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ETIOPATHOGENESIS OF VISHWACHI (CERVICAL SPONDYLOSIS) AND ITS DIAGNOSTIC APPROACH

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ABSTRACT

Background: *Vishwachi* is one among the *Vatavayadhi* which simulates with the signs and symptoms of Cervical Spondylosis which affecting the neck and upper extremities. In *Vishwachi, Vata* is the main *Dosha* and *Kandara* being the main *Dushya.* Because of affliction of *Kandara* of *Bahuprshta* by vitiated *Vata*, patients may present with the *Lakshanas Ruk*, *Toda, Stambha*, *Karmakshaya* and *Cheshtapaharana* of *Bahu* and compromise the normal functioning capacity. *Ayurveda* emphasize the importance of diagnosis before planning treatment protocol. Hence there is a need to frame a protocol for evaluating the etiopathogenesis of *Vishwachi* and its diagnostic approach. **Objectives:** To study the etiopathogenesis of *Vishwachi* as explained in classics, to study the comparative analytical description of *Vishwachi* and to develop the diagnostic protocol of *Vishwachi* with reference to Cervical Spondylosis. **Methods:** A minimum of 30 patients who are suffering from *Vishwachi* between age group of 30-60 years were selected by taking details of history, physical signs and symptoms mentioned in our classics and allied science. A detailed clinical examination and radiological assessment are done. **Results:** *Vishwachi is a Vedana pradhana Vatavyadhi in which the Kandara, Bahuprushta* afflicted by morbid *Vata* leading to motor and sensory symptoms of upperlimb. The *Nidana*, *Lakshana* and *Upadrava* of *Vishwachi* are taken under the umbrella of *Vatavyadhi. Aharaja* and *Manasika Hetus* acts as *Vyanjaka Hetu*, *Viharaja Hetu* acts as *Utpataka Hetus*. Radiological examination confirmed that majority of the patients had degenerative changes in C5-C6, C6-C7vertebrae.

Key words : *Vishwachi, Vatavyadhi*, Cervical Spondylosis, Diagnostic Protocol.

INTRODUCTION

As we are living in a modernized world with more technical advancements, people are too busy with leading a stressful life for their wealth by spending their health. Now a days most of the professionals doing their work by sitting incorrect, fixed or with constant working postures. In some, more mechanical activity and travelling are needed. Resulting in stress and strain to both body and mind in the form of pain. One of the most common ailment experienced by these people are neck pain and it is one of the regular complaint goes to any orthopedic clinic. It is one of the reasons which contribute to the diseases of cervical spine. Cervical Spondylosis is a condition in which there is a progressive degeneration of the intervertebral discs leading to change in the surrounding structures[1]. 'Spondylo' is a Greek word meaning vertebra and spondylosis generally means changes in the vertebral joint characterized by increasing degeneration with subsequent change in the bones and soft tissues[2]. The annual incidence of cervical radicular symptoms to be 83.2 per 100,000 populations and its prevalence is most significant between 50-54 year age group[3]. Faulty diet habits and improper Lifestyle are responsible for early degenerative changes in cervical spine. *Vishwachi* is one among the *Vatavayadhi* which simulates with the signs and symptoms of Cervical Spondylosis which affecting the neck and upper extremities[4]. The *Nidana* and *Samprapti* are not explained separately in the classics. Being one of the *Vatavyadhi* , the *Samanya Nidana* and *Samprapti* of *Vatavyadhi* may be considered for *Vishwachi*[5]. If the disease condition is not diagnosed properly it may leads to the advanced level like Cervical Radiculopathy and Myelopathy and other conditions leads to permanent disability by constant damage to the vertebrae[6]. The exact etiological factors are not traced out completely; some of the risk factors are explained. Finding a solution for this in Ayurvedic way demands proper validation of *Nidana* and *Samprapti.* So this study is expected to be useful for the evaluation of *Vishwachi* using the diagnostic tool *Nidana Panchaka.*

MATERIALS AND METHODS

Sample Source - 30 patients diagnosed as *Vishwachi* were selected from the O.P.D and I.P.D of Alva's

Ayurveda Medical College, and other referrals.

