

A Study on Effectiveness of Homoeopathic Medicines in the management of cervical spondylosis presenting with cervical radiculopathy

Dr. Smitha Madhavan

Introduction

Pain in neck and its associated complication is a regular feature to any orthopedic clinic⁴. Neck pain is commonly arises from diseases of the cervical spine and soft tissues of the neck⁵. Degenerative changes of the cervical spine are one among the important causes of neck pain⁴. Key in 1838 probably gave the first description of a spondylotic bar.²³

“SPONDYLO” is a Greek word meaning vertebra and spondylosis generally mean changes in the vertebral joint characterized by increasing degeneration of the intervertebral disc with subsequent changes in the bones and soft tissues¹². About 50% of people over age 50 experience neck pain and stiffness due to cervical spondylosis. Of these people, 25- 40% has at least one episode of cervical radiculopathy.¹² Degenerative changes develop in the vertebral column with advancing age¹⁶. So these changes are found almost universally in some degree in persons over 50 years of age¹⁴.

The cervical spine is particularly susceptible to degenerative problems because of its large range of motion and its somewhat complex anatomy⁹. It is also likely that, subjects who develop cervical spondylosis have relatively narrower spinal canals¹⁶.

Neck pain arising from the cervical spine is typically precipitated by neck movements and may be accompanied by focal spine tenderness and limitation of motion. Cervical spine trauma, disk disease, or spondylosis may be asymptomatic or painful and can produce a myelopathy, radiculopathy, or both. The nerve roots most commonly affected are C7 and C6.⁵ Pain may be neurogenic when the spinal cord or nerve roots are compressed.⁷ It is the most common cause of spinal cord dysfunction in patients older than 55 years.¹⁹

Conservative treatment results in resolution of symptoms in great majority of patients with radiculopathy, but a few require surgery in the form of foraminotomy or disc excision.¹⁵

As radiculopathy is found to be a distressing disease and no scientific study and statistical analysis is known to be conducted with Homoeopathic medicines for the management of this disease. So I decided to take over a research study on the topic “Effectiveness of Homoeopathic medicines in the management of cervical spondylosis presenting with radiculopathy” .

Aim

To study the effectiveness of Homoeopathic medicines in the management of cervical spondylosis presenting with radiculopathy.

Clinical anatomy

There are seven cervical vertebrae and eight cervical spinal nerves. Among these vertebrae 3rd, 4th, 5th and 6th are typical vertebrae, first and second are distinctively unique and the 7th is transitory between the cervical and thoracic vertebrae. All cervical vertebrae possess a distinguishing feature, i.e. they possess a foramen in their transverse process, called the foramen transversarium. The two important structures in anatomical relationship with cervical vertebrae are cervical spinal nerves and vertebral artery. Vertebral artery passes through the foramina transversarii of the upper 6 cervical vertebrae. Since there are 7 cervical vertebrae and 8 cervical spinal nerves, the 7th cervical vertebra will have the 7th cervical nerve above and the 8th nerve below.

Typical cervical vertebra has a rectangular body with concave superior surface which articulates with the convex inferior surface of the vertebral body above it. The size of the vertebral body increases in the lower vertebrae to support the additional weight of head, neck and upper extremity on the spinal column. The pedicles arise from the body and project in a postero-lateral fashion to join the neural arch. The vertebral foramen is therefore rectangular in shape in the cervical region.

The articular processes are at the junction of the pedicles and the laminae. The laminae form the posterolateral legs of the triangular vertebral foramen. They serve as the bony attachments for the deep muscles of the neck and protect the underlying cervical spinal cord.

The spinous processes of the cervical vertebrae are most posterior and unite the laminae. Spinous process is bifid in typical cervical vertebrae.

The spinous process and ligamentum nuchae (thick midline septum of connective tissue attaches to the spinous process) are attachment sites for muscles of the back of neck.

Another important structure is the transverse process which possesses the foramen transversarium. Posterior and anterior tubercles exist at the tip of transverse processes of C3 to C6. They give attachments to muscles.

The first cervical vertebra is atlas. It lacks body and is composed of an anterior and posterior arch with laterally projecting transverse process. Body of the atlas is the dens of second cervical vertebra. The dens articulates with the posterior facet on the anterior arch of atlas and a transverse ligament. This allows atlas to rotate around the dens in a horizontal plane.

The superior articulating facets of the atlas articulate with the condyles of the occipital bone.

Transverse ligaments attached to the tubercles of the atlas, and that articulate with the dens, this prevents the dens from sliding posteriorly into the C1 vertebral foramen which contains the spinal cord.

Posterior arch of atlas has two important physical markings,

- 1) Groove for the vertebral artery

2) Attachment site for the posterior atlanto-occipital membrane (tough elastic membrane attaches superiorly to the posterior margin of foramen magnum)

Second cervical or axis has a superior projecting process, the dens which serves as the body of the overlying atlas.

Seventh cervical vertebra has a non-bifid spine which projects horizontally to be subcutaneous at the base of the neck. It is called the vertebra prominens. The transverse process has a foramen transversarium but it usually does not contain vertebral artery, but veins are present.

Cervical ribs when they occur are most frequently found on the anterior aspect of the transverse process of the C7 vertebra.¹

The cervical disc has three parts, the cartilage end plate which adheres to the cancellous bone of adjacent vertebral bodies, the central semisolid nucleus pulposus which is relatively incompressible and inelastic, and the slightly elastic annulus fibrosus which surrounds and retains it and which regulates and restricts movements of the spine.²² It is separated from the vertebral body above and below by cartilaginous end plates. An important distinction from the lumbar spine is that the spinal canal in the cervical area contains the spinal cord rather than the lumbar nerve roots, so a reduction in the size of the spinal canal by spondylosis or a midline disc herniation causes compression of the spinal cord, which results in significantly more dangerous complications.³

The cervical spine contains the joints of Luschka, which are not present elsewhere in the spine.

These joints, one on each side of the disc, can give rise to bony spurs or ridges (osteophytes), as can the main facet joints (apophysial joints) and the edges of the vertebral bodies adjacent to the inter-vertebral discs.³

The exiting nerve root on each side travels between these joints and can be compressed by osteophytes extending in to the intervertebral foramen from any or all of these three sources or from a posterolateral soft disc herniation.³

Movements at the cervical spine:

The anatomical configuration of the cervical spine allows remarkable freedom of movements to the neck in all axes and planes. The following four movements are taken as the principle movements:

- 1) Flexion in sagittal plane
- 2) Extension in sagittal plane
- 3) Lateral flexion to right and left in frontal plane
- 4) Rotation to right and left in transverse plane.

The major part of mobility to the cervical spine occurs between the occiput, atlas and axis vertebrae. The greatest movement of cervical spine occurs between the atlas and axis. Almost 50% of the movement of total rotation occurs at these joints, the rest 50% is contributed by the remaining cervical vertebrae. The movements of lateral flexion and rotation never occur as isolated movements like flexion and extension. Both these movements are interrelated with the

participation of all the inter-vertebral joints below the level of C2. Flexion stretches both the cervical and the thoracic extend of the dura matter. It also compresses the anterior portion of the disc, resulting in opening of the inter-vertebral foramina, whereas extension results in their narrowing.⁴

The movements of lateral flexion and rotation bring about the closure of foramina in the same side of lateral flexion or rotation, at the same time resulting in opening of the foramina on the opposite side. The region between C4 and C6 interspaces is most mobile during the movements of flexion and extension. This is also the region of maximum stress. Therefore, it is the most susceptible site for wear and tear (cervical spondylosis).⁴

Movements of the neck and upper extremity and their relative level of segmental association⁴

| Movement | Level of association |
|------------------------------------------|----------------------|
| Neck rotation | C1 |
| Shoulder shrugging | C2,C3,C4 |
| Shoulder abduction and external rotation | C5 |
| Elbow flexion and wrist extension | |
| Wrist flexion and elbow extension | C6 |
| Wrist ulnar deviation, thumb motion | C7 |
| Finger abduction and adduction | C8 |
| | T1 |

Level of nerve root lesion and cutaneous analgesia⁴

| Nerve root | Analgesia |
|------------|---------------------------------------------------------------------------------------------------------------|
| C4 | Trapezial ridge to the tip of shoulder |
| C5 | Upper scapula and deltoid, lateral brachial region and radial aspect of forearm |
| C6 | Upper scapular, Lateral brachial region, radio-volar aspect of forearm and tips of the thumb and index finger |
| C7 | Mid-scapular, posterior brachial region, dorsum of forearm, hand and index, middle and ring finger. |
| C8 | Ulna-volar aspect of forearm and ulnar border of ring and little fingers. |

Tendon jerks and associated nerves⁴

| Tendon-jerk | Nerve-root |
|------------------|------------|
| Biceps | C5 and C6 |
| Brachio-radialis | C5 and C6 |
| Triceps | C7 and C8 |

Type of lesion and the symptoms ⁴

| Lesion | Symptoms |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. Compression of the nerve trunk 2. Compression of the dural sleeve 3. Disc lesion (cervical, thoracic) 4. Lesion of the thoracic spine 5. Localized cervical facet joint restriction 6. Degenerative changes involving facet joints 7. Compression of the spinal cord | <p>Paraesthesia without pain</p> <p>Pain in the dermatomal distribution Neck flexion elicits pain (stretches the cervical and thoracic extends of the dura matter)</p> <p>Painful scapular approximation Quadrant test positive on the involved site.</p> <p>Unilateral scapular and arm pain. Capsular pattern of movements. Limitation of movements is mild in flexion, moderate in lateral flexion and severe in extension. Pain and stiffness in neck. Bilateral pain in the arms. Headache radiating from occiput to frontal area.</p> <p>Presence of spasticity, in coordination and plantar extensor response.</p> |

CERVICAL SPONDYLOSIS

Definition

Cervical spondylosis refers to a degenerative process of the cervical spine producing narrowing of the spinal canal and neural foramina, producing compression of the spinal cord and nerve roots, respectively.⁹

Incidence and prevalence

Transient episodes of acute neck pain and stiffness occur in 40 – 50 % of all adults, with an increasing incidence in those over the age of 45 years.¹⁵ By age 50, 25-50% of people develop cervical spondylosis; by 75 years of age, it is seen in at least 70% of people.¹² Indeed, they are found almost universally in some degree in persons over 50 years of age.

Symptoms of cervical spondylosis may appear in those as young as 30 years and are most commonly in those aged 40-60 years. Radiological spondylotic changes increase with patient age. On the basis of radio logic findings, 90% of men older than 50 years and 90% of women older than 60 years have evidence of degenerative changes in cervical spondylosis.¹⁹

Sex:

Both sexes are affected equally. Cervical spondylosis usually starts earlier in men than in women.¹⁹

Aetiology

1. Wear and tear on joints that accompanies aging (osteoarthritis)
2. Arthritis (inflammation of joint)
3. Trauma such as automobile accidents with whiplash injury, athletic injuries, sudden jerks on arms and falls.⁸

Whiplash injury is due to trauma (usually automobile accidents) causing cervical musculoligamentary sprain or strain due to hyperflexion or hyperextension.

There are several predisposing factors, which may cause acceleration of these changes.

1. Occupations requiring repetitive motion of the cervical spine.
2. Previous injury with fracture or disc prolapses
3. Segmentation defects like hemivertebra or fused vertebrae.¹²
4. There may be a hereditary predisposition to intervertebral disc disease.¹⁸
5. Fluorosis may play an important part in the development of ossified posterior longitudinal ligament in India.¹⁸

Pathogenesis:

From skeletal maturity to the age of 30 years, few morphological changes occur in the cervical spine. Thereafter, the process of normal aging in the cervical spine contributes to and is difficult to differentiate from pathophysiologic changes.¹⁸

Disc degeneration causes cervical spondylosis. As discs age, they fragment, desiccate and collapse. Initially, this starts in the nucleus pulposus, resulting in the central annular lamellae buckling inward while the external concentric bands of the annulus fibrosus bulge outward. This results in increased mechanical stress at the cartilaginous end plates at the vertebral body lip.¹²

Subperiosteal bone formation occurs next, forming osteophytic bars that extend along the ventral aspect of the spinal canal. In some patients, these bars encroach on neural tissue.¹²

Uncinate process hypertrophy also occurs, often encroaching upon the ventrolateral portion of the intervertebral foramina. Nerve root irritation also may occur as intervertebral disc proteoglycans degrade. Ossification of the posterior longitudinal ligament (OPLL), a condition often seen in certain Asian populations, can occur with cervical spondylosis and can be an additional contributing source of severe anterior cord compression.¹²

Cervical spondylotic myelopathy occurs as a result of three important pathophysiologic factors: static-mechanical, dynamic-mechanical, and spinal cord ischemia. As ventral osteophytes develop, the cervical cord space becomes narrowed. Thus, patients with congenitally narrowed spinal canals (10-13 mm) are predisposed to developing cervical spondylotic myelopathy. Age-related hypertrophy of the ligamentum flavum and thickening of bone may result in further narrowing of the cord space. Additionally, degenerative kyphosis and spondylolisthesis are fairly common findings that may further contribute to cord compression in patients with cervical spondylotic myelopathy.

Dynamic factors may be important in that, normal flexion and extension of the cord may aggravate spinal cord damage, initiated by static compression of the cord. During flexion, the spinal cord lengthens, which stretches it over ventral osteophytic bars. During extension, the ligamentum flavum may buckle into the cord, pinching the cord between the ligaments and anterior osteophytes.¹²

Spinal cord ischemia probably also is involved in cervical spondylotic myelopathy. Histopathologic changes that are observed in cervical spondylotic myelopathy frequently involve gray matter with minimal white matter involvement (a pattern consistent with ischemic insult). Ischemia probably occurs at the level of impaired microcirculation.

More recently, shearing forces have been theorized to be important in the pathophysiology of cervical spondylotic myelopathy. Narrowing of the spinal canal and abnormal or excessive motion may result in shear forces that cause axonal injury in the cervical cord, where changes seen in the cord may actually be a form of stretch injury.¹²

Pathology

The primary event is a progressive decrease in the degree of hydration resulting in loss of disc height, disc fibrosis and annular weakening.¹² Glyco-proteins diminish in size and number and their ability to retain water diminishes.¹⁸ The extra mobility between adjacent vertebral areas probably results in osteophyte formation. Though osteophyte formation may be the body's attempt to stabilize the joints, their growth can result in narrowing of the spinal canal and cord compression.¹²

The important pathological changes are:

1. Bony ridges (osteophytes) develop on the vertebral bodies adjacent to the areas of motion at the intervertebral discs.
2. The facets undergo degeneration and hypertrophy.
3. The ligamentum flavum undergoes hypertrophy and buckling.⁹

In addition to bony changes soft tissue changes develop. The ligamenta flava lose their elasticity and tend to buckle forwards when the cervical spine is extended. This leads to compression of the posterior aspect of cord. In the intervertebral foramina, fibrosis of the dural sheath contributes to further pressure on the spinal nerves and their roots. Pressure on the spinal arteries during their course in the bony structures leads to secondary vascular changes which cause their occlusion and ischemic damage to the cord and lower brain stem.¹⁶

Clinical features

Symptoms of cervical spondylosis may appear in those as young as 30 years and are most commonly in those aged 40-60 years.¹⁹ The clinical presentation may vary widely from that of a cervical radiculopathy, myelopathy or both.¹⁶ Progressive neck pain is a key indication of cervical spondylosis.¹⁰

Cervical spondylotic radiculopathy may develop acutely or more gradually due to osteophytic encroachment of the intervertebral foramina.¹⁵ When evaluating patients with suspected cervical radiculopathy it is important to consider the following: (1) overlap in function between adjacent nerve roots is common, (2) the anatomic pattern of pain is the most variable of the clinical

features, and (3) the distribution of symptoms and signs may be evident in only part of the injured nerve root territory.⁵

Patients with neck pain may relate most of the symptoms to a traumatic episode but more often, symptoms develop gradually⁷. Initial symptoms consist of paraesthesia and pain in the distribution of cervical dermatomes, pain being felt most frequently over the shoulder, arm, scapular region, forearm and hands. Movements of the neck, travel and adoption of certain postures aggravate the pain, which may be intermittent or even constant. Sensory loss to pin prick may be demonstrable.¹⁶ In addition, the patient has vague symptoms, such as blurred vision, tinnitus, or dysphagia. Often the discomfort is worse in the morning. There may often be an area of point tenderness in the surrounding musculature called a trigger point.⁷

Important symptoms and signs are:

1. Neck pain and stiffness may be worse with upright activity.
2. Numbness and weakness in the arms, hands and fingers, and trouble walking due to weakness in the legs.
3. Feel or hear grinding or popping in the neck when you move.
4. Muscle spasms or headaches may originate in the neck.

The condition can make you feel irritable and fatigued, disturb your sleep and impair your ability to work.¹⁰ Pain caused by pressure upon the nerve in the cervical region follows a clearly defined course which depends upon the particular nerve involved, and it is usually severe.¹⁴

In the assessment of sensory loss it should be remembered that the middle or long finger, representing the central axis of the limb, is innervated mainly by the seventh cervical nerve. The radial half of the hand is innervated by the proximal roots of brachial plexus(C5, C6) whereas the ulnar half is innervated from the more distal roots(C8, T1).¹⁴

Motor phenomena consist of weakness and wasting of the deltoid, triceps, and biceps or forearm muscles. Wasting of small muscles of the hand is rare in pure cervical spondylosis. Involvement of the C5 segment gives rise to inversion of supinator jerk. Fasciculation may be seen over the affected muscle. Tendon reflexes are diminished. The lesion may be unilateral or asymmetrically bilateral.¹⁶

On examination, patient usually exhibit restriction of neck movement, especially in extension. Downward head compression by the examiner as well as flexing the neck to the side of the involvement usually aggravates the pain. Nerve root compression in the upper cervical spine is unusual. Compression of C2 causes occipital neuralgia, but if C3 and C4 is compressed, it usually causes non specific neck and shoulder pain without any muscle weakness. Compression of the C5 root leads to shoulder and deltoid pain with weakness in the deltoid muscle. The most common root compression syndromes are those involving the sixth and seventh cervical roots. With C6 root compression, the pain is in the radicular distribution down the arm, distal to the elbow, with paraesthesias or sensory loss over the thumb and index finger. Biceps weakness (flexion of elbow) as well as weakness in extension of the wrist, is present and diminution of the biceps and brachioradialis reflex may be present. With C7 root compression, the pain radiate down the back of the arm distal to the elbow. Paraesthesias in the middle finger that also involve the index finger or ring finger or both may be present. Because of the overlapping of the C6 and C8 root the sensory loss may be minimal or absent. Triceps muscle weakness (extension of the elbow) as well as weakness in flexion of the wrist is a hallmark of this root compression. Eighth

nerve root compression causes pain down the arm as well as sensory changes that involve the ulnar side of the hand but they usually present with intrinsic hand muscle weakness.³

Findings at physical examination may include the following:

1. Typically, the patient exhibits a head tilt away from the side of injury and holds his or her neck stiffly.¹³
2. Increased pain with lateral bending away from the affected side can cause increased displacement of a disk herniation upon a nerve root, while ipsilateral pain would suggest an impingement of a nerve root at the site of the neural foramen.¹³
3. Spurling sign: Radicular pain is exacerbated by extension and lateral bending of the neck toward the side of the lesion, which results in further foraminal compromise.¹⁹
4. Lhermitte sign: This generalized electrical shock sensation is associated with neck extension.¹⁹
5. Hoffman sign: Reflex contraction of the thumb and index finger occurs in response to nipping of the middle finger. This sign is evidence of an upper motor neuron lesion. A Hoffman sign may be insignificant if present bilaterally¹⁹.
6. Many patients report a reduction in their radicular symptoms by abducting their shoulder and placing their hand behind their head. This is thought to occur by decreasing tension at the nerve root.¹³

On palpation, tenderness usually is noted along the cervical paraspinals and usually is more pronounced along the ipsilateral side of the affected nerve root. Muscle tenderness may be present along muscles where the symptoms are referred (eg, medial scapula, proximal arm, lateral epicondyle). Associated hypertonicity or spasm on palpation in these painful muscles may occur.³

Manual muscle testing is an important aspect of determining a nerve root level on physical examination. Perform manual muscle testing to detect subtle weakness in a myotomal distribution. Weakness of shoulder abduction suggests a C5 radiculopathy. Elbow flexion and wrist extension weakness would occur with C6 radiculopathies. Weakness of elbow extension and wrist flexion would occur with a C7 radiculopathy, and weakness of thumb extension and ulnar deviation of the wrist would be seen in C8 radiculopathies.¹³

On sensory examination, a dermatomal decrease or loss of sensation should be noted in patients with clear-cut radiculopathy. In addition, patients with radiculopathy may have hyperesthesia to light touch and pin prick examination. However, the sensory examination can be quite subjective since it requires patient response.¹³

Deep tendon reflexes, or more properly muscle stretch reflexes, since the reflex occurs after a muscle stretch is obtained (most commonly by tapping the distal tendon of a muscle), are helpful in the evaluation of patients presenting with limb symptoms suggestive of a radiculopathy. The examiner must position the limb properly when obtaining these reflexes and the patient needs to be as relaxed as possible. Any grade of reflex can be normal, so it is the asymmetry of reflexes, which is most helpful. The biceps brachii reflex is obtained by tapping the distal tendon in the antecubital fossa. This reflex occurs at the C5-6 level. The brachioradialis is another C5-6 reflex that can be obtained by tapping the radial aspect of the wrist. The triceps reflex can be obtained

by tapping the distal tendon at the posterior aspect of the elbow with the elbow relaxed at about 90° of flexion. This tests the C7-8 nerve roots. The pronator reflex can be helpful in differentiating C6 and C7 nerve root problems. If it is abnormal in conjunction with an abnormal triceps reflex, then the level of involvement is more likely to be C7. This reflex is performed by tapping the volar aspect of the distal radius with the forearm in a neutral position and the elbow flexed. This results in a stretch of the pronator teres resulting in a reflex pronation.¹³

Myelopathy has been classified in various ways and depends on the involvement of the lateral or medial cord or vascular involvement. The signs may be a mixture of upper motor neuron signs in the lower limbs and lower motor neuron signs in the upper limbs and may simulate MND or syringomyelia. Occasionally the presentation may be that of Brown-Sequard syndrome¹²

Pain and stiffness in neck with a gritty feeling in the tip of fingers. Patients will complain of stiffness and loss of dexterity, with unsteadiness of gait. Neck pain may not be a major feature.² Bladder involvement is unusual. Combination of radicular and cord symptoms are found in radiculomyelopathy. Vertebro basilar insufficiency due to spondylitic compression of the vertebral artery is uncommon, though popularly diagnosed.¹²

In patients that demonstrate concern about possible myelopathy, lower extremity reflexes and Hoffman and Babinski reflexes also should be assessed. Diffuse hyperreflexia and/or positive Hoffman and abnormal Babinski reflexes would indicate that the patient has a cervical myelopathy.¹³

Diagnosis

Cervical spondylosis has to be suspected in all cases presenting with cervical cord or root symptoms in persons above the age of 40.¹³

1. History taking and clinical examination

2. Imaging Studies:¹³

In patients with traumatic injuries, lateral, antero-posterior, and oblique views should be ordered in plain radiographs. An open-mouth view also should be ordered to rule out injury to the atlantoaxial joint. Visualizing all seven cervical vertebrae is very important. If C-7 can not be properly seen, then a "swimmer's view" should be obtained for better visualization of the C7 and T1 segments.

The atlantodens interval (ADI) is the distance from the posterior aspect of the anterior C1 arch and the odontoid process. This should be less than 3 mm in the adult and less than 4 mm in children. An increase in the ADI suggests atlantoaxial instability. Flexion and extension views can be helpful in assessing spinal mobility and stability.

The clinician should be aware of the limitations of plain radiographs. Problems with both specificity and sensitivity exist. Correlations of findings on plain radiographs and cadaver dissections have found a 67% correlation between disc space narrowing and anatomic findings of disk degeneration. However, radiographs identified only 57% of large posterior osteophytes and only 32% of abnormalities of the apophyseal joints found on dissection.

Computed tomography (CT) provides good visualization of bony elements and can be helpful in the assessment of acute fractures. The accuracy of CT imaging of the cervical spine ranges from 72-91% in the diagnosis of disc herniation. The accuracy has approached 96% when combining CT with myelography. The addition of contrast allows for the visualization of the subarachnoid space and assessment of the spinal cord and nerve roots.

CT with myelography is thought to best assess and localize spinal cord compression and underlying atrophy. This study also can determine the functional reserve of the spinal canal in evaluating athletes with possible cervical stenosis. Because of the improved soft tissue visualization provided by MRI, CT is being replaced by MRI for most cervical spine disorders.

MRI has become the method of choice for imaging the neck to detect significant pathology. MRI can detect ligament and disk disruption, which cannot be demonstrated by other imaging studies. The entire spinal cord, nerve roots, and axial skeleton can be visualized. This usually is performed in axial and sagittal planes.

MRI has been found to be quite useful in evaluating the amount of cerebral spinal fluid surrounding the cord in the evaluation of patients with cervical canal stenosis

Electrodiagnostic studies are important in identifying physiologic abnormalities of the nerve root and in ruling out other neurological causes. Electromyography has been shown to be a useful diagnostic test in the diagnosis of radiculopathy and has correlated well with findings on myelography and surgery.¹³

Differential diagnosis¹⁴

Distinction has to be made

1. From other causes of neck pain
2. From other causes of upper limb pain

Other causes of neck pain include prolapsed cervical disc, tuberculous or pyogenic infection, tumours involving vertebral column and fibrositis.

Other causes of upper limb pain are as follows

1. Central lesions: tumours involving the spinal cord or its roots, cervical spondylolisthesis.
2. Plexus lesions: tumours at the thoracic inlet (pancoast), cervical rib, prolapsed inter vertebral disc.
3. Shoulder lesions with radiating pain in the upper arm.
4. Skeletal lesions such as tumour, infection or Paget's disease of a bone of the upper extremity.
5. Elbow lesions such as tennis elbow or arthritis.
6. Distal nerve lesions such as friction neuritis of the ulnar nerve at the elbow or compression of the median nerve in the carpal tunnel.¹⁴

Expectations (prognosis)

The natural history of cervical spondylosis is not known. Although the course of the disease is progressive and most patients have chronic symptoms, the large majority remains stable for many years and do not require surgical intervention.²¹

Most patients with cervical spondylosis will have some chronic symptoms, but they respond to non-operative interventions and do not require surgery.¹⁰

Surgical procedures including laminectomy and anterior discectomy, may arrest progression of disability in myelopathy, but may not result in neurological improvement.¹⁵

COMPLICATIONS

Chronic neck pain

Progressive loss of muscle function or feeling

Permanent disability (occasional)

Inability to retain feces (fecal incontinence) or urine (urinary incontinence).

TREATMENT

There is a strong tendency for the symptoms of cervical spondylosis to subside spontaneously, though they may persist for many weeks and the structural changes are clearly permanent. Treatment is thus aimed towards assisting natural resolution of temporarily inflamed or oedematous soft tissues¹¹. Heat and massage are often soothing²⁰.

In the acute phase Initial treatment should be directed at reducing pain and inflammation. Treatment can begin with NSAIDs, and reducing the forces compressing the nerve root by relative rest, avoiding positions that increase arm and/or neck symptoms, manual traction, and if necessary, mechanical traction.

In addition, a cervical collar also can be used for patient comfort and some support. A cervical pillow at night can be helpful in maintaining the neck in a neutral position and limiting head positions, which cause narrowing of the neuroforamen. Manual, and if necessary, mechanical traction can be used to reduce radicular symptoms by decreasing foraminal compression and intradiscal pressures. Modalities, such as electrical stimulation, also have been found helpful in uncontrolled studies.

Cervical epidural steroids have been used in patients who have not responded to medications. Traction and a well-designed physical therapy programme, when properly performed by experienced physicians under fluoroscopic guidance, a significant number of patients respond when other treatments have not helped. Selective nerve root blocks can be helpful in patients with electrodiagnostically demonstrated single root lesions.

Acupuncture has been used on radicular pain with some success. This can be considered if pain control is not achieved with physical therapy and medications or in conjunction with these treatments. In addition, acupuncture can be tried instead of cervical epidural injection in patients who are hesitant or wish not to proceed with this procedure.

Once pain and inflammation are controlled, then various soft tissue mobilization techniques can be helpful to stretch the noncontractile elements of soft tissues. Instruct patients on proper stretching techniques, which they can complete 1-2 times per day. Gentle prolonged stretching is recommended. Stretching is best completed after a warm-up activity such as using an exercise

bike or brisk walking. . All exercises should be performed without pain, although some degree of postexercise soreness can be expected.

Patients should be encouraged to maintain their level of cardiovascular fitness as much as possible throughout the rehabilitation process. The patient should be told that these exercises (stretches and strengthening) should be continued indefinitely with the hope of preventing recurrences.¹³

Therapeutic plan is drawn which could include any or a combination of the following.⁴

1. Physical agents and massage;
2. Exercises;
3. Cervical traction;
4. Manipulation;
5. Cervical collar,
6. Postural and ergonomic advice.

Multi-centre trial has shown better relief of the symptoms with the combination therapy than with single modality.

A. Physical agents and massage

Various physical agents are routinely used mainly to:

- (i) Control inflammation;
- (ii) Control pain and muscle spasm;
- (iii) Control stiffness of soft tissues and joints;
- (iv) Assist mobility;
- (v) Increase blood supply and to relieve ischemia.

Initial relaxation is achieved by:

- (a) Superficial thermotherapy.
- (b) Pain reducing procedures of cryotherapy.
- (c) Massage

1. Exercises

Exercises play a decisive role in the management of cervical dysfunction. For planning the specific programme of exercise, it is important to understand the clinical significance of each movement at the cervical spine.

There are basically five types of exercises which are commonly used either singly or in combination.

The type and extent of exercise to be planned according to the patient's needs.

Relaxed passive movements: This includes manipulation and mobilization - when the chief aim is mobilization.

Strong isometrics are indicated when mobility is contraindicated but strength, endurance and tone of the cervical muscles are to be maintained or improved.

Active assisted movements, when the basic objective is to improve the weak muscles without exerting.

Active resisted exercises to strengthen the cervical muscles.

The effects of exercise are elongation of the tightened soft tissues to their normal range, minimize the periarticular fibrous contractures, regain normal length of the muscles, increase circulation to deeper neck tissues, improvement of the posture and functions of neck and provide encouragement and an overall feeling of physical betterment.

2. Cervical traction

Cervical traction is a modality of choice for many cervical dysfunctions. It is applicable in a wide range of problems from sprain to fractures and dislocations of the cervical vertebrae.

Types of tractions are continuous, static, intermittent and polyaxial.

Continuous traction is usually continued for 24 hours. Sustained small pull for long hours induces relaxation of the muscle spasm and gradual vertebral separation. It relieves compression on the nerve roots or the spinal cord. It reduces the fractures and dislocations of the vertebrae. It offers immobilization. It may help the prolapsed disc to move back into its place.

Static traction is traction with a constant pull varying from 10 – 30 lbs is applied for 20 – 25 minutes. It is indicated in the presence of definite neurological signs including radiating pain, not relieved by other conservative modes.

Intermittent traction is traction with alternate phases of stretching (pull) and relaxation is the popular mode of traction. It produces the effects of massage on the muscular, ligamentous and capsular structures. It promotes circulation, reduces swelling thereby reducing inflammation, spasm and pain.

Goodley invented a polyaxial system of cervical traction which exerts precise tractive force to a particular segment.

Duration of traction varies as per the requirements of the underlying pathology. Continuous traction may be needed for several weeks in cases of fractures, dislocations, prolapsed disc and pressure on the nerve root. Static traction may be needed for 20 – 25 minutes once a day or on alternate days. Intermittent traction is usually given for 15 – 20 minutes on alternate days.

The convenient position of applying overhead traction in sitting position is a common practice. Traction in supine produces better relaxation, greater posterior inter-vertebral separation, decreased muscle guarding and increased stability.

Traction should be applied in the position of greatest comfort. This position is detected by pre-traction evaluation. This consists of applying gentle manual traction in various combinations of flexion, rotation and lateral flexion, using passive physiological inter-vertebral movement testing techniques.

Cervical rotation should never be given during traction. It produces extra-stretching of ligament at the atlanto-axial level and is prone to produce traumatic inflammatory reaction and increased symptoms.

Traction is contraindicated in the following conditions

1. Marked ligamentous instability immediately inferior to the specific traction level.
2. Malignancy involving cervical or thoracic spine.
3. Signs and symptoms of cervical cord involvement.
4. Rheumatoid arthritis with necrosis of the ligaments adjacent to the traction level.

4. Manipulation.

Reduction of the intra-articular displacement in cervical spondylosis by manipulation is very effective, provided the spondylosis is not too advanced. It is always carried out during strong traction.

The contraindications for manipulation:

1. Evidence of impaired pyramidal function;
2. Root palsy: excluding minor paraesthesia;
3. Primary postero-lateral onset: where the symptoms appear in a reversed order, e.g., paraesthesia occurring first in the digits, followed by pain in the forearm, arm and then in the scapular region;
4. Cervical movements provoking brachial pain: instead of scapular region the increased pain is felt in the upper limb;
5. Long standing brachial pain – unilateral brachial pain of more than two month's duration and
6. Never attempt manipulation without thorough knowledge and practice.

5. Cervical collar

The use of cervical collar nowadays is generally discouraged. It is advised for acute disc-lesions, following surgery or reductions of fractures and dislocations. However, it may occasionally be useful in mild cervical dysfunctions where temporary rest is needed, e.g., during strenuous forward bending postures at work or during riding or driving automobiles etc. functions of cervical collar are as follows,

- (a) Rigid immobilization;
- (b) Partial immobilization;
- (c) Support and relaxation of muscles and soft tissues;
- (d) Carrying out repeated isometric exercises,
- (e) Correction of the deformity;
- (f) Conventional soft wrap around neck using folded towel at night with correct height of the pillow to maintain optimal neutral position of the neck in relation to shoulders is extremely effective in common neck pains.

Proper fitting of the collar is necessary, e.g.; its fitting in flexion is advocated where separation of facets and opening of the foramina is the aim.

6. Postural and ergonomic advice.

Advice on the maintenance of posture of the neck in relation to the various body positions and ergonomics plays a predominant role in the majority of patients with cervical pain. Faulty posture also accelerates degenerative changes.

Physiologically and mechanically the ideal posture is straight neck with the chin tucked in. Ergonomic advice is the single most important approach which can prevent recurrence of neck pain. The mass education on correct ergonomic principles should be ideal to prevent common neck pain.⁴

Surgery:¹²

It is indicated when there is progressive cord dysfunction, in acute cord compression and in persistent pain not responding to conservative measures and interfering with normal life.

Two surgical approaches, anterior and posterior, are available. Anterior approach is now used in majority of cases because it is simple and allows early postoperative mobilization and shorter hospitalization. A left sided approach avoids injury to the recurrent laryngeal nerve

On occasions, such as ossification of posterior longitudinal ligament, it may require drilling of the vertebral body (corpectomy) for adequate decompression. Visualization of the posterior longitudinal ligament and a possible tear, and exploration of the same for extruded disc fragments is an important step. The presence of such extruded disc fragments may be suggested by a careful study of the MRI pictures. When multiple levels (more than two) are involved, many advocate fusion in addition to discectomy.

When root pain is the predominant symptom, a fusion to prevent narrowing of the intervertebral foramen is recommended.

A tricorticate graft obtained from the posterior iliac crest so that its cancellous part lie against the subchondral bone above and below the space, while its cortical part forms the support between the vertebrae (Smith Robinson technique) is commonly used.

Attempts to take a graft from the anterior iliac crest may injure the lateral cutaneous nerve of the thigh. The Cloward's technique, using a bone dowel is also popular. Simmon's technique involves making a keystone square in the adjacent vertebral bodies for the graft.

Bailey and Badgley technique involves making a rectangular trough in the adjacent bodies for the graft. Cadaveric bone grafts and methyl methacrylate are used by some for obvious reasons, but autografts have been found superior. Some advocate suturing the prevertebral fascia over the graft to prevent graft migration.

Some advocate anterior instrumentation in addition to bone grafting, especially in cases where trauma is a factor. Anterior self locking plate fixation is common. Titanium cage filled with cancellous bone fixation is especially useful (with or without plates) in multilevel corpectomy. Post operatively, a hard cervical collar is advised for six weeks.

Posterior approach may be indicated in canal stenosis, either congenital or degenerative with hard disc protrusions or hypertrophy of the ligamentum flavum or multi segmental ossification of posterior longitudinal ligament.

C3 to C7, posterior laminectomy is recommended despite the level of involvement and gives adequate decompression. Additional foraminotomy (removal of the posterior wall of the intervertebral foramen) is helpful in myeloradiculopathy. Occasionally a soft lateral disc protrusion can be removed through hemi or a partial laminectomy or through an interpedicular approach.

The complications of an extensive laminectomy are, late development of spinal deformity and peridural fibrosis. These can possibly be avoided by expansive laminoplasty. It is performed by completely incising the laminae on one side and partially on the opposite side. Elevation with tilting of the lamina upwards on the incised side allows enlargement of the canal.¹²

There has been no documentation of long term benefit from surgery, although many series have shown evidence of benefit in the short term.²¹

Prevention of cervical spondylosis

Since cervical spondylosis is part of the normal aging process, not much can be done to prevent it. It may be possible to ward off some or all of the symptoms by engaging in regular physical exercise and limiting occupational or recreational activities that place pressure on the head, neck and shoulders. The best exercises for the health of the cervical spine are noncontact activities, such as swimming, walking, or yoga. Once symptoms have already developed, the emphasis is on symptom management rather than prevention.¹²

HOMOEOPATHIC CONCEPT

Life is a vital principle, a self moving force, a vital power which if acting in harmony preserves our bodies a harmonious whole, a disturbance of which is disease, a lack of which is death.²⁴

Hahnemann classified disease into four great divisions. The first of these classifications was simple, in that it embraces all diseases that might spring from mechanical and exterior sources; this included fractures, strains, indiscretions of diet, external poisons such as fumes or noxious plants, extremes of thermic conditions such as frostbite or sunstroke, and all trade diseases.²⁵

Wear and tear on joints that accompanies aging (osteoarthritis) and Trauma such as automobile accidents with whiplash injury, athletic injuries, sudden jerks on arms, falls contribute to the aetiopathogenesis of cervical spondylosis, it can be put under this above mentioned classification.

It was Hahnemann's teaching that the removal of the cause was the first step in the proper method of cure. This may occasion at times surgical procedure; rectification of diet; the removal of irritating substances; change of environment; anything and everything that may place the patient in the best possible relation for complete cure, which will take place of itself when the cause is removed.²⁵

To classify disease conditions as circumstantial or environmental is to view them in a limited way, and we must recognize the background and meet them on that ground if we are to cure. For this reason it is essential to find the similimum and to find the remedy for these conditions we must seek a deep acting remedy to eradicate the evil. It is only by using the dynamic form of the similimum that we can hope to eradicate the evil.²⁵

To the three remaining groups Hahnemann gave the term miasms²⁵. In aphorism 72 of Organon of medicine³⁷ Dr. Hahnemann describes that chronic diseases are caused by infection with a chronic miasm. The miasms always make themselves known by the character of their symptoms.²⁷ The true pathognomonic symptoms of a given case are those that cover the existing active miasm. In this way our therapeutic grouping becomes a miasmatic one and not a pathological one.

We are able to detect by some sign, symptom and all pervading conditions that there is a characteristic difference in each individual case that gives it its individuality, causing it to differ from all other cases.²⁴

According to **H. A. Robert**, dull, heavy yet lancinating headache; persistently constant at the base of the brain on one side and Destruction of tissues (bones) are syphilitic manifestations.

Inflammatory rheumatism, inflammation of soft tissues and muscles and overgrowth of tissues are sycotic. There are tearing pains in the joints, which are worse during rest, worse during cold damp weather, better moving or stretching, better dry weather. There are pains in the small joints with infiltrations and deposits. Stiffness, soreness and lameness are characteristic of this stigma. The troubles in the joints, where there are deposits of lime salts as in arthritis deformans, are sycotic.

In Hahnemann's chronic diseases²⁶, it is mentioned that the swellings of the bones and the curvature of the spine, and many other softenings and deformities of the bones, both at an early and at a more advanced age, are caused by the psora.

Predisposition to strains, even from carrying or lifting a slight weight, often caused even by stretching upward and reaching out the arms from objects which are hung high (so also a multitude of complaints resulting from a moderate stretching of the muscles: headache, nausea, prostration, tensive pain in the muscles of the neck and back, etc.), disposition to crack, strain or wrench one joint or another, cracking of one or more joints on moving, lancinating, cutting, painful stiffness of the nape of the neck, of the small of the back, joints, painful on motion, crawling or also prickling formication (as from the limbs going to sleep) in the arms, in the legs and in other parts (even in the fingertips) are all manifestations of latent psora.

According to **J. H. Allen**²⁴ shooting or tearing pain in the muscle and joints. and stiffness and soreness especially lameness are sycotic. In the arthritis of sycosis or rheumatism, we have an infiltration of inflammatory deposits, but it readily absorbs and is never formative as we find in syphilis and tubercular changes, which are permanent unless dissipated by treatment.

Neuralgic pain may be usually relieved by quiet, rest and warmth, worse by motion is psoric.

According to **S.K. Banerjee**²⁸ various types of rheumatism and neuralgic pain may be usually relieved by quiet, rest and warmth, worse by motion are psoric.

Sycotic symptoms include joints and connective tissues affection, concretion due to rheumatic affection, stiffness and soreness especially lameness and stitching, pulsating and wandering pains.

Syphilis affects the bony structure which may be changed and causes bone pain.

According to **P.N. Banerjee**,²⁷ long-lasting pain in the muscle, bone and nerve on the slightest injury and various kinds of sounds like gliding of bones are coming under psora. Rheumatism is a sycotic manifestation. Severe pain in bones and degeneration of parts are syphilitic.

Phyllis speight²⁹ noted in his writings that neuralgic pains either psoric or pseudo-psoric usually better by quiet, rest and warmth. Numbness of extremities with tingling sensation is also psoric. Stiffness and soreness especially, lameness is very characteristic of sycosis.

Dr. Harimohan choudhry³⁰ in his book 'Indications of miasm', mentioned that cracking of one or more joints on moving, predisposition to sprains, even from carrying or lifting a slight weight are symptoms of latent psora. Psoric neuralgic pains are usually better by quiet rest and warmth and worse motion. Another psoric symptom is hot hands with burning sensation in palms. Bone pains indicate syphilis and joint pains is the indication of sycosis.

It is a fundamental rule in the treatment of chronic diseases to let the action of the remedy selected in a mode homoeopathically appropriate to the cases of disease which has been carefully

investigated as to its symptoms come to an undisturbed conclusion, so long as it visibly advances a cure and while improvement still perceptibly progresses chronic disease.

In treating the combined stigmata, the most outstanding must be treated first, since we base our method of treatment upon symptoms similarity, and where psora is present, psora will be the most outstanding in the symptom totality in the earlier manifestations. This manifestation must be treated first; then after that is eradicated or considerably lessened, the next most potent dyscrasia, as it expresses itself in the symptomatology, must be treated, until this, too, is eradicated.²⁵

RUBRICS FOR CERVICAL SPONDYLITIS

Phatak -⁶⁰

1. Neck, spondylitis - ph-ac
2. spondylitis, cervical -ph-ac

Murphy⁵⁷ - Diseases

Spondylitis, neck - ph-ac

Murphy - Diseases

Torticollis, spondylitis suboccipital is, from - asaf, mez, nat-m, phos, sil, sulph

Murphy - Neck

Inflammation, neck region spondylitis - ph-ac, *rhus-t*

Complete repertory⁵⁸ - Back

Spondylitis cervical - ph-ac

Boericke³¹ - Locomotor

Nape, of neck, pains, in general

ACON, *aesc*, *am-c*, **BELL**, *chin-ar*, **CIMX**, *coloc*, *ferr-pic*, **GELS**, *graph*, *hyper*, *jug-c*, *lach*, *lyc*, *nat-s*, *par*, *verat*, *vib*, *fel*, *zinc-val*, *x-ray*

Boericke - Locomotor

Nape, of neck, pains, rheumatic

acon, **BRY**, *calc-p*, *caust*, **CIMX**, *colch*, **DULC**, **GUAI**, *iod*, *kali-i*, **LACHN**, *petr*, *puls*, *rado*, *rhod*, **RHUS-T**, *sang*, *stel*, **STICT**

Neck, cracking of cervical vertebrae, on motion

aloe, **COCC**, **NAT-C**, *nicc*, *ol-an*, *thuj*

Kent's repertory⁵⁹

Back - cracking - Cervical region

Two mark medicines: *agar. chel.*; *cocc ,nat-c ,nicc ,petr ,sulph*

Back - pain - Cervical region

3 mark medicines

ars., bell. ,caust., cic. ,gels., graph., lac-c., par., ph-ac.,rhod.,

2 mark medicines

Acon. aesc. aeth. agar.alum.; am-c.; anac.; apis; ars-i.; asar.;atro.; bamb-a.; bry.; calc.; calc-p.;camph.; carb-v.;chel.;chin.; chinin-s.;cocc.;cinnb.; coloc.; con.; daph.; dros.; dulc.; ferr-p.; fl-ac.; form.; glon.; guaj.;hell.; hep.; hydrog.; ign.; ip.; kali-ar.; kali-bi.; kali-p.; kalm.; lach.; lyc.; lyss.; mag-p.; med.; merc.; mez.; nat-s.; nux-m.; phos.; phyt.;puls.; ran-b.; sang.; sil.;tab.; zinc.;

1 mark medicines

Abrot.; ail.; ail.; all-c.; all-s.; alum-sil.; alumn.; am-m.; ambr.; ang.; ant-c.; aq-mar.; arg-met.; arizon-.; arn.; ars-s-f.; arum-t.; aur-m-n.; bar-c.; bar-s.; berb.; borx.; buth-a.; cact.; calc-f.; calc-f.; calc-s.; calc-sil.; cann-i.; cann-s.; canth.; carb-ac.; carb-an.; carbn-s. card-m.; caustcench.; chinin-ar.; cimic.; cimic.; clem.; cloth.; coc-c.;cod.; colch.; colum-p.; cortico.; crat.; crot-c.; crot-h.; cund.; cupr.; cupr.; cupr-ar.; cur.; cycl.;cystein-l.; cyt-l.; dendr-pol.; dig.; dios.; dol.; dream-p.; echi.; eup-per.; ferr.; ferr-ar.; gamb.; grat.; ham.; kali-c.; kalicy.; kali-n.; kali-p.; kali-s.; kali-sil.; kalm.; kola; lac-c. lachn.; laur.; led.; meph.; nat-m.; naja; nux-v.; ox-ac.; petr.; pic-ac.; pip-m.; plb.; podo.;psor.; rhus-t.; rumx.; ruta sabin.; sacch.;sal-al.; samb.; sep.; spig.; stann.; staph.; stram.; stry.;tarax.; tarent.; thuj. tub.; vario.; verat.;

Back - stiffness - Cervical region

3 mark medicines

Agar.;anac.; arg-met.;bar-c.; bell.; calc.; calc-f.; caust.; chel.;cic.;cimic.;euph.;hell.;ign.;ind.;kalic.;lach.;lachn.;lyc.;mag-c.;nit-ac.;nux-v.;rhus-t.;sil.;

2mark medicines

Aesc.;alum.; am-m.; ang.; ant-t.; ant-t.; apis;ars.; aur-m-n.; bamb-a.; bapt. brom.; bry.; calc-p.; canth.; carb-v.; cedr.; chin.; cocc.; coloc.; con.;2 dig.; dros.; dulc.; ferr.; fl-ac.; gels.; glon.; graph.; hep.;kali-chl.; kali-i.; kali-n.; kali-s.; lac-c. led.; lyss.; manc.; mang.;merc.; mez.;nat-c.; nat-m.; nat-s.; par.; petr.; phos.; phys.;phyt.; plat.; podo.; psor.; puls.; rhod.; rhus-v.; sang.; sep.; spong.; spig.; staph.; stry.; sulph.;syph.; tab.; tarent.; thuj.; zinc.;

Extremities - pain - Upper limbs – neuralgic

2 mark medicines

Acon.;crot-t.;ferr.;rhus-t.;staph.;

1 mark medicines

Aesc.;arn.;ars.;calc.;croth.;crott.;graph.;hyper.;ign.indg.;iod.;lyc.;mez.;par.;phos.;ran-b.;sep.;sulph.;ter.;verat.

Therapeutics of cervical spondylosis according to the views of different authors

‘THE HOMOEOPATHIC DOMESTIC PHYSICIAN’⁶² by **Constantine Hering** mentioned that, if lifting or carrying heavy loads or any sudden exertion produces pain, give Rhus tox. Bryonia is indicated when pain is < on any motion. If both these drugs do not relieve entirely, try Sulphur. If headache ensues and Rhus tox will not remove it, then give Calcarea carb.

‘DICTIONARY OF DOMESTIC MEDICINE AND HOMOEOPATHIC TREATMENT WITH A SPECIAL SECTION ON DISEASES OF INFANTS’⁴⁹ by Clarke noted that ,rheumatic affections of muscles of neck: sudden turn of head will sometimes seems to cause it attended with pain on every movement. If this condition is persisting it may depend on some disorder of the spinal nerves. The application of heat is the best local remedy. Medicines (repeat every hour or two until relieved).Aconite 3: Pain with distinct chill, peevish restless patient, Bryonia 3: Affected part painful to touch, least motion causes great pain. Actea racemosa 3: Rheumatic pain and stiffness in muscles of back and neck. Pulsatilla 3: Pain better out of doors, worse indoors.

‘**LILIETHAL THERAPEUTICS**’³⁶ by Samuel Lilienthal mentions the following drugs for neck pain due to spinal irritation

Aconite, Aethusa cyn, Arnica, Baryta carb, Belladonna, Bryonia, Calcarea carb, Calcarea phos, Causticum, Cereus bonplandii, Chelidonium, Chininum sulph, Cimicifuga, Cocculus, Colchicum, Colocynthis, Lachesis, Lachnanthes, Ledum, Lycopodium, Magnesia mur, Mercurius, Natrum ars, Natrum carb, Nux vomica, Oxalic acid, Phosphorus, Phosphoric acid, Plumbum, Pulsatilla, Rhus tox, Stramonium and Sulphur.

For inflammation of vertebrae, Phos. for two weeks, and then alternating with Nat., mur. As soon as abscesses form, sil and Sulph., or Asa., Bell. Hep., Iod and Mez.

Acon, Bell., Bry., Calc., Caust., Chin., Ign., Kalm., Lach., Nux v., Puls., Spig.,and Sulph for cervico occipital neuralgia

The important medicines for cervico-brachial neuralgia are Acon., Arn., Ars., Fer., Graph., Ign., Lyc., Phos., Rhus, Sep., Staph., Sulph.,and Veratr.

According to ‘**CLARKE PRESCRIBER**’⁶³, in severe and recent attacks of neuralgia the medicines may be given at first every quarter of an hour until relief is obtained. Sudden pains, especially if right side of face and head, < least movement or touch, eating or speaking; < 4 to 8 p.m.then give Lyc. 30, 4 hourly.

Pain right side of face, and down right arm followed by numbness, slow pulse, then Kalm. 3, 2 hourly is indicated .In syphilitic, conditions Mez. 3, 2 hourly is mentioned. Rheumatic pain, < on the approach of storms, Rhod. 3, 2 hourly is noted. Pain in the bones with swellings, Phyt. 3, 2 hourly and pain, as if nerve were put on the stretch and suddenly let go, < in warm room, > in cold air, Puls. 3, 2 hourly is indicated.

Cramping pains associated with coldness and numbness, Plat. 6, 2 hourly is the remedy mentioned. Plantago major is very useful in almost all kinds of neuralgia as a local application. It may be painted on the part as often as necessary.

In neuritis, from exposure to dry cold, with intolerable pains in debilitated subjects, Ars. 3-30, 1-2 hourly and especially of the brachial nerves, with numbness of hands and arms, Xanth. -30, 1-2 hourly is mentioned. Symptoms < after sleep, Lach. 6, 4 hourly and pressing, cramping, tearing, throbbing pain from periphery to centre, often with red streaks, Bell. -30, 1 hourly may be considered.

Stiff-neck from a draught or chill; tearing in the nape, painful stiff-neck, worse on moving the neck; pain extending down the neck into the shoulder, Aco. 3, 1 hourly may be considered.

Head and neck retracted; rheumatic pain and stiffness in muscles of neck and back, sensitiveness of the spine, Act. r. 3, 1 hourly may be the remedy. Stiff-neck; neck stretched out, head bent back. Ant. t. 6, 2 hourly and stiff-neck, spraining on moving it, head twisted to one side, Lachnan. -30 2 hourly are to be noted. Painful stiff-neck, < by touch or motion then Bry. 3, 1 hourly and paralysis; pains and stiffness, Colch. 3, 1 hourly may be indicated. From damp and cold; pain in the nape as if after lying with the head in an uncomfortable position then Dulc. 3, 1 hourly may be considered. From dry cold, the pain < on the approach of stormy weather, then, Rhod. 3, 1 hourly. Pain and stiffness in the right side, Chel. 1, 1 hourly [Locally the part may be ironed with a hot flat iron, a piece of flannel being placed over the part affected.]

In '**BERNETT COLLECTED WRITINGS**'⁴⁸ he made a comment about neuralgia is that, if there is anything earth-life of ours that is hard to bear, surely it is neuralgia. And if there is anything in this world that can cure does not mean relieve, but cure, really cure neuralgia, that thing is homoeopathy.

Another informative quoting from the above said book is as follows,

'I want also to teach that neuralgia is not only, as a rule, radically curable by properly chosen remedies, but that the curing of the neuralgia by the right remedy (or remedies) is a cure of the internal cause of said neuralgia, and there fore a cure of the organismic self of the individual. There is no such a thing as a panacea or specific for all sorts of neuralgia, or, in other words, every neuralgia has pathology of its own. Aconite is most frequently indicated when the pain comes from a cold, rheumatism, or active congestion. Acidum hippuricum however, runs it very close, and quite outsets it when the neuralgia is primarily arthritic. I am not sure but Sulphur comes next in rank to Aconite, and Dr. Cooper praises it very warmly in ague and malarial neuralgia. It is Hahnemann's great antipsoric, and is also as such very frequently indicated. A very reliable indication for Sulphur is, further, where the pain comes from the suppression of a psoric or diathetic eruption. This anti-neuralgic action of Nat. mur. had the great advantage of being permanently curative, as the pain did not return, and patient herself continued otherwise well.'

Dr:G.H.G.Jahr in his book 'THERAPEUTIC GUIDE, THE MOST IMPORTANT RESULT OF MORE THAN 40 YEARS OF PRACTICE'³⁸ mentions drugs like Acon. ,Bry., Bell., Kali carb. and Lach for spinal irritation attended with painful rigidity of nape of neck. If the neck at the same time twisted ,he suggested Caust, Calc and Ars alb.

'**QUICK BED SIDE PRESCRIBER**'⁴⁶ proposes Lachn 200 for spondylitis ie, inflammation of vertebra .Mag phos 30X, Kali mur 30X, and Calc fl 30X are also important.

Dr. Richard Hughes in his book 'A MANUAL OF PHARMACODYNAMICS'⁴⁷ suggested Aconite, Actea racemosa, Bry, Colch and Dulc for stiffneck.

In the book 'BEST OF BURNETT'⁴⁸ compiled by Dr. H. L. Chidkara, it is written as Phos and Ferr are important for neuralgia.

It is mentioned in the book 'A DICTIONARY OF DOMESTIC MEDICINE AND HOMOEOPATHIC TREATMENT WITH A SPECIAL SECTION ON DISEASES OF INFANTS'⁴⁹ that application of the heat is the best local remedy for wry neck. Aconite, Bry, and Puls are other effective remedies.

Aconite, Bell, Chamomilla, Kalm, Colocynth, Merc, Spig, Ars, Bry, Caust, Lyco, Mezerium, Nux vom, Phos and Puls are mentioned in the book 'THE OUTLINE OF MATERIA MEDICA'⁵⁰ by Henry Buck for neuralgia.

'A SYNOPTIC KEY OF THE MATERIA MEDICA'⁵¹ by **C. M. Boger** tells that Cimicifuga, Gels, Calc carb, Sep, Puls and Sil are good for neck ache. Bell and Rhus tox for wry neck.

'HOMOEOPATHIC PRACTICAL MATERIA MEDICA OF 332 REMEDIES'⁵² by **J. C. Ghosal** said that Aconite, Bell, Chamomilla, Kalm, Colocynth, Merc, Spig, Ars, Bry, Caust, Lyco, Mezerium, Nux vom, Phos, Puls, Mag phos, Plat, Zinc, and China are important for neuralgia.

FARRINGTON'S 'LECTURES ON CLINICAL MATERIA MEDICA'³⁵ mentions Phos, Sil, Sulph, Gettysburg water and Phos. Ac. for vertebral carries.

'KNOWLEDGE OF THE PHYSICIAN'⁵³ by **Richard Hughes** considered Aconite, Kalm, Bry, Propylamine, Rhus tox, Dulc, Rhodo, Spig, Actea, Ledum, Merc, Phyto, and Sulph. for neck pain.

Drugs like Acon, Bry, Cepa, Hyper, Kalm, Paris, Phyto, Rhus tox, Merc, and Tereb. are mentioned for brachial neuralgia in the book 'REALISTIC MATERIA MEDICA WITH THERAPEUTIC HINTS'⁵⁴.

'KANSAL'S PRACTICE OF MEDICINE WITH HOMOEOPATHIC THERAPEUTICS'⁵⁵ noted, Aconite, Bell, Merc, Bry, Puls, Dulc, Caust, Lacn, Guaiac, and Sticta for pain and stiffness of neck. Aconite, Bry, Kalm, Rhus tox, Spig, Sang, and Nux vom. for cervico brachial neuralgia.

'HAND BOOK OF HOMOEOPATHIC PRACTICE'⁵⁶ by **C. G. Publmann** described the following suggestions, i.e. After injuries or over exertion as well as when pricking pain are

present Arnica 3X, and in recent cases successively with Aconite 3X. After chill Rhus tox 3 X, if associated with symptoms of paralysis then, Caust 3X for brachial neuralgia.

For neuralgia of the brachial plexus affecting the shoulder joint, upper arms etc, Bell, Thuja, Calc, Lyco and Verat alb are so far proved the most efficient remedies.

For arthritic affections most efficient remedies are Caust, Calc, Lyco, Sulphur, Thuja and Anti crude. In the chapter diseases of the bones, he stated that whenever bone diseases plainly originate in the scrofulous miasm, he commenced the treatment, whatever the form of these diseases may be with Sulph, Calc, Lyco, and Silicea. Silicea is one of our best bone remedies. Phos, Phosphoric acid and Staph are administered with excellent effect. In syphilitic bone diseases Merc, Aur, Phos, Phos acid, Kali iod and Fluoric acid are indicated.

C. Cowperthwaite in his book, 'A TEXT BOOK OF MATERIA MEDICA AND THERAPEUTICS, CHARACTERISTIC, ANALYTICAL AND COMPARITIVE'³⁹, he mentions drugs like Asafoetida, Aurum, Calc carb, Calc fluor, Calc phos, Fluoric acid, Kali iod, Nitric acid and Phos., Agaricus, Hypericum, Phos, Nat mur, Puls, Silicea, Sul, Kali carb, Cocculus, Gels, Arnica etc for spinal irritation.

OTTO LESSER – TEXT BOOK OF MATERIA MEDICA⁴⁰, suggested plumb. met. for spinal cord disease with nerve involvement and Phos for progressive spinal paralysis.

Arg met, Ars alb, Caust, Mag carb, Mag phos, Plumb met and Zinc met for peripheral nerve affections.

Oxalic acid, Ammon. mur, Ars, Caust, Hepar sul, Kali bich, Kali carb, Mag carb, and Mag phos, Merc, Nat mur, Phos, Sulph and Zinc met for neuralgia.

'**PRINCIPLES OF PRESCRIBING**'⁴¹ by Dr. K.N.Mathur.described Curare 4X- 200C for pseudo – hypertrophic paralysis with weakness of hands and fingers of pianists, and abolished or diminished reflexes and Gels 6C to 30C for affections of last 5 cervical nerves.

'**LESSER WRITINGS WITH THERAPEUTIC HINTS**'⁴² by **E.A. Farrington** mentions the following medicines,

Pain, neuralgia, bone and periosteal pains Rhus venera, for tearing from each temple, back to occiput and down neck to shoulders, Silicea for occiput forwards. Aconite, Cimicifuga, Bell, Bryonia, Gels, Mag mur, Mag phos, Naja, Manganum, Nat mur, Phos, Plantago, Prunus spinosa and Juglans cathartica for neuralgic pains. Glonoine, Agar, Arg.met, Graph, Kali nitr, Spigelia for stiffness and rigidity. For pain extending from neck to occiput,suggested remedies are Nat.mur, Kali carb, Kalmia, Dioscorea, Dