A CRITICAL REVIEW ON THE ARDITA W.S.R. TO FACIAL PALSY.

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ABSTRACT:

Ardita is characterized by the distortion of the half side of the face. Ardita Roga is considered among the Vata Vyadhi in all Ayurvedic literature. Vata is the prime factor in causing diseases because Vata is the main factor which control the mind and body. Ardita Roga can be correlated with the Facial palsy. Facial palsy is weakness of the facial muscles, resulting from permanent or temporary damage of the facial nerve. Facial palsy involves paralysis of facial nerve and its innervating structure. Bell’s palsy is commonest presentation of Facial palsy. It is acute, acquired, nontraumatic, unilateral, infranuclear facial palsy. The treatment modalities of Facial palsy include steroids and Anti-viral therapy. The recurrence rate of the disease is also high. In Ayurveda, the treatment for Ardita includes Navana, Murdhni Taila, Abhyanga, Snehana, Upanaha etc. The present article is an attempt to understand the causes, pathophysiology, symptoms and treatment of Ardita as Facial Palsy.

KEY WORDS:

Ardita, Facial Palsy, Vata, Vatavyadhi, Bell’s Palsy.

INTRODUCTION:

Ardita is characterized by symptoms like Ardha Mukha Vakrata. Ardita has been enlisted amongst the 80 types of Nanatmaja Vata Vyadhi, and considered in almost all ayurvedic literature under Vata Vyadhi. Vata, Pitta and Kapha are mentioned as Sharirika Doshas. Vatadi three Doshas in its normal conditions supports the body and in its abnormal condition destroys the body.

Vata is the prime factor in causing the diseases because Vayu is the sustainer of living beings. Vayu is all pervasive and reputed as the controller of the everything in the universe. If in a person, Vayu moves unimpaired, located in its own site and natural state, then the person can live more than hundred years free from the disease.

As per all Acharyas, the prime cause of Ardita is Vata. Vata is the main factor which control the mind and body. Shira is considered as the Uttamanga where Prana and all Indriyas resides. When Vata is in an equilibrium state, it carries out the functions like Chestapravartana, Vakravartana, Manaspraneta, Sarvaindriyanam Udhyojaka, Sarvaindriyanam Abhivodha. When Vata is aggrevated it destroyes the function of the Indriyas. In the similar manner, the aggagravated Vata causes the disease Ardita which leads to the symptoms like Ardhmukhjihmata, Nasa, Bhru, Akshi, Latata, Hanu vakrata etc.

As per Acharya Charaka and Vagbhatta Ardita is localized in half of the face with or without the involvemnt of the body. Vagbhatta also give the synonym ‘Ekayama’ for the Ardita. According to Acharya Susruta, Sharangadhara Samhita and Arunadatta, Vata gets vitiated and localised in the half of the face. In the context of Navegandharaneeya Adhyaya; Charaka has mentioned Ardita among the complications arising due to suppression of the urge of sneeze. Vridha Vagbhata stated that Ardita may occur due to complication of Nasyakarma if it is performed immediately after headbath.

Palsy is complete or partial muscle paralysis, often accompanied by loss of sensation and uncontrollable body movements or tremors. Facial palsy involves the paralysis of any structures innervated by the facial nerve. Facial palsy is weakness of the facial muscles, resulting from permanent or temporary damage of the facial nerve. Due to long and intricate pathway of the facial nerve, there are a number of causes that may result in facial nerve paralysis. Facial nerve is the 2nd brachial arch. It is mixed type of nerve and it contains sensory, motor and parasympathetic nucleus.

AIMS AND OBJECTIVES:

To study the pathophysiology and symptomatology of Ardita with special reference to facial paralysis with Ayurvedic and as well as modern aspects and its management with Ayurveda aspects.
MATERIAL AND METHODS:

REVIEW OF LITERATURE ACCORDING TO AYURVEDA:

ETYMOLOGY:

Ardita word derived from the root ‘Ard’ + ‘Kta’. The word ‘Ard’ means to afflict, strike, hurt, kill etc

According to Shabda Kalpadruma, the word Ardita is derived from the root word "Ardana" which means to pain, or discomfort or trouble.

