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Conceptual Study On Nadi Vigyana

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INTRODUCTION

Nadi pareeksha is one of the ancient diagnostic procedure which lies under *Ashtavidha pareeksha* used since the ages back . The main diagnostic procedure under Ayurveda are *Darshana Sparshana and pareeksha .Nadi Pareeksha is one of the tool for the Rogi Rog Pareekshan* .

Nadi means Pulse and means *Pareekshan* Examination , so *Nadi Pareekshan* is taken as "Pulse Examination" which is used as one of tool in emergency and clinical conditions . It has it own individual identity in the field of medical science . *Nadi pareeksha* is the science of meditation as meditation inproves the sensitivity and sharpens the memory .it helps the physician to stay clam and alert .

Nadi Pareeksha can be understood by the vibrations carried out by the blood which circulates to every part of the body . *Acharya Sharangdhara* was the first to describe about *Nadi pareeksha* . *Acharya* indroduced techniques to diagnose the *prakruti* in *prakruta* or *vikruta* forms . Further Yogratnakar takes the special place in thefeild . he explains about the various speeds ,rythms of pulse useful for pulse examination used in diagnosis and prognosis .

AIMS AND OBJECTIVES

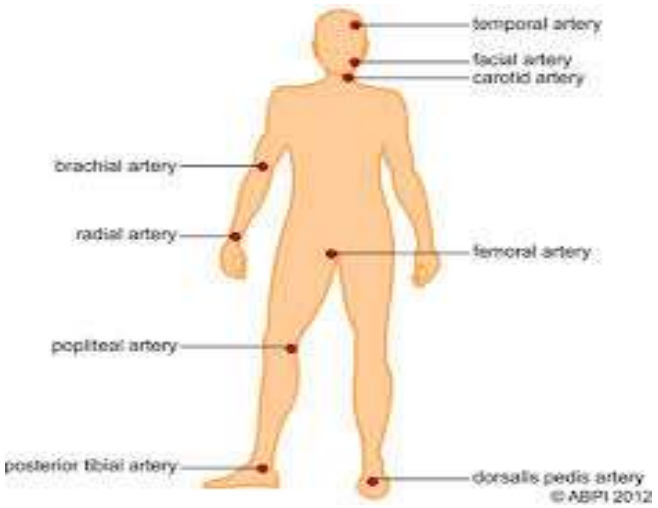
1. To make a literary overview of *Nadi pareeksha* as described in Ayurveda and its diagnostic applicability in Modern Science .
2. To create strong belief regarding old concepts and their authenticity comparing it with modern school of thoughts among the others .

MATERIAL AND METHODS

1. The main objectiveof the research work is to undertake the study of methods of *Nadi pareeksha* .
2. To go through the various literatures regarding the topic of research .

LITERARY REVIEW

The knowledge about *Nadi* can be found in all the literatures ,but the detailed study on *Nadi Pareeksha* is found in and after *lagu trayees* . They showed there immense contribution in science . In Healthy Condition : The *Nadi* is steady and forceful. In other conditions there is alteration in the pulse like in various dhatu kshaya and vriddhi conditions, mandhagni ,tikshanagni , vishmagni . It alters with the change in ahara and vihara.



- Locations to examine Nadi (8)

1. Angushta moola (Radial Artery)
2. Posterior part of Gulpha Sandhi (Posterior Tibial Artery)
3. Below the Ear (Posterior Auricular Branch of External Carotid Artery)
4. Kantha Pradesha (Common Carotid Artery)
5. Nasamoola (Branch of External Carotid)
6. Netra Nadi (Superficial Temporal Artery)
7. Jihwa Nadi (Lingual Branches of Carotid Artery)
8. Medra Nadi (External Illium Artery) or (superficial ext Pudendal Artery)

Further Angushta moola is quoted as "Jiva nadi " as it is very easily palpable in all sizes of patients can be palpable in all the positions and comfortable to palpate in all sexes .

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RULES TO BE FOLLOWED BEFORE EXAMINATION

QUALITIES

PHYSICIAN	PATIENT
1. NIROGYA	TYAGYAMOOTAPURISHASYA
2. STHIRA CHITA	SUKHASANASYS
3. SUKHASANA	ANTAJANU KARASYAPI
4. NIRMALA BUDHI	

DISQUALITIES

PHYSICIAN	PATIENT
1. MADHYAPEETA	SADHYASNA NASYA
2. CHANCHALATAMAK	BUKTASYA
3. MALAMOOTRAVEGA YUKTA	VYAYAMA APRANTA
4. LOOBHAKRANTA	

- PROCEDURE

➢ EXAMINATION SHOULD BE DONE IN SITTING AND SUPINE POSITION.

➢ FEMALES – LEFT HAND
MALES – RIGHT HAND

➢ EXAMINATION SHOULD BE ONE FINGER AWAY FROM THE ROOT OF THE THUMB.

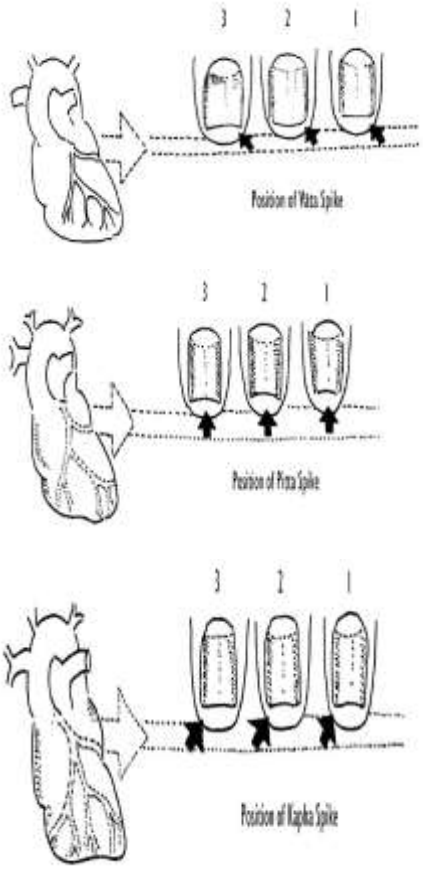
➢ Patient and physician should sit comfortably facing each other, preferably at the same height; it is advisable to examine the pulse of the patient in sitting position.

➢ The physician should sit on the right side of the patient and hold the right hand of male or left hand of female at wrist with his right hand while supporting the arm of the patient at the elbow with his left hand.

➢ The physician should keep three fingers i.e. index, middle, and ring of his right hand on the radical pulse just adjacent to the 'styloid' process situated just 1 finger below the root of thumb. The position of the fingers should be such that index finger lies adjacent to the process.

➢ The physician should examine the pulse by applying gentle and equal pressure of his three fingers on the pulse.

➢ **Time of *nadi* examination**
The pulse should be examined in the morning on empty stomach in a calm and peaceful atmosphere, but can be examined at any time in an emergency. Examined preferably when the patient is sitting in upright position. The patient should be calm.



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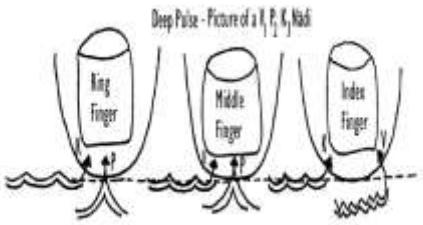

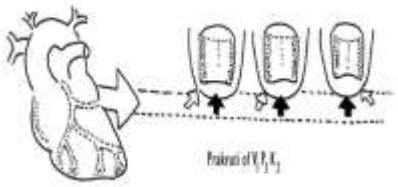

- **Understanding the PULSE (*NADI*)**

One should consider the following parameters on which it is based:

Parameters	***VATA***	***PITTA***	***KAPHA***
Location	Index finger	Middle finger	Ring finger
Speed	Rapid	Medium fast	Slow / Steady
Rhythm	Irregular	Regular	Regular
Force	Low +	High +++	Moderate ++
Volume	Low	High	Moderate
Temperature	Cold	Hot	Warm to cool
Vessel wall	Rough, hard	Elastic, flexible	Soft thickening
Characteristics	Fast, feeble, cold, light, thin, disappears on pressure	Prominent, strong, high amplitude, hot, forceful, lifts palpating finger	deep, slow, broad, wavy, thick, cool or warm, regular

Gati	*Sarpa* (Cobra)	*Manduka* (Frog)	*Hamsa* (Swimming Swan)
Vega (Rate)	80-95	70-80	50-60
Tala (Rhythm)	Irregular	Regular	Regular
Bala (Force)	Low +	High +++	Moderate ++
Akruti (Tension and Volume)	Low	High	Moderate
Tapamana (Temperature)	Cold	Hot	Warm to cool
Kathinya (vessel wall)	Rough, hard	Elastic, flexible	Soft thickening

- **Practical demonstration of pulse**

To make the study easier and to understand this concept, the three main divisions are made for the movement of the pulse, which illustrates the gait of various animals, birds and reptiles.

In vata - the pulse movement is compared to the gait like of leech or a serpent.

In pitta - the gait will be like of a sparrow, crow or frog.

In kapha - the gait will be like that of a swan, elephant or pigeon.

These may be present in any combination and should be understood accordingly.

Vata pitta kapha pulse or "Sannipataj nadi"

This type of pulse categorizes in the patient in which all the three dosha are imbalanced. This is demonstrated by the alternative slow, intermitted, wickedness and indecisiveness movements.

Different *Acharyas* have mentioned different views but *Acharya Sharanghdhar* describes the movement of *sannipataj* pulse as similar to the gait of *laavaka and titthiri* birds because these birds flutter rapidly for some time and on a sudden, they stop their movements together, to repeat their quick movements once again.

Another saint has compared the movement of *sannipataj* pulse with that of a mouse that has the tendency to run here

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and there, forwards and backwards. A movement of mouse is sometimes rapid and some time it is not moving.

Nadi in Different States of Body & Mind

- Happy person: Pulse is steady
- When satisfied pulse is steady
- Hungry Persons: Pulse is tremulous
- During Sexual urge and anger the pulse is fast
- Pulse is weak in worry, fear, sorrow and disgust.
- Pulse in Fever: In fever, the pulse becomes fast and is felt hot to touch.
- Pulse in Psychological conditions: In condition of anger and excitement, pulse becomes fast.
- Pulse in Digestion: In the state of poor digestive power, the pulse becomes very slow and low in volume.
- In '*Ama'* it becomes heavy.
- In a person whose digestive power is good, the pulse is felt light and fast.
- In a hungry person the pulse is felt inconsistent in rate, rhythm and volume. In a person with satiety, the pulse is consistent.
-
- Pulse in *Dhatu* depletion: In the state of diminished tissues, the pulse becomes very slow and low in volume.

- **PULSES IN VARIOUS CONDITIONS**

- Pulse In Healthy state : In this state the pulse is *sthira, valvati, amanda, achanchala* and moves atleast 30 times without any disturbance in the rhythm .

- Effects of *Dhatus* on Pulse : *Dhatus* are seven in number . Dearrangement in the *dhatus* cause *kshaya and vriddhi* and this effect reflects on the pulse.

- Effect of *doshas* on pulse : Normalcy and aggravation of dosas are responsible for health and disease. *Chapala , manda , vakra* etc are the irregular pulse are generated by the various combinations of *doshas.*

- Effect of *Agni* on the Pulse :According to the efficacy , agni is divided into four types i.e manda, tikshana, vishama and sama based on increase and decreased stages of kapha , pitta , vata and also on their balanced conditions .

- Effect of diet on the Pulse : Food is regarded as one of the upsthamba .It nourishes the body and simultaneously in different conditions it effects the pulse also . In hunger state vata aggravates so pulse increases, whereas after taking food kapha dosha increases. So the pulse becomes steady and fixed. The food carries various rasas. These rasas effect the doshas of the body which causes either prokapa or shaman of the dosha.

Dosha	Prakopaka Rasas	Shaman Rasas
Vata	Katu Tikta Kashya	Madura Amla Lavana
Pitta	Amla Katu Lavana	Madura Tikta Kashya
Kapha	Madura Amla Lavana	Katu Tikta Kashyas

The effect of diet containing various taste reflects on the pulse as explained in the literature below:

Madura Rasa	Resembles the gait of a swan
Amla Rasa	Resembles the gait of a frog
Lavana Rasa	Straight and Speedy Pulse
Katu Rasa	Resembles the gait of large black bee
Tikta Rasa	Smooth pulse
Kashya Rasa	Hard Pulse
Mixed Rasas	Pulse with mixed sings

- Effect of Vihara on the Pulse : Vihara have its effect on pulse . various activities like bathing , exercise sex indulgence etc .

- Effect of emotions on Pulse : The emotional factors like *kama krodha udvega* increases the heart rate therefore there is increase in pulse rate . Here, in this context Sharandhara explains that the deformity in the pulse due to emotions disappears soon and the prognosis in the condition is not taken to be bad .

- Effect of Various diseases on Pulse : Pulse plays an important role in the diagnosis of the disease . Pulse alters in every disease and at different stages ()of the same disease . In all the medical sciences lot many description is found on this topic . Few examples are:-

Typhoid	*Slow compared to other febrile conditions , infrequent , slow pulse during post febrile conditions .*
Malaria	*Slow pulse.*
Sunstoke	*Rapid full pulse .*
Perforated Peptic ulcers	*Strong pulse increasing steadily.*
Hepatic disease	*Rapid pulse.*
Goiter	*Slow pulse .*
Broncial Asthama	*Small ,Rapid ,Irregular and intermittent pulse.*

PROGNOSIS AND PULSE

Pulse examination represents the condition of the heart . So pulse examination plays the important role in the prognosis of disease . Pulse represents the severity of the disease and even death . Acharya Charaka in the Indriya Sthana

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mentions that "Absence of pulsation is fatal in such organs of the body which pulsates constantly ".

TYPES OF PULSES

Types of Pulses mentioned in Ayurvedic literature are:-

Atisuksma	*Very thin*
Anrju	*Crooked or oblique*
Balavati	*Strong, forceful*
Cancala	*Fickle or agile*
Capata	*Tremulous*
Dirgha	*Long*
Durta	*Speedy*
Durbala	*Weak*
Gariyasi	*Extremely Heavy*
Gurvi	*Heavy*
Jada Gambhira	*Heavy*
Ksina	*Feeble*
Kathina	*Hard*
Karksa	*Hard*
Khara	*Hard and rough arterial wall*
Kutila	*Irregular*
Kosna	*Somewhat hot*
Laghvi	*Light*
Mrdu	*Soft*
Manda	*Slow*
Madhya Gati	*Average Speed*
Manojagamana	*Slow and Steady*
Manthara	*Infrequent*
Mandatara	*Slow*
Niscala	*Very Slow*
Picchila	*Slow and Sticky*
Plava	*Jumping*
Pustihina	*Very low tension*
Prakampana	
Pravata	*Forceful*
Rju	*Straight*
Samaya	*Regular pulse*
Prathula	
Sosna	*Somehow hot*
Shita	*Cold*
Sighraga	*Speedy or too rapid*
Sthira	*Fixed – steady*
Sthila	*Week, feeble*
Surata	*Straight*
Sukma	*Fine and thin*
Sthula	*Thick*
Stmita	*Slow and watery feeling*
Snighdha	*Slow, forceful and Soft*
Tantula	*Thread*
Tantusannibha	*Thread*
Tivra	*Speedy as in tachycardia*
Trutita	*Irregular pulse with pauses*
Utpaluta	*Jumping*
Vakra	*Curvilinear motion or irregular*
Vegavati	*Fast, vehement*
Vyakula	*Fast speed*
Vikala	*Speedy*
Visama	
Visada	
Vispharga	
Visirna	

MODERN CONCEPT

PULSE

Pulse represents the tactile arterial palpation of the heartbeat by trained fingertips. The pulse may be palpated in any place that allows an artery to be compressed against a bone.