Study Design – A Clinical observational study

Diagnostic criteria: Diagnosis was made on the basis of clinical features of *Vishwachi* mainly *Tivra ruja, Bahukarmakshaya , Cheshtahani* etc.

Subjective criteria:	Grade
Pain	
No Pain In Neck	0
Pain In The Neck Region Only With Excess Movements	1
Pain In The Neck Region With Slight	2
Continuous Pain In The Neck Movements	3
Stiffness	
No Stiffness	0
Mild Stiffness	1
Moderate Stiffness	2
Severe Stiffness	3
Radiating pain	
No Radiating Pain	0
Radiating Pain Occasionally Felt Subsides By Rest	1
Radiating Pain Only On Lifting Heavy Objects	2
Radiating Pain Felt On Movements Subsides By Rest	3
Continous Radiating Pain,Non Relief On Rest	4
Weakness	
No weakness	0
Weakness in any of the extremity	1
Weakness in both the extremities	2
Clumsy finger movements	
No clumsy movements	0
Clumsiness in any of the extremity	1
Clumsiness in both the extremities	2
Vertigo	
No vertigo	0
Present occasionally	1
Present constantly	2

Objective criteria:

1. Plain X- ray of cervical spine AP and lateral view

2.Cervical Spondylosis grading (Kellegren et al.)

3. Physical Examination (Spurling test, Lhermitte's sign)

Inclusion criteria

Patients aged between 30-60 years

Patients presenting with *Lakshanas* of *Vishwachi*

Patients presenting with features of Cervical Spondylosis with radiculopathy

Exclusion criteria

Systemic disorders with fatal signs

Neoplastic disorders Tuberculosis of spine

Traumatic cervical spine with fatal signs

Investigations:

- Plain X-ray of cervical spine AP and lateral view
- CT Scan (optional)
- MRI (optional)

OBSERVATIONS

Based on the Demographic profile, Age incidence of 30 patients suffering from *Vishwachi* showed, 7(23)% of patients were between the age group 30 to 40 years. 12(40%) patients were between 41-50 years. Gender wise distribution of patients showed 15(50%) male and 15(50%) female. In the present study maximum number of patients were doing office work ie 14(47%), 9(30%) were house hold, 4(13%) of the patients were drivers and 3(10%) were labors. 17(57%) having *Krura koshta*. According to the *Agni* of the patients most of them are with *Vishamagni* ie 21(70%), 5(17%) with *Mandagni.*

Table No.1 Showing distribution of 30 patients according to Chief complaints

Chief complaints	Grade	Frequency	Percentage
Neck pain	Grade 3	15	50
Stiffness of neck	Grade 2	15	50
Radiating pain	Grade 3	11	37
Clumsy finger movements	Grade 1	18	60
Vertigo	Grade 1	4	13
Weakness	Grade 1	20	67

Considering pain in the neck 15(50%) of subjects showed continuous pain in the neck. 14(47%) showed pain in the neck region with slight movements .15(50%) showed moderate stiffness. 11(37%) showed radiating pain felt on movements subsides by rest. 18(60%) of the subjects showed clumsy finger movements in one of the extremity. 4(13%) of patients showed vertigo only occasionally. 20(67%) had weakness in one side of the extremity.

Table No.2 showing distribution of 30 patients according to Vishesha lakshanas7

Vataja vishesha lakshanas	Frequency	Percentage
Bahukarmakshaya	23	77
Stambha	23	77
Toda	6	20
Ruja	30	100
Spandana	30	100
Balakshaya	23	77
Kaphaja vishesha lakshanas		
Gourava	12	40
Arochaka	30	100
Tantra	4	13

Among the *Vishesha Vata Lakshanas* all patients showed *Ruja* and *Spandana*. Majority of the patients showed *Bahukarmakshaya, Balakshaya* and *Sthambha* ie 23(77%), minimum number of patients showed *Toda* ie 6(20%). Among the *Kapha Lakshanas* all patients showed *Arochaka Lakshana* , 12(40%) showed *Gourava* and minimum number showed *Tantra* ie 4(13%).