NIDANA OF ARDITA:

Acharya Charaka has not mentioned specific Nidana for Ardita. Nidana of Vatavyadhi can be taken as Nidana of Ardita.

Acharya Shusruta specifically mentioned that Garbhini(pregnant women), Sutika (puerperium), Bala (young), Vriddha (old), Ksheena (emaciated) and Aasrika Kshayayukta (who have lost blood) are more prone to Ardita. Other causative factors of Ardita are Uchchaivyaaharat (shouting excessively), Atihasanam (Excessive laughing), Atijrumbhana (excessive yawning), Bharavahana (carrying heavy load), Kathina Bhakshana (eating hard substances), Vishama Shayasan (sleeping on uneven bed).  

Acharya Vagbhata has mentioned Nidana as Shirasobharaharanam (carrying heavy load on head), Atihasya, AtiPrabhasanam Uttrasvaktra Kshavathu, Kharakarmuka Karshanam, Vishama Upadhanata (use of irregular pillow while sleeping), Kathina Charvanat (chewing very hard substances) etc.

PURVARUPA OF ARDITA:

Acharya Charaka and Vagbhatta have not mentioned Poorvarupa of Ardita.

Sushruta has explained Purvarupa of Ardita elaborately as follows: Romaharsha (horripilation), Vepathu (tremors), Netra Aavilata (muddy eyes), Vayu Urdhvagatitva (vitiated vayu moving in upward direction), Tvacha Supti (numbness in skin), Toda (pricking pain in the affected parts), Hanugraha (lockjaw). Vangasen, Harita, Yoga Ratnakara also gave the same prodromal symptoms.

SAMPRAPTI:

Vataprapakopaka
Aahara vihara

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<th>Vata Shhana</th>
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Ahara-Vihara

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Margavarana

Khaivegunya

Sthanasamshraya in mukhaardha Pradesh

ARDITA
SAMPRAPTI GHATAKA:

- DOSHA: Vata Pradhana Tridosha
- DUSHYAS: Rasa, Rakta, Mamsa
- SROTAS: Rasa, Rakta, Mamsavaha
- SROTODUSHTI: Sanga, Vimargaga-mana
- UDBHAVA STAANAA: Pakwashaya
- VIYAKTHA STAANAA: Mukhaardha,
- ADHISTHANA: Siras, Indriyas
- VIYAKTHA STAANAA: Mukhaardha,
- ROGA MARGA: Madhyam Roga Marga.

RUPA OF ARDITA:

As per Acharya Charaka: Ardh-mukhi-jihmata (distortion of the half of the face), Nasa-Bhruki-Latatara Hanu Vakrata (distortion of the nose, eye, brow, forehead, eye and mandible), Vakrabhoojana (ingested food moves tortuously to the one side), Vaktra Nasika (curved nose), Stabdha Netra (eye remain fixed), Kshavgraha (suppression of sneezing), Deenajihwa (speech becomes faint and distorted), Samukshi Kala Vak (imperfect and interrupted speech), Dantachala (loose teeth), Shravanabhadhya (difficulty in hearing), Swrabheda (hoarseness of voice).11

As per Acharya Sushruta: Vaktrardha Vaktra (half of the face becomes distorted), Grivaapavartanam (neck rotates), Netrivikriti (deforrmity of eyes), Griva-Chibuk-Dantanam Parshve Vedana (pain in the side of the neck, chin, teeth), Chala Shiraha (Instability of head), Vaksanga (obstruction of speech).12

As per Vagbhatta: Vaktrardha vaktra (half of the face becomes distorted), Hasimikshitam, Murdhakampa (shaking of head), Vaksanga (aphasia), Stabdha Netra (eye remain fixed), Dantachala (loose teeth), Swara Bhramsha (hoarseness of the voice), Shru thani (difficulty in hearing), Kshavagraha (suppression of sneezing), Gandhayana (loss of smell), Smriti Nasha (loss of memory), Moha (delusion), Supti (numbness), Parsvataha Nishthivan (salivation from the side of face), Akshi Nimilana (one eye is closed), Ur dhvajatru ruja (pain).13

According to Acharya Bhavaprakasha, Harita and Yogaratnakara Ardita has been classified into three types.

