

Critical Analysis of Valvular Heart Diseases And Cardiac Arrhythmias With Reference To *Ayurvedokta* Pulse Examination

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ABSTRACT

In ancient times the only tool to assess cardiac physiology and pathology was the pulse examination. With each heart beat, as the blood is pumped in systemic circulation, the pressure is generated all along the arterial tree which is felt as pulse. Change in the rhythm of the heart also alters the rhythmic wave force of the pulse which can be felt. Valvular heart diseases exists in two forms as stenotic or regurgitant defect. Valvular heart diseases ultimately leads to cardiac arrhythmias. Most of the sudden cardiac deaths are caused by arrhythmias. They are broadly classified into two categories such as tachycardia and bradycardia. Whereas these entities can now be very well diagnosed through modern diagnostic tool such as electrocardiography and echocardiography, but still pose a diagnostic problem for physician practicing in remote area. Review of literature on ancient pulse examination shows that Ayurvedic physicians not only diagnosed cardiac arrhythmias through pulse examination but also

accurately given its prognosis. The present study aims to bring out this hidden description of valvular heart diseases and cardiac arrhythmias given in ayurvedic science of pulse examination and to interpret it in the light of advances made in modern medicine. After thorough discussion, it is concluded that *Ayurvedokta* 'Mathita' (churning) type Pulse is invariably observed in Valvular heart diseases due to turbulence of blood flow through stenotic heart valves whereas 'Bhramar Gati' (bee movement) and 'Damaru Gati' (Fast Musical drum beating) like Pulse is observed in cardiac arrhythmias. *Ayurvedokta* Pulse examination provides the first hand diagnosis of Valvular heart diseases and arrhythmias to the physician later to be confirmed by ECG and ECHO. These findings should be incorporated in the curriculum of modern day Ayurvedic students.

INTRODUCTION

Cardiac Cycle As Per Ayurveda

- *Hrudayat Ankuchanat Raktam Koshthe AnyataHa Pradhawati / Tat Sanchite TatUttham Cha Pravishya Cha Aprasu Api / Hrudayat Phuphusam Yati PunHa Vishanti Hardiki / Koshthe Cha Aagatya Wame Cha PunHa Wegen Dhamanim/ Mahadhamnim Ashritya Sharire Cha anudhawati// Hrudyat Phuphusam Yati Phuphusat Hrudaye PunHa/ Tat Ashritya Akhilam Kayam Paramparyen Dhawati // (Nadi Tantra)*
- During contraction of heart, blood is ejected into chambers (*Hrudayat Ankuchanat Raktam*)
- After filling the chamber completely, another chamber is filled (*Tat Sanchite Tat Uttham Cha Pravishya Cha Aprasu Api*).
- Then from the heart, blood enters the lungs (*hrudayat Phuphusam*). And from lungs it enters the heart (*PunHa Vishanti Hardiki*).
- After receiving the blood in left chamber (*Koshthe Cha Aagatya Wame*), it is again ejected forcibly into the Aorta (*Cha PunHa Wegen Dhamanim*).
- From Aorta, the blood is circulated in the entire body (*Mahadhamnim Ashritya Sharire Cha Anudhawati*).

- From body again reaches to heart, from heart' to lungs and from lungs to heart (*Hrudyat Phuphusam Yati Phuphusat Hrudaye PunHa*) and the cycle is repeated (*Paramparyen Dhawati*)

What is Pulse ?

- Forward movement of blood through the pliable and compliant boundaries of arteries during systolic contraction of the heart generate a **palpable blood pressure wave** called **Pulse**.
- The pulse examination is tactile determination of systolic blood pressure (heart beat) to a trained observer. Diastolic blood pressure is non-palpable and unobservable by tactile methods, which occurs between heartbeats.
- **Though Pulse rate is the expansion and contraction rate of arteries but it is dependent of heart contraction.**

Pulse Generation –Ayurvedic View

- *Rudhirat Plawwegen Dhamani Sapandate MuhuHu/ Utplaw Prakruti Bhedat BhedaHa Syat Spandansya Hi // (Nadi Tantra)*
- Artery pulsates (*Dhamani Sapandate*) due to pressure of the blood (*Rudhirat Plawwegen*) in it.

- The variation in pressure (*Utplaw Prakruti Bhedat*), generates different pulsations (*BhedaHa Syat Spandansya*)

Diagnosis of Valvular Heart Diseases – Ayurvedic Way

- Only through pulse examination in ancient times.
- NO ECG/ Echo like investigation in the past to diagnose.

Pulse in Heart Diseases

Hrit RoginaHa Sukathina Mathita NiHi Anga / Nadi Drutam Wahati Sa Pari Nimna Madhya //

Hrit Roge Tu Bhawet Nadi Rajhansa GatiHi Yatha / Gamane Vidruta Tiwra Kwachit Rodhwati GatiHi /

Tiwre Kadachit Wahati Kadachit Mandaga Bhawet / Madhye Madhye GatiHi Bhanga Awrudhya Cha Gachhati // (*Nadi Tantra*)

- *Tiwre Wahati Kadchit* (Sometimes rapid)
- *Kwachit MandagaHa* (Sometimes slow)
- *Smadhye Madhye Gati Bhanga* (Sometimes irregular)
- *Kwachit Rodhwati GatiHi* (Sometimes obstructed)
- *Sukathina* (Sometimes hard)

- *Mathita* (Sometimes churning (s/o murmurs)

- *NiHi Anga* (Sometimes not felt)

Important Pulse Diagnostic Clue

- Murmurs are invariably associated with valvular heart diseases.
- *Mathita* (churning type) Nadi is suggestive of murmurs and offers an important diagnostic clue.

Pulse In Aortic Stenosis

- **Pulsus tardus et parvus (or anacrotic pulse):-**It is a slow rising and slowly falling pulse caused by an increasingly stiff aortic valve. Loss of compliance in the aortic valve makes it progressively harder to open, thus requiring increased generation of blood pressure in the left ventricle.

Aortic Stenosis like Pulse In Ayurveda

Mandam Mandam Shithilam Vyakulam Vyakulam Wa / Sthitwa Sthitwa Wahati Dhamani Yati Nasham Cha Sukshma / Nityam Sthanat Skhalati PunHa Angulam Sansprushyet Ya ||30|| (Kanad)

- Pulse which moves slowly, slowly (*Mandam Mandam*) and

collapses slowly slowly
(*Shithilam Shithilam*) and unstable
(*Vyakulam Vyakulam*) [like *pulsus tardus*]

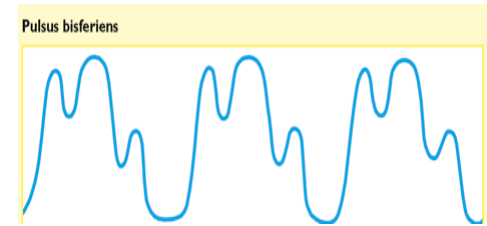
- OR moves intermittently (*Sthitwa Sthitwa Wahati*) and which is very weak (*Sukshma*) carries bad prognosis.

Pulse In Aortic Regurgitation

- **Pulsus celer** :- A quickly rising and quickly falling pulse seen in Aortic Regurgitation.
- **Pulsus bisferiens**:- When the aortic valve does not open and close normally in AR, two pulses to each heartbeat may be felt.
- **Hyperkinetic pulse** : - A bounding pulse signifies high pulse pressure. This is due to increased stroke volume of the left ventricle and decrease in the peripheral resistance leading to the widened pulse pressure of aortic regurgitation.
- **Watson's water hammer pulse**:- It is a pulse that is bounding and forceful rapidly increasing and subsequently collapsing.
- (A waterhammer was a Victorian toy in which a tube was half filled with fluid, the remainder being a vacuum. The child would invert and reinvert the tube; each time the impact of the fluid at each end

would sound like a hammer blow).

• **Pulse with Double Peaks**



Large and Bounding Pulse



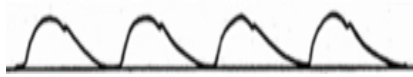
Aortic Regurgitation like Pulse In Ayurveda

*Kshanat Gachhati Vegen
Shantata Labhate Kshanat /
Saptahat Maranam Yat Anga
Shotha Vivarjitam* ||(Kanad)

- The patient whose pulse rises quickly (*Kshanat Gachhati Vegen*) and collapses quickly (*Shantata Labhate Kshanat*) may die in a week if not associated with edema. (Like *Pulsus Celer* Or Water hammer)

Pulse In Mitral Stenosis

- Pulse: - Normal/small amplitude **regular** pulse hypokinetic **initially**, Later may be associated with AF like pulse.(Heart rate is about 100-150/min. **Irregularly irregular pulse**).



Initially



Later

Mitral Stenosis Like Pulse In Ayurveda

- *Atisukshma Ativega Cha Shitala Cha Bhawet Yadi / Tada Vaidyo Vijaniyat Sa Rogi Tu AyushHa Kshayi* || (Nadi Tantra)
- Patient in whom there is weak (small) and rapid pulse which is cold, should be considered as dying.
- *Atisukshma Shighra Sawega Bharita Ardrika / Bhutwa Bhutwa Mriyate Tada Vidyat Asadhyatam* //86 (Rawan)
- Pulse which is weak, rapid, full and wet, disappear intermittently indicates bad prognosis.