Table No. 3 Showing distribution of 30 patients according to Dashavidha pariksha

		Frequency	Percentage
Prakruti	*Vata kapha*	13	43%
Vikruti	*Vata* *Vata kapha*	27 3	90% 10%
Sara	*Madhyama*	25	87%
Samhanana	*Madhyama*	27	90%
Pramana	*Madhyama*	22	73%
Ahara shakti	*Abhyavaharana – madhyama* *Jarana – madhyama*	23 18	77% 60%
Vyayama shakti	*Madhyama* *Avara*	16 14	53% 47%
Satva	*Madhyama*	23	77%
Satmya	*Madhyama*	30	100%
Vaya	*Madhyma*	27	90

Among the 30 patients most of them are of Vata Kapha Prakruti i.e 13(43%). 27(90%) are with Vatadosha Vikruti. Considering the

Sara 25(87%) showed Madhyama Sara and 5(17%) showed Avara Sara. Most of the patients had Madhyama Samhanana ie. 27(90%) and 3(10%) are with Avara Samhanana. Considering Pramana- Madhyama Pramana ie 22(73%). Aharashakti- Abhyavaharanashakti is Madhyama ie 23(77%), 7(23%) of Avara. Madhyama Jaranashakti 18(60%), and 12(40%) of Avara Jaranashakti. Vyayamashakti - Madhyama Vyayamashakti ie 16(53%) and 14(47%) of Avara Vyayamashakti. Satva- Madhyama Satva ie 23(77%) and 7(23%) are with Avara Satva. All the patients are with Sarva Rasa Satmya. Most of the patients of this study are of Madhyama Vaya ie 27(90%) and 3(10%) of Vrddha Vaya.

Table No.4 Showing distribution of 30 patients according to Aharaja Nidana8

Nidana	Daily	%	Occasionally	%
Viruddhasana	0	0	29	97
Adhyasana	0	0	11	37
Vishamasana	3	10	25	83
Ajeernasana	1	3	28	93
Alpanna	5	17	22	73
Anasana	0	0	17	57
Rukshanna	5	17	23	77
Shitanna	8	27	21	70
Shimbi dhanya	0	0	16	53
Tikshnahara	10	33	19	63
Tiktarasahara	1	3	23	77
Ati kashaya	4	13	20	67
Shushka ahara	4	13	19	63
Khara ahara	4	13	16	53
Laghu anna	7	23	21	70
Ati katu	11	37	18	60
Frequent fasts	0	0	9	30
Junk food	1	3	24	80

In the present study it is observed that 29 (97%) patients consumed *Viruddhasana,* 28(93%) *Ajeernasana*, 25(83%) *Vishamashana*, 24(80%) junk food, 23(77%) *Rukshahara* and *Tiktarasa Sevana*, 22(73%) *Alpanna*, 21(70%) *Shitanna* and *Laghu Ahara*, 20(67%) *Ati Kashayarasa* |*Sevana*, 19(63%) *Shushka* and *Tikshna Ahara,* 18(60%) *Atikatu Ahara Sevana* as predominant *Nidana* occasionally.

Table No. 5 Showing distribution of 30 patients according to Viharaja Nidana[9]

Viharaja hetu	Daily	%	Occasionally	%
Ratrijagarana	19	63	11	37
Divaswapna	18	60	5	17
Atichankramana	5	17	11	37
Atishrama	7	23	10	33
Dukhasayya	17	57	10	33
Atiadvagamana	0	0	10	33
Vegasandharana	0	0	19	63
Bharavahana	2	7	5	17
Ati langana	0	0	2	7
Trauma	0	0	0	0
Working in odd posture	9	30	5	17
Exposure to cold breeze	6	20	12	40
Working under AC	9	30	1	3
Excessive exercise	0	0	4	13

Considering viharaja Nidana 19(63%) of the subjects were indulged in ratrijagarana , 18(60%) in diwaswapna, 17(57%) in dukhasayya, 9(30 %) in working in odd posture and working under AC daily. Majority of the patients did vegasandharana ie 19(63%), 12(40%) exposure to cold breeze, 11(37%) to atichankramana,10(33%) atishrama and ati adhwagamana occasionally.