1. Vataja Ardita: Lalastrava (excessive salivation), Vyatha (pain), Kampa (tremors), Hanugraha (lockjaw), Vakagraha (difficulty in speaking), Aushth Shotha Shula (swelling and pain in the lips).
2. Pittaja Ardita: Pittamsaya (yellowish face), Jwara (fever), Trusha (thirst), Moha (delusion), Ushnta (hotness).
3. Shleshmaja Ardita: Ganda, Shirah, Manya Sotha, Stambha (swelling and stiffness at cheeks, face, neck)14

Vangasena added 4th type of Ardita as a Mishrita Ardita.15

SADHYASADHYATA OF ARDITA:

Ardita is considered as Dushchikitsya, because Vatavyadhi is included under the Maharoga. According to Shusruta and Vagbhatta all the Maharoga are Swabhavatata Dushchikitsya. (S.S.Su.33/4; A.H.Ni.8/30). Charaka also mentioned that Vatavyadhi does not yield to any treatment, when there is Bala and Mamsa Kshaya. (CH.In.9/88-90) Acharya Charaka also said that, when frequent paroxysms of disease like Ardita subside, the patient becomes normal. If these paroxysms do not subside, patient is continuously afflicted with the pain, which indicates its incurability.16

Kshina (emaciated), Animishakshi (having fixed eyes), Prasakta-Avyaktabhasi (one whose speech is continuously inarticulate) and after three year the Ardita is incurable by Acharya Sushruta which is been given in Nidan Sthana

CHIKITSA OF ARDITA:

Samanya Vata Vyadhi Chikitsa: Repeatedly use of Madhura, Amla, Lavana Rasa, Nasya Karma, Dhoompana should be done.

Kevala Nirupstambha Vata Chikitsa:

Then following treatment should be given.

Snehana with Chaturvidha Sneha, Anuvasana Basti, Snigdha Nasyakarma, Swedana Karma, Tarpana Karma should be given. If symptoms of Vata Vyadhi do not subside by above treatments, then Mruda Sodhana should be given. 17
In case of *Maargavarana*ajanya Ardita, first treat the Avarana then above treatment should be given.

<table>
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<tr>
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<td>Vagbhatt</td>
<td>Navana, Murdhnitaila, Shirotrakshitarpansa. Also, if Ardita is associated with Shopha, Vanama Karma is indicated and if associated with Daha &amp; Raga, Shiravyadh is indicated. 20</td>
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<td>Vataja Ardita: Snehapana, Nasya, Upanaha, Shiro Basti, for Pittaja Ardita: Sneha Prayoga, Ghrita Basti, Kavala Dugdha and for Kaphaja Ardita: Brimhana after depletion of Kapha Kshaya should be given, Ardita is associated with Shopha, Vanama Karma is indicated 21</td>
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<td>Chakradatta</td>
<td>Mashanderi Prayoga, Narayana Taila Abhyanga, Pana and Basti, Autarbhkitika Ghrita Pana.22</td>
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<td>Snehapana, Nasya, Upanaha, Swedana, Bastikarma, Abhyanga, decoration of Dashmoola with Matulunga Rasa., Blackgram pounded with butter, milk and meat soup followed by Decoction of Dashmoola. In Pittaja condition Shita Sneha, Ghrita Basti and Praseka. In Kaphaja condition, Tikshna Nasya and Purana Sarpi Pana should be given. When portion of Kapha decreased treatment should be given which improve the health.23</td>
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**REVIEW OF LITERATURE ACCORDING TO MODERN:**

In modern view *Ardita* can be correlated with Facial Palsy by its sign and symptoms.