Mitral Regurgitation

- Pulse – It is irregular due to Atrial Fibrillation.
- Fibrillating and Chaotic.



Mitral Regurgitation like Pulse In Ayurveda

Kampate Spandate tantuwat PunHa Cha Angulim Sprushyet / Tam Asadhyam Vijaniyat Nadim Duren Warjayet ||77 (Rawan)

- Pulse which vibrates like thread and again touch the finger tip, carries bad prognosis.

Tricuspid Stenosis

- Radial pulse features same as mitral stenosis.

Tricuspid Regurgitation

- Radial pulse Same as Mitral regurgitation.
- Atrial Fibrillation is common

Ventricular Tachycardia

- Ventricular tachycardia is a rapid, regular heart rate that originates with abnormal electrical signals in the ventricles. The rapid heart rate doesn't allow the ventricles to fill and contract efficiently to pump enough blood to the body. Ventricular tachycardia can be a medical emergency and soon culminates in fatal ventricular fibrillation and cardiac arrest. Rate may exceed 120 bpm.
- Pulse in VT is very rapid and regular, 120-220 b.p.m.

VT – Ayurved Pulse Diagnosis

GatiHi Bhramarakasya Eva Wahet Eka Dinen Tu | (Nadi Tantra)

- Patient in whom pulse is fast like bee, lives for a day only. (Nadi Tantra)
- *Nirantar Mukhasthane Bhramyet Damrukopama/ Chala Nadi Rugnasya Din Ekan Maranam Bhawet* || (Rawan)
- Patient whose pulse vibrates fast like musical drum, such patient lives for one day only. (Rawan)

Ventricular Fibrillation

- This results when ventricles quiver and can't contract or pump blood to the body.
- There is no pulse in ventricular fibrillation. Earlier VT syndrome before culminating may be felt as feeble, irregular, pulse. Extremities are cold.

Ventricular Fibrillation like Pulse In Ayurveda

Nispandam Nadikahinam Shitalam / Tyajet Tam Roginam || 168 (Harit – Nadi Vigyan)

- Patient in whom there is no pulse and extremities are cold, should not be treated.
- *Yada Nadi Hata Vega Spandate Naiva Labhyte / Tada Dinasya Madhye Tu Maranam Rogino Bhawet* || 84 (Rawan)

When the pulse is not felt at all, then patient dies in middle of the day.

VF like Pulse In Ayurveda

- *Swasthan Vichyuta Nadi Yada Wahati Wa Na wa / Jwala Cha Hrudaye Tiwra Tada Jwala Awadhi SthitiHi* || (Nadi Tantra)
- Patient in whom there is irregular pulse which is felt or not felt and there is burning in chest, lives as long as he feels the burning. (?MI induced VF)

Discussion

- After thorough study of Ayurvedic Pulse diagnosis texts, it is noticed that these peculiar findings correlates with many of the Valvular heart disease and cardiac arrhythmic states described in modern science as far as pulse diagnostic criteria is concerned pertaining to these states.
- Preliminary diagnostic information about Valvular heart diseases and cardiac arrhythmias is possible through pulse examination which can latter be confirmed by 2-D-Echo and electrocardiography.

Conclusion

- ‘Mathita’ (churning) type of Pulse is consistent with valvular heart disease.
- ‘Bhramar’ (bee) gati and ‘Damru’ (musical drum) gati of pulse is noticed in cardiac arrhythmias VT and AT.
- Cardiac Arrhythmic and Valvular heart disease states can very well be traced in ancient Ayurvedic Pulse examination.
- Ayurvedokt Pulse examination is important primary tool to diagnose various cardiac arrhythmias and Valvular heart diseases in clinics with reasonable accuracy supported and confirmed by modern diagnostic tool like ECG and 2-D Echocardiography.

References:

1. ‘Pulse’ by Dr. V. B. Athavale, published by Chaukhamba Sanskrit Pratishthan, 38, U.A. Bunglow Road, Jawahar Nagar, New Delhi – 110007
2. ‘Abinav Nadi Tantra ’ by Acharya Vishwanath Dwivedi, published by Krishnadas Academy, K 37/118. Gopal Mandir Lane, , Golghar, Varanasi – 221 001
3. ‘Clinical Medicine’ by Praveen Kumar and Michael Clark published by Bailliere Tindall, 24-28, Oval Road, London NW1 7DX
4. ‘Dr. Waghe’s Innovative Approach To Differential Diagnosis In Ayurved’ published by Rashtra Gauvra publications, shop no.28, Rahul Complex-I, Ganeshpeth, Nagpur - 440018

Cite this article:

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Ayurline: International Journal of Research In Indian Medicine 2018; 2(4) : 1-7