PHYSIOLOGY OF PULSATION :

Pulse is a pressure wave that travels along the vessel wall. The factors responsible for the pulse are –

A. The intermittent flow of blood from the heart i.e the stoke volume output.
B. The resistance to outflow of blood from the arterioles into the capallaries .
C. The elasticity of the arterial walls .

MECHANISM OF PULSE FORMATION

For clinical examination of the pulse the radial artery is selected as it is easily accessible and remains against the bone which works as hard bed when the pressure is used at the time of examination. It is recognised due to its position in the side of the thumb . Distensibility of the vessels is controlled by their content of elastic and collagen tissues and smooth muscles . Systolic ejection distends aorta and its large branches, sub-sequent to the closer of the aortic valve to the termination of the systole of left ventricle of the heart . When we examine pulse (at radial artery) we feel a wave type movement commencing in a series.

Pulse can be described as the expansion and elongation of arterial walls passively produced by the pressure changes during systole and diastole of the ventricles.

Fundamentally , the pumping action of the heart generates blood flow . Pressure results when the flow is opposed by resistance . By the examination of pulse, various physiological and pathological stages of the heart can be observed.

CHARACTERSTIC OF PULSE

Rate :- Normal pulse rates at rest, in beats per minute (BPM)

newborn (0–3 months old)	**infants (3 – 6 months)**	**infants (6 – 12 months)**	**children (1 – 10 years)**	**children over 10 years & adults, including seniors**	**well-trained adult athletes**
100-150	90–120	80-120	70–130	60–100	40–60

Rhythm :- A normal pulse is regular in rhythm and force. It indicates whether the beats are equidistant or not . Two types of rhythms are

1. Regularly irregular
2. Irregularly irregular

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Volume :- The degree of expansion displayed by artery during diastolic and systolic state is called volume.
Force :- It is the approximate measure of the systolic pressure.
Character :- The nature of the pulse wave i.e the rise , summit fall of the particular wave is recognised as character
Condition of the Arterial wall :- The thickness of the wall is estimated by rolling the artery on the underlying bone of the wrist . In young age , arteries are soft difficult to palpable, in old age , arteries are easily palpable .
Temperature of the skin :-The temperature over the part where the pulse is being examined is also felt with association of clinical examination of the pulse .

RECORDING OF PULSE

Pulse (Radial pulse) is recorded with the instrument called Dudgeon's Sphygmograph.

CLINICAL FEATURES

In the examination of pulse following points are taken under consideration:

1. Rate
2. Rhythm
3. Volume
4. Force
5. Character
6. Condition of arterial wall
7. Temperature of skin over the pulse

PATHOLOGICAL CAUSES OF PULSE RATE :

Tachycardia (Higher Pulse Rate)	Bradycardia (Lower Pulse Rate)
Uraemia	Heart block
Tobacco	Opium Poison
Inflammatory or degenerative condition of the heart	Heart block
Malignant diseases	Pressure on vagus nerve

Pulses in Various Diseases

Alcoholism	Full Pulse
Angina Pectoris	High tension Pulse
Anxiety	Feeble and Low Tension Pulse
Bacillary Dysentery	Rapid and Small
Hepatic Diseases	Rapid Pulse
Hypertension	Fast Pulse
Indigestion	Intermittent
Intestinal Obstruction	Rapid Feeble Pulse
Myxodema	Slow Pulse
Pneumonia	Rapid pulse
Renal Coma	Hard Full Pulse
Rheumatic Fever	Soft and Rapid 100-120 pm
Sepsis	Rapid Pulse
Sunstroke	Rapid full Pulse
Tuberculosis	Rapid and Feeble Pulse
Typhoid Fever	Slow Pulse

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