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# Analysis of structural changes observed in *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column)

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## ABSTRACT

*Prishtavamsha Sandhi* (joints of vertebral column) is the *Cheshtavantha Prathara* (movable and floating) type of joint. Twenty four joints are present in *Prishtavamsha* (vertebral column). Intervertebral joints are the joints which connect vertebrae to each other consists of cartilaginous joints in between the vertebral bodies and synovial joint between vertebral arches. *Sandhigatha Vata* (osteo arthritis) is one among the *Vatavyadhi*, which can affect all joints in the body. *Sandhigatha Vata* (osteoarthritis) will be dominated with symptoms like pain, swelling and impairment of function. In *Sandhigatha Vata* (osteoarthritis), destruction occurs in the joints due to aggravated *Vata*. But it is not clear about the type of destruction observed in the joints. To rule out the various structural changes observed in the joints of *Prishtavamsha* (vertebral column) this work is being undertaken. Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column), all patients showed structural changes, 38% having Intervertebral disc prolapse, 22% having spondylosis, 20% having osteophytes, 8% with Osteosclerosis, 6% having spondylolisthesis, 5% with fractures and 1 with stenosis justifies structural changes (*Hanthi Sandhi*) occurs in *Sandhigatha Vata* (osteoarthritis). All patients had pain and restricted movements, 80% patient had swelling which justifies the symptoms of *Sandhigatha Vata* (osteoarthritis).

**Key words:** Intervertebral Joints, Intervertebral Disc Prolapse, *Prishtavamsha Sandhi*, Intervertebral Joints, *Sandhigatha Vata*, Osteoarthritis.

## INTRODUCTION

*Prishtavamsha Sandhi* (intervertebral joint) is the *Cheshtavantha*<sup>[1]</sup> *Prathara* (movable and floating) type of joint.<sup>[2]</sup> Intervertebral joints are the joints which connect vertebrae to each other consists of

cartilaginous joints in between the vertebral bodies and synovial joint between vertebral arches.<sup>[3]</sup> Back pain is a common symptom that affects 60-90% of the people at some time in their lives.

*Sandhigatha Vata* (osteoarthritis) is one among the *Vatavyadhi*, which can affect all the joints in the body. *Sandhigatha Vata* (osteoarthritis) will be dominated with symptoms like pain, swelling and impairment of function. In *Sandhigatha Vata* (osteoarthritis) on palpation the joint appears as if it is a leather bag inflated with air and pain is observed while making efforts for extension and contraction of joint.

In *Sandhigatha Vata* (osteoarthritis) destruction occurs in the joints due to aggravated *vata*.<sup>[4]</sup> But it is not clear about the type of destruction observed in the joints. To rule out the various structural changes observed in the joints of *Prishtavamsha* (vertebral column) this work is being undertaken.

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**Methods of collection of data**

1. Literature regarding the *Prishtavamsha Sandhi Shareera* (anatomy of intervertebral joints) was collected from all literary works, books and journals including all published materials on the concept related to the subject.
2. Dissection was done in the region of thoracic and lumbar vertebrae to study the regional anatomy of intervertebral joints.
3. Case proforma was prepared for assessing the *Sandhigatha Vata* (osteoarthritis).
4. Screening of 100 patients were done having the signs and symptoms of *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column) from IPD and OPD of S.D.M Ayurveda Hospital, Udupi and other referral hospitals

**DISCUSSION****Discussion on age**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column), 30% patients were of the age group 55-65 years which indicates *Vata Dosha Vridhi* occurs in the old age and people of the old age group are more prone to *Sandhigatha Vata* (osteoarthritis).

**Discussion on nature of work**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column), 66% patients used to stand during work which indicates while standing more weight is beared by the *Prishtavamsha* (vertebral column) leading to the aggregation of *Vata*.

**Discussion on economic status**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column) 51% patients belong to lower middle family status which explains malnutrition leads to aggregation of *Vata*.

**Discussion on Prakruti**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column),

68% patients belong to *Vatapitta Prakruti* which indicates *Sandhigatha Vata* (osteoarthritis) is more prone to *Vata Prakruti* people.

**Discussion on swelling**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column), 80% patient had swelling which justifies *Shopha* (swelling) as one of the main symptom of *Sandhigatha Vata* (osteoarthritis).

**Discussion on tenderness**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column), 51% patient has grade 3 tenderness and 26% patient had grade 4 tenderness which justifies *Soola* (pain) as one of the main symptom of *Sandhigatha Vata* (osteoarthritis).

**Discussion on flexion and extension movements**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column), in flexion and extension and lateral bending movements all patients had pain which justifies *Prasarana Akunchanayor Vedana* (pain during flexion and extension) symptom in *Sandhigatha Vata* (osteoarthritis) told by *Acharya Charaka*.

**Discussion on structural changes observed in X-ray and MRI**

Among 100 patients suffering from *Prishtavamsha Sandhigatha Vata* (osteoarthritis of vertebral column), all patients showed structural changes, 38% having IVDP, 22% having spondylosis, 20% having osteophytes, 8% with osteosclerosis, 6% having spondylolisthesis, 5% with fractures and 1 with stenosis justifies structural changes (*Hanthi Sandhi*) occurs in *Sandhigatha Vata* (osteoarthritis).

**CONCLUSION**

*Prishta Vamsha* (vertebral column) extends from first thoracic vertebrae to the fifth lumbar vertebrae according *Acharya Susruta's* view. *Prishtavamsha* (vertebral column) extends from the first thoracic vertebrae to the tip of coccyx according to *Acharya Charaka's* view. *Prishtavamsha Sandhis*

(Intervertebral joints) are of *Prathara* variety which means one floats over the other. *Asthis* of *Prishtavamsha* (bones of vertebral column) are the thoracic vertebrae, lumbar vertebrae and the intervertebral disc between them according to *Acharya Susruta's* view. *Asthi* of *Prishta* (bones of vertebral column) region can be correlated to thoracic vertebrae, lumbar vertebrae, sacrum, and coccyx according to *Acharya Charaka*. *Valaya* type of *Asthi* indicates circular shape formed by the vertebral body along with vertebral arch. Destructive changes (*Hanthi*) a symptom of *Sandhigatha Vata* (osteoarthritis) can be correlated to the structural changes observed in degenerative disorders like osteoarthritis, spondylosis, spondylolisthesis etc., which are observed in X-ray and MRI. Intervertebral disc prolapse is the main degenerative disorder observed in this study followed by spondylosis.

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