels vertically downward that help in ascertaining various functions in the body. The pulse, when examined, reveals both physical & mental characteristics of the patient. This is interpreted in the form of symptoms along with their prognosis, which helps in understanding the cause. *Nadi* indicates all *Doshas* and whether they are in *Prakruta* stage or *Vikrutaavastha*. So, it is very

important to assess the *Nadi* of patient at first.

Definition of the word *Nadi*

It is channel existing within the body in the form of blood vessels.

Synonyms

Table 1: Synonyms of *Nadi*^[1]

Synonyms	Meaning
<i>Spura</i>	Nerves
<i>Dhamani</i>	Artery
<i>Sira</i>	Veins
<i>Rasayani</i>	Lymphatic vessels
<i>Snayu</i>	Ligament
<i>Jivitadnya</i>	It gives knowledge of life
<i>Jivakshi</i>	It is <i>Akshi</i> (eye/indicator) of life
<i>Hansi</i>	It is having continuous movement

Types of *Nadi*^[2]

Total eight types of *Nadi* are explained by *Basavarajiyam*.

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Table 2: Nadi Prakara

Nadi	Numbers	Location
Hastadwayagata	2	At the end of Prakoshtasthi, 3 inches below the Manibandha Sandhi
Padadwayagata	2	Below the Gulfa Sandhi
Kanthaparshwa	2	At the root of the neck in both sides around one inch level
Nasamoolagata	2	Around one inch at Nasamula

Nadi Pariksha Vidhi^[3]

A physician after attaining the state of mental stability and peace of soul and mind should examine the pulse of left hand of patient.

In case of females, the physician is advised to examine the pulse below the left thumb and as well as the pulse of left leg by applying all the knowledge gained from classics as well as self -experience.

First the elbow of the patient should be slightly flexed to the left and the wrist slightly bent to the left with the fingers distended and dispersed. In this position, physician should examine the pulse in the first three hours (*Eka Prahara*) of the morning. With the help of three fingers for examining pulse, the physician should decide the condition of *Doshas* in their respective places and the condition of the pulse, whether the pulse is slow, medium or fast and whether they are involved singly or in combination of two or all the three are at the same place. This way, the physician may be able to know the good and bad prognosis of patient.

Contraindications^[3]

- Just after the bath
- In hungry or thirsty state
- During sleep
- Just after awaking
- When the patient has anointed himself with oil

Nadi-Gati^[4]

Table 3: Movement of Nadi

SN	Nadi	Gati
1.	Vata	Snake and leech
2.	Pitta	Crow and Frog
3.	Kapha	Swan, Peacock, Pigeon etc.
4.	Vata-Pittaja	Snake and Frog
5.	Vata-Kaphaja	Snake and Swan
6.	Pitta-Kaphaja	Monkey and Swan
7.	Sannipataja	Moves very fast with intermittent pause
8.	Agnimandya	Slow
9.	Vata Jwara	Cold, curvilinear
10.	Kapha Jwara	Slow and steady
11.	Vata-Pittaja Jwara	Curvilinear, and bit tremulous and hard
12.	Vata-Kaphaja Jwara	Slow and slight
13.	Pitta- Kaphaja Jwara	Weak, steady and cold

Arishta Lakshanas^[5]

Table 4: Arishta Lakshanas

Nadi	Arishta
Death within 3 hours	Pulse moves like finger of shawl, coinciding with perspiration and cold. Pulse appears & disappears alternatively and moves like a drum which is shaped like an hour glass when there is a death within a day.
Death within 2 days	Pulse carrying excessive amount of metabolites and cold to touch indicates death within 2 days.
Death within 3 days	Pulse not felt at the proximal end, cold in the middle and appears tired at the terminal part.
Death within 7	Pulse becomes speedy at the proximal end, sometimes cold and sweaty and slimy skin

days	indicates death within 7 days.
Death within 15 days	Pulse is hot, fast and body is cold and patient takes mouth breath.
Sudden death	Pulse adopts curvilinear motion like that of lightning and alternatively appears and disappears.

History of Pulse Examination in Modern Science

Pulse represents the tactile arterial palpation of the heartbeat by trained fingertips. Study of pulse is known as **Sphygmology**. Pulse measurement is equal to heart beats. It can be palpated in any place that allows an artery to be compressed near the body surface

The first person to accurately measure the pulse rate was Santorio. Santorio who invented the pulsilogium, a form of pendulum, based on the work of Galileo Galilei.

Physiology

Claudius Galen was perhaps the first physiologist to describe the pulse. The pulse is an expedient tactile method of determination of systolic blood pressure to a trained observer. Diastolic BP is non palpable and unobservable by tactile methods, occurring between heartbeats.

Pressure waves generated by the heart in systole move the arterial walls. Forward movements of blood occurs when the boundaries are pliable and compliant. These properties form enough to create a palpable pressure wave.

Table 5: Pulse Points^[6]

SN	Pulse Point	Area of Palpation
1.	Temporal Pulse	Over the Temple in front of ear on superficial temporal artery
2.	Facial Pulse	On the facial artery at angle of jaw.
3.	Carotid Pulse	In the neck along anterior border of sternocleidomastoid muscle on common carotid artery
4.	Axillary Pulse	In the axilla, over axillary artery

5.	Brachial Pulse	In Cubital fossa along medial border of bicep muscle on brachial artery
6.	Radial Pulse	Over the thumbside of wrist between tendons of brachioradialis and flexor carpiradialis muscles on radial artery.
7.	Ulnar Pulse	Over little finger side of wrist
8.	Femoral Pulse	In groin of femoral artery
9.	Popliteal Pulse	Behind knee, in popliteal fossa
10.	Dorsalis Pedis Pulse	Over the dorsum of the foot
11.	Tibial Pulse	Over the back of ankle, behind medial malleolus, on posterior tibial artery.

Observations during examination of pulse^[6]

1. Rate - Number of pulses per minute. Counted for at-least for 30 seconds.
2. Rhythm - Rhythm is the regularity of pulse. It refers to interval between beats
3. Character - it denotes the tension on the vessel wall produced by the waves of the pulse. It is usually elucidated at right carotid artery.
4. Volume - Volume is the determination of movement of the vessel wall, produced by the transmission of pulse wave.
5. Condition of Blood Vessel Wall - It is assessed by feeling the radial artery and rolling it against the underlying bones.
6. Delayed Pulse - Sometimes the arrival of pulse in certain peripheral arteries is delayed.
7. Force - Force is also known as compressibility of pulse. It is rough measure of systolic blood pressure.
8. Form - A form or contour of pulse is palpatory estimation of arteriogram.
9. Equality - Comparing pulses at different places gives valuable clinical information

Table 6: Abnormal Pulse Conditions^[7]

SN	Abnormal Pulse Conditions	Meaning
1.	Pulsus Deficit	Abnormal condition in which the pulse rate is less than heart rate. E.g. Atrial fibrillation
2.	Pulsus Alternans	Abnormal condition in which amplitude of every second wave in pulse tracing is relatively smaller E.g. Severe myocardial diseases
3.	Anacrotic Pulse	Abnormal condition characterized by a slow ascending limb which has a notch called anacrotic notch E.g. Aortic stenosis
4.	Pulsus Paradoxus	Abnormal condition in which pulse becomes very strong and very weak alternatively in relation to respiratory cycle.
5.	Thready Pulse /Pulsus Parvus	Abnormal condition in which volume of pulse becomes very feeble and hardly felt at the arteries.
6.	Water Hammer Pulse/ Collapsing Pulse	Abnormal condition in which pulse have rapid upstroke and as well as rapid downstroke. Eg. Aortic regurgitation
7.	Pulsus Bisferiens	Abnormal condition in which 2 beats per cardiac cycle, unlike the dichrotic pulse. E.g. Aortic valve diseases.

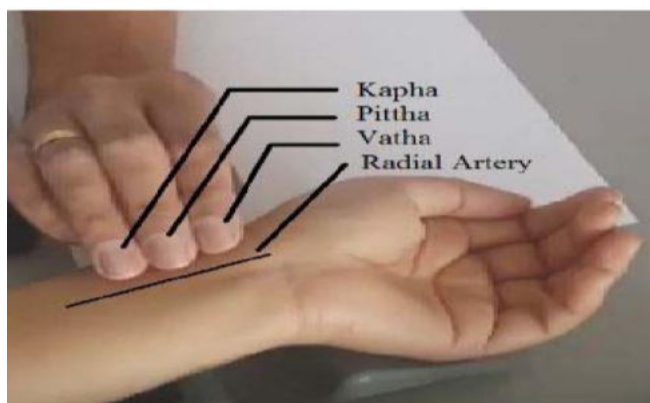
DISCUSSION

Nadi Pariksha is one of the important parts of investigation. It comes under *Ashta-sthana Pariksha*. *Nadis* are innumerate in our body. But for investigation we have to select the specific *Nadis*. Like pulse of radial region, femoral region, popliteal region, axillary region, cubital region, carotid region etc. among all these mainly the pulse of radial region,

femoral region is used for *Nadi Pariksha*. The pulse of brachial artery in cubital fossa is mainly used for checking the blood pressure. The *Nadi Pariksha* for females should be always done in the left hand because in *Vedas* it is considered as there is *Kurma* (tortoise) in our body (it is hypothetical concept). In male body the *Kurmamukha* is upwards and in the females the *Kurmamukha* is downwards. As *Mukha* is downwards the *Kurma* leftleg comes in left hand of female so it is must to check the left hand *Nadi* of female. During examination of pulse, physician should be calm and stable minded. He has to examine the movement of the *Nadi* very keenly. Because on this movement only physician can diagnose the diseases.

As explained above the conditions like Pulsus Deficit in which the *Nadigati* is just like leech, so we can consider it as a *Vata* predominant *Nadi*. The condition Pulsus Alternans is characterized by less amplitude of second wave of pulse; it means *Nadigati* is just like snake and swan, so we can consider it as *Vata-Kapha* predominant *Nadi*. In condition Pulsus Paradoxus it is observed that pulse becomes very strong and as well as very weak alternatively in relation to respiratory cycle this is mainly seen due to *Vatakshaya* condition. So it comes under *Vata* predominant *Nadi* condition. In the condition Thready Pulse/Pulsus Parvus, the pulse is very feeble and hardly felt. It is condition in which the *Vata Kshaya Lakshanas* are observed. So *Nadigati* will be like *Kapha Nadi*. In the condition of Water Hammer Pulse the rapid upstrokes and down strokes are observed due to *Pravruudha Vata Avastha*. The *Nadigati* is like Snake. The condition where 2 beats per cardiac cycle is seen is called as *Pulsus Bisferiens*. It is nothing but *Pitta* predominant *Nadi*. Because it's *Gati* is nothing but like the frog. Anacrotic Pulse can be correlated to *Vata Kshaya Lakshanas*.

The *Nadi Pariksha* is contra indicated just after bath, in hungry state, in thirsty state because in all these situations *Vata* is in *Prakopita Avastha* only so physician can't get proper *Doshaavstha*. In the same way during sleeping condition, just after awaking, *Snehaliptaavastha*, there is *Kapha Prakopita Avastha* so physician can't get proper *Doshaavstha*.



CONCLUSION

The *Nadi Pariksha* is one of the important parts in Ayurveda science. Still, it is not practiced by many *Vaidyas* due to insufficient knowledge. The part of *Nadi Pariksha* needs more development in relation to modern science. It is responsibility of upcoming *Vaidyas* to develop this part for globalization of *Ayurveda*.

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