**FACIAL PALSY:**

Facial palsy is caused by damage in the facial nerve or impairment in conduction of facial nerve by central nervous system damage. Facial nerve is the 2<sup>nd</sup> brachial arch. It is mixed type of nerve and it contains motor, sensory and parasympathetic nucleus. 70% facial nerve fibers arises from the motor neurons of the facial nucleus and remaining 30% are mixed sensory and autonomic fibers forming nervus intermedius.

Motor from the principal facial nucleus located in the ventrolateral portion of the caudal pons. Special Visceral Efferent: It is supplies the muscles for facial expression. Facial nerve exits through the stylomastoid foremen entering the protid gland where it divides in upper and lower trunks. Upper trunk give rise to frontal, zygomatic and buccal branches. Lower trunk has mandibular and cervical branches. Upper trunk has bilateral representation and lower trunk has contralateral representation. General Visceral Efferent: Visceral fibers from superior salivatory nuclei courses in nervus intermedius and course along the grater superficial petrosal nerve synapse in the sphenopalantine ganglion and post ganglionic supply to the lacrimal and palatine gland. Submandibular and sublingual glands receive their parasympathetic input from the facial nerve via the submandibular ganglion.

Sensory root contains bipolar neurons in geniculate ganglion. Special visceral afferent: Distal axons of the geniculate ganglion which supply the taste fibers to the anterior 2/3<sup>rd</sup> of tongue by corda tympani and proximal axons terminate in the nucleus solitarius. Supply the hard palate and soft palate. General somatic afferent: Somatic pain fibers from the external
auditory canal, carries cutaneous impulses from the anterior wall of the external auditory canal and a small strap of the skin between mastoid process and pinna. 24

CAUSES OF FACIAL PALSY: 25


Facial paralysis follows the 3 types of the pathology:

1. NUCLEAR: Its affected nuclear destruction.

2. SUPRANUCLEAR: Lesion involved in to the cerebrum

3. INFRANUCLEAR OR PERIPHERAL: Its include lesion of the nerve.

Upper motor neuron lesions mean supranuclear lesion involves paralysis of lower face on opposite side. In lower motor neuron lesions involves nuclear and peripheral destruction causing upper as well as lower face on the same side. Upper facial muscles are innervated by corticobulbar pathway from both motor cortices, whereas the lower facial muscles are innervated only by the opposite hemisphere.

CLINICAL FEATURES:

Facial asymmetry, food collect between teeth and lips, sound hypersensitivity on the affected side, heaviness or numbness of the face, eyebrow droop, loss of forehead and nasolabial folds, drooping of the corner of mouth, uncontrolled tearing, inability to close eye due to lower lid sags and falls away from the conjunctiva, loss of blinking control on affected side, altered sense of taste, dribbling of saliva from the corner of the mouth are the chief symptoms of Facial palsy.

If the lesion is in the middle ear portion, taste is lost over the anterior two-third of the tongue on the same side. If the nerve to the stapedius is interrupted, there is hyperacusis. Lesion in the internal auditory meatus may affect the adjacent auditory and vestibular nerve, causing deafness, tinnitus or dizziness. 26

A complete interruption of the facial nerve at stylomastoid foramen paralyzes all muscles of the facial expression. The normal functions of below given muscles are hampered; smiling and laughing by zygomaticus major, sadness by levator labii superioris and levator anguli oris, grief by depressor anguli oris, anger by Dilator naris and depressor septi, frowning by corrugator supercilii and procerus, horror, terror, fright by platysma, surprise by frontalis, doubt by mentalis, grinning by risorius, closing the mouth by orbicularis oris, whistling by buccinator and orbicularis oris. 27

BELL’S PALSY:

Bell’s palsy is commonest presentation of Facial palsy. Palsy is acute, acquired, nontraumatic, unilateral, infranuclear facial palsy. Bell’s palsy is most common in 3rd decade. Its incidence in general population is about 20 cases per 100,000 population. It is defined as an idiopathic facial palsy. 28

Onset of the Bell’s palsy is fairly, abrupt, with maximal weakness being attained by 48 hours as a general rule. Pain behind the ear may precede the paralysis for a day or two. Taste sensation may be lost unilaterally and hyperacusis may be present. Lesion proximal to geniculate ganglion affect the taste sensation, lacrimation, stapedial reflex. While distal lesion cause only muscle weakness.

PATHOPHYSIOLOGY:

In acute Bell’s palsy, there is inflammation of the facial nerve with mononuclear cells, consistent with an infectious or immune cause. Herpes simplex virus type 1 DNA was frequently detected in endothelial fluid and posterior articular muscle, suggestive that a reactivation of the virus in geniculate ganglion. Reactivation of varicella zoster virus associated with one-third cases and represent the second most frequent cause. 29
About 80-85% patients recover completely within 3 months. About 15% of patients are left with troublesome residual palsy and synkinesis. There is lagophthalmos and bell’s phenomenon. **BELL’S PHENOMENON:** in an attempt to close eyelid, the eyeball rolls upward.

**EXAMINATIONS OF FACIAL PALSY:**

(1) Loss of wrinkle in forehead and nasolabial fold, inability to close the eyes, drop of eyebrows, unable to bare his teeth and open his mouth, unable to blow out cheeks, pursing the lips – strength and weakness, drooling of corner of mouth, deviation of angle of mouth to opposite side (healthy side). (2) cutaneous lesion of herpes zoster in external ear canal present or not (3) other cranial nerves examination specially 8th cranial nerve, which courses near to the facial nerve in the Ponto medullary junction and in the temporal bone. (4) SCHIMER’S TEST: It is measuring the moisture in the eyes. (5) TASTE FUNCTION: Taste function with sugar and salt solution and with Electrogustometry. (6) HOUSE BRACKMANN GRADING: The House Brackmann Scale is a facial nerve grading system, at the end of the scale there is normal facial nerve function and at the other there is complete paralysis. (7) following reflexes are elicited by the 7th nerve. (8) Reflexes: Orbicularis oculi reflex. Palpebral-oculogyric reflex, Orbicularis oris reflex, Corneal reflex.

**INVESTIGATIONS:**

(1) Electrodiagnostic test: Involving electromyography and nerve conduction test. (2) MRI and CT scan: To find out the causes of stroke and other intracranial abnormalities. MRI may reveal swelling and uniform enhancement of the geniculate ganglion and facial nerve. (3) Testing for Diabetes mellitus. (4) Lyme titer (5) Lumber puncture for possible Guillain Barre Syndrome (6) Angiotensin converting enzyme and chest imaging studies for sarcoidosis. (7) Stapdel reflex: measure with laser Doppler velocimetry and tympanometry.

**SEQUEALE:**

Bell palsy sequelae include incomplete motor regeneration, incomplete sensory regeneration, and aberrant reinnervation of the facial nerve.

**Synkinesia:** Attempts to move one group of facial muscles may result in to contraction of all. It is abnormal synchronization movement of muscles which are normally not contract together.

If fibers originally connected with the orbicularis oculi come to innervate the orbicularis oris, closure of the lids may cause a retraction of the mouth.

**Crocodile tears:** If fibers originally connected with muscles of the face later innervates the lacrimal gland, anomalous tearing may occur with any activity of facial muscles, such as eating.

**Jaw winking:** This facial synkinesis triggered by jaw opening, causing closure of eyelids on the side of the facial palsy.

**Hemiacial spasm:** Hemiacial spasm is facial spasm initiated by movement of the face.

**DIFFERENTIAL DIAGNOSIS:**

(1) **Schwannoma:** It is a one type of the tumour develop in the cranial nerves and other peripheral tissues, it is developing into the swan’s cells. (2) **Pontine Haemorrahge** and **Pontine tumor:** Interrupt the facial nerve fibres. (4) **Ramsay hunt syndrome:** Severe facial palsy associated with a vesicular eruption in the external auditory canal and caused by reactivation of herpes zoster in the geniculate ganglion. (4) **Mobius syndrome:** It is rare congenital neurological disorder. It is characterized by facial paralysis and the inability to move the eyes from side to side (5) Stroke, infarcts and demyelinating lesion in Multiple sclerosis (6) **Melkerson Rosenthal syndrome:** It is the rare and unknown cause of the facial nerve paralysis causing swelling of the face and lips. (6) **Bilateral facial palsy:** Bilateral facial palsy seen in Guillaine Barre syndrome, sarcoidosis, mobius syndrome, Lyme disease.

**TREATMENT:**

Oral antiviral, Corticosteroids, Eye protection, Physiotherapy, Surgery.

**DISCUSSION:**

As per all **Acharyas**, all the above symptoms of the **Ardita** are related to the **Vata Vrudhhi**. In the conditions like Garbhini, Sutika, Bala, Vridhda, Kshina, Raktakshaya, there is a **Vatavruddhi** and **Dhatukshaya**, so they are more prone to **Ardita**. Like **Aharaja** and **Viharaja Nidana**, **Panchakarma Vyatireka** of Nasya(Vagbhatta) and Sirevedhat(Yogratnakara) , Atitlanchhana and Chardana(Acharya Bhela) also causes **Ardita** due to aggravation of the **Vata Dosha**. Symptoms of **Ardita** can be co-related with the lower motor neuron facial palsy, because lower facial muscles are innervated only by the opposite
hemisphere of corticobulbar tract. Upper motor neuron facial palsy only involves lower half of the face due to bilateral innervation of the upper part of the facial muscles.

There are many conditions which paralyze the half side of the body like stroke, pontine haemorrhage, pontine tumours, brain trauma, multiple sclerosis which can be correlated with the Eka-yama, which has been mentioned by Acharya Vagbhattta. Symptoms like losing the control of contralateral lower half of the face, hemiplegia on side of facial palsy, ataxia, normal muscles tone or hypertonia, wrinkles on the forehead, having no muscular atrophy or fasciculation appears in the supra nuclear lesions which occur in the upper motor neuron facial palsy. In the infranuclear lesions of lower motor neuron facial palsy symptoms like loose the control of ipsilateral side of face, upper and lower both part of the face affected, hemiplegia on opposite side, having no ataxia, flaccid tone, having no wrinkle on the forehead, muscles atrophy are present.

If the palsy is not recovered within 3 months, patient develops the complication like synkinesis, which becomes difficult to treat. Charaka specially mentioned the treatment for Nanatmaja Vataroga in Maharagadhayya which includes the drugs having sweet, sour, saline taste, unctuous and hot qualities. Snehana, Swedana, Asthapana Basti, Anuvasan Basti, Snigdhá Dhupamana are the Upakrarna which alleviates the Vata.

CONCLUSION:

All the Acharyas mentioned the treatment of Ardita as Navan, Murdhi Taila, Nadi Swedana, Upahan Swedana, Abhyanga, Mashenderi Prayoga, Autharbhaaktika Ghrita Pana. Above mentioned treatment should be adopted when Vata is not Aavrita by other Doshas. But when Vata is Aavrita by Doshas, first treat the Avaraka and then treat the Avruta Doshha. There are two types of Samprapti for manifestation of Vatavaydhi: Dhatukshayajanyaa and Margavaranaajanyaa. When Vayu gets aggregated from over indulgence of Vata Vardhaka Aahara and Vihara, causing depletion of the tissue. Vata then fills up the empty channels and moves greatly inside them, and causes the Dhatukshayajanya Vatavaydhi. When Vayu is enveloped by the other Doshhas which have filled the channels results in Margaavarodh. In Pittaja condition treatment like Shīta Snehā, Ghrita Basti and Praseka should be given. In kaphaja condition, Tikshna Nusya and Purana Sarpa Pana should be given. When Kapha gets decreased treatment should be given which improve the health.

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