Table No.6 Showing distribution of 30 patients according to Manasika Nidana[10]

Manasika hetu	Daily	%	Occasionally	%
Shoka	5	17	10	33
Chinta	11	37	13	**43**
Bhaya	3	10	1	3
Krodha	2	7	17	**57**

Among 30 subjects most of the patients indulge in krodha ie 17(57%), chinta 13(43%)

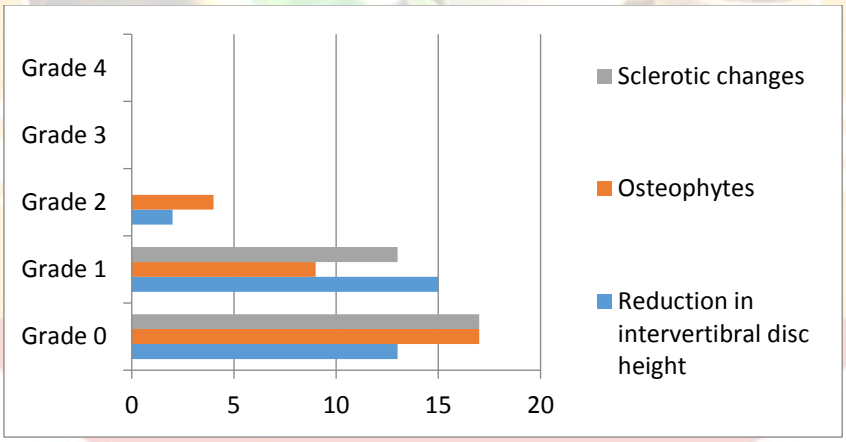
Table No.7 Showing distribution of 30 patients according to Examination[11]

Grade	Tenderness %	Flexion %	Extension %	L.Rotation %	L.Flexion %
Grade 0	0	3	3	17	10
Grade 1	17	10	23	10	13
Grade 2	47	27	50	57	60
Grade 3	40	60	23	17	17

For tenderness.among 30, 14(47%) patients winces the body by pain. For flexion most of patients had more than 4cm difference between chin and interclavicular line ie 18(60%). For extension15(50%) of subjects showed movements upto 110º-120º. For lateral rotation more showed rotation right and left side only ie 17(57%). For lateral flexion majority showed 3-5cm difference between ear and shoulder tip ie 18(60%).

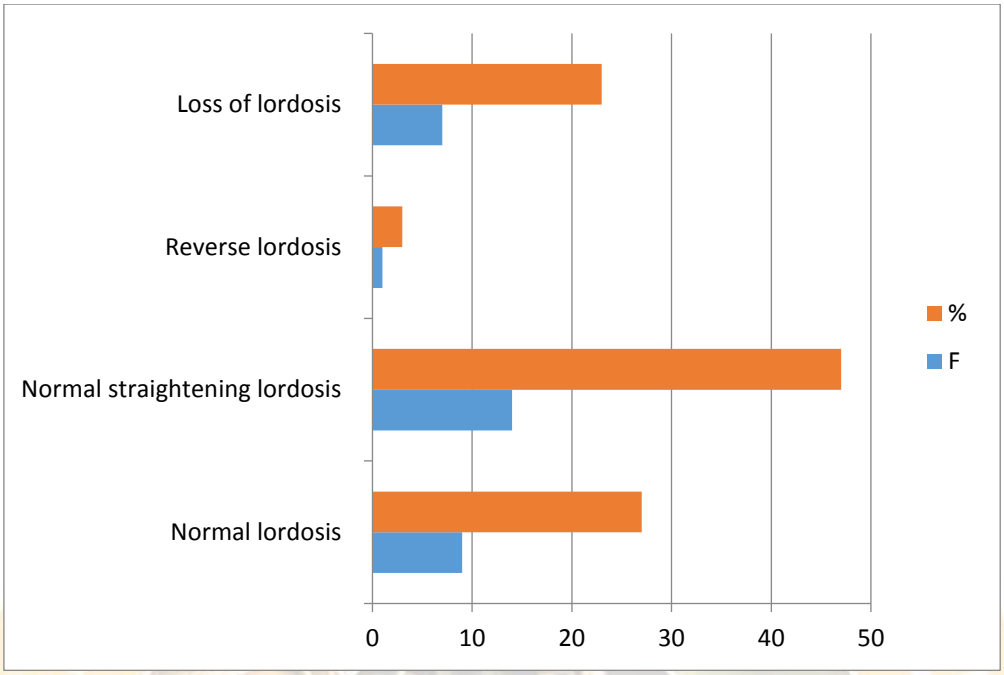
Radiological Investigations

Graphs Showing distribution of 30 patients according to X Ray findings[12]



Graph No. 1

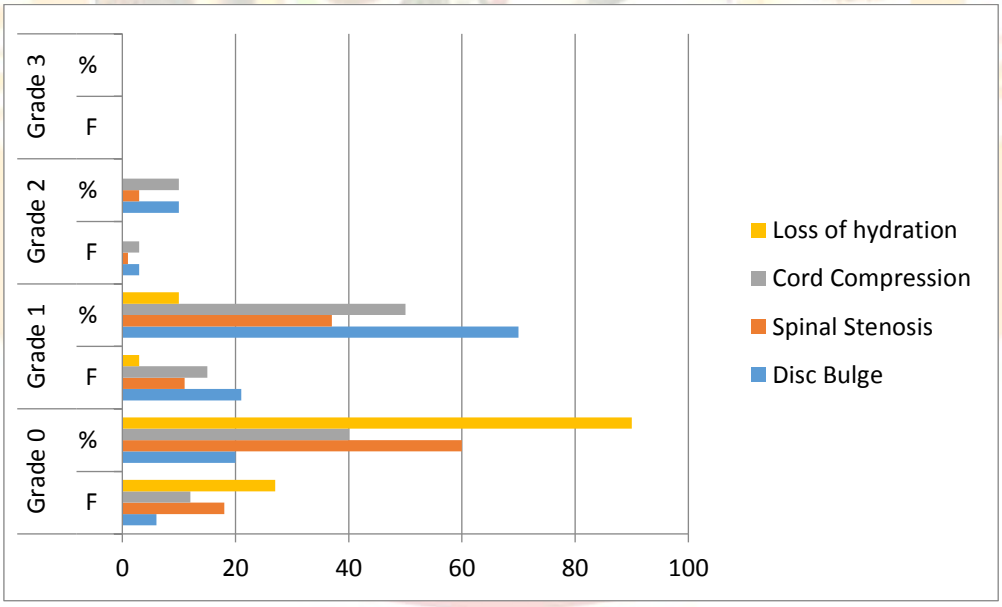
In this study 15(50%) showed or no reduction in disc height <25%. 9 (30%) of the patients showed minute osteophytes, 13(43%) of the participants showed recognized sclerosis of the end plate.



Graph No.2

14(47%) of patiente showed normal straightening lordosis. 7(23%) showed loss of lordsis and only one patient showed reverse lordosis.

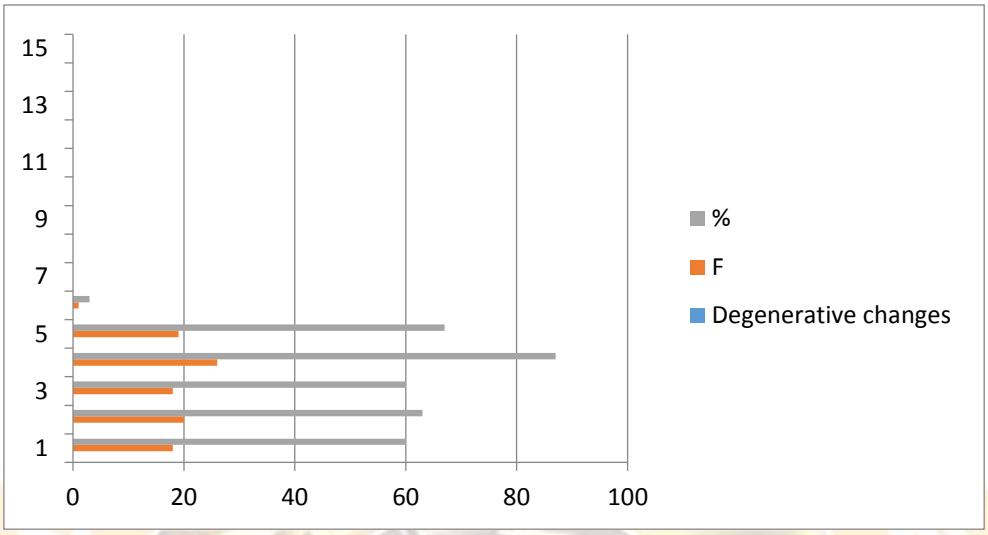
Graphs Showing distribution of 30 patients according to MRI findings[13]



Graph No. 3

Majority of the patients showed mild disc bulge ie 21(70%) and only 3(10%) showed Moderate disc bulge. For spinal stenosis 11(37%) of the patients showed subarachnoid space obliteration exceeding 15(50%), and one patient showed spinal cord deformity.

15(50%) of the patients are showed mild cord compression and 3(10%) showed moderate.3(10%) showed mild level of dehydration.



Graph No.4

Majority of the vertebrae affected is C5-C6 ie 27(90%), next to that is C6-C7 ie 26(87%) , then C7-T1and C3-C4 ie 20(67%), C1-C2 and C4-C5 of 18(60%).

NECK DISABILITY INDEX14

Neck disability	Frequency	Percentage
No disability	0	0
Mild	7	23
Moderate	7	23
Severe	10	33
Complete	6	20

Considering the neck disability index 10(33%) of subjects had severe level, 7(23%) had mild and moderate level and 6(20%) had complete level of neck disability.

DISCUSSION

This study shows that majorly disease occurs in the middle age group due to more involvement in their physical activities, office works, and stress during 2nd and 3rd decade .Based on the nature of work, they were having sedentary life style, heavy manual works and improper sitting postures during work etc. All these may leads to *Stanika Vata Prakopa* in *Greeva* and *Amsa Pradesha* leading to *Vishwachi.* Thus, *Vishwachi* is considered as a occupational hazard as most of the

professional become its victim due to their improper working pattern which has its affect on cervical spine. *Lakshanas* of *Vishwachi*, that indicate either *Vataja* or *Vata Kapahaja Vishwachi* are described as *Vishesha Lakshanas*. In the *Samprapti* of the *Vishwachi* were vitiated *Vata* affects the *Kandara* of the *Talapradesha, Bahuprushta* and *Anguli*, which leads to the restriction of movements. *Pakvashayagata Vatakopa* leads to *Vilomagati* of *Vata* taking *Stanasamsraya* in *Greeva* and *Amsa Pradesha* . Based on the prakruti, As the involvement of *Vata* is more in the *Prakruti,* there will be more chances of *Prakupita Vata* affecting them. Among the *Aharaja Nidana* intake of *Viruddhahara* occasionally, which affects *Agni* leads to *Doshaprakopa* but does not expel, which causes *Dhatukshaya* and *Vataprakopa. Ajeernashana* and *Vishamashana* leads to *Vata Prakopa.* Intake of *Tikta Rasa,* having *Ruksha, Shita, Laghuguna* it does *Sarvadhatu Shoshana* and continuous usage causes *Vata Prakopa*. *Katu Rasa* due to the *Vayu* and *Agnimahabhoota* predominance leads to *Kampa* and *Toda* in *Bhuja. Rukshanna , Shitanna* ie refrigerated food leads to *Vata Prakopa*. *Anashana, Alpanna,* leads to improper nourishment of *Dhatus* results in *Dhatukshaya. Sthira, Manda*, *Guruguna* of *Kapha* increases and *Tikshna Guna* of *Pitta* decreases resulting in *Agnimandya* and *Ama* formation. There is *Rasavaha* and *Annavaha Srotodushti* , this leads to loss of appetite. The irregular nature of appetite is due to *Vata Dosha* which aggravated in the later stages due to *Srotorodha.* Among *Viharaja hetu*, *Ratrijagarana*, *Vegasandharana* daily leads to aggravation of *Rukshatva* leads to vitiation of *Vata Dosha*. *Divaswapna* causes *Srotorodha* excites *Kaphavata* leads to *Vata Prakopa*. *Dukhasayya* and *Asana* gives more pressure of the spine and disturbs the muscular integrity leads to *Vata Prakopa*. *Ati chankramana* may cause excessive stress and strain in the spine. Exposure to AC and *Ati Maruta Sevana* for a long run leads to *Vata Prakopa. Manasika* like *Chinta, Shoka, Bhaya, and Krodha* having *Rajasika Guna* which increases *Vata.* By considering the diagnostic tests, Spurling test and Lhermitte'sign reveals the presence of Radiculopathy and compression of the cervical spinal cord respectively. Clinical examnination of

cervical spine revealed that *Vishwachi* is a *Vedana Pradhana Vatavyadhi* which leads to *Bahukarmakshaya* and *Cheshtahani* this, hampers the day to day activities from mild to severe form. NDI gives the information as how the neck pain has affected the ability to manage everyday life. Radiological changes showed degeneration of the intervertebral discs in the spine. Presence of osteophytes may be due to the osteoporotic changes. Presence of sclerosis of the end plate may be due to the compromised blood supply to the vertebra due to osteophytes resulting thickening or hardening. Abnormality in lordosis may be due to more pressure in the neck and causes pain. Disc bulge may be due to the intervertebral disc degeneration and weakening. Cord compression may be due to the gradual wear and tear on the bones of the spine. Dehydration usually occurs during the aging process, but in some patients the disc can loss hydration much more quickly due to the more stress and strain to the cervical spine and affects less cushioning and more prone to crack and tears. Majority of the vertebrae affected are C5-C6 in the study.

CONCLUSION

Vishwachi is a *Vedana pradhana Vatavyadhi* in which the *Kandara* of *Bahuprushta* afflicted by morbid *Vata* leading to motor and sensory symptoms of upperlimb. *Vishwachi* in contemporary discipline is understood as cervical spondylosis based on etiology and clinical presentation.The main *Doshas* involved in the *Samprapti* of *Vishwachi* are *Vyanavayu* and *Avalambhaka* kapha. *Vishwachi* can be incorporated under the umbrella of *Upadhatu pradoshaja Vikara* considering the involvement of *Kandara*.*Kandara* is understood as Peripheral nerves. From the list of *Aharaja* and *Viharaja Nidana* of *Vatavyadhi*, intake of *Laghu*, *Ruksha*, *Sheeta*, *Viruddha* , *Vishamashana*, *Alpanna sevana* ,working for long hours, sitting or lying in uncomfortable postures and suppression of natural urges are found to be the chief factors causing *Vishwachi*. Psychological factors includes *Chinta*, *Shoka*, *Bhaya* and *Krodha* are also play a prime role in manifestation of the disease. In this study, Aharaja and *Manasika Hetus* acts as *Vyanjaka Hetu*, *Viharaja Hetu* acts as *Utpadaka Hetu*. Radiological examination confirmed that majority of the patients had degenerative changes

in C5-C6, C6-C7vertebrae. Osteophytes, stenosis, dehydration, cord compression are due to *Dhatukshaya* and *Upadhatukshaya* leads to *Shatilyata*. *Khalli* is a neurological condition explained in our literature is a combination of *Gridrasi* and *Vishwachi* which simulates cervical myelopathy. If the disease is not diagnosed properly at right time, it ends with the complications like Cervical Radiculopathy, Myelopathy and other serious conditions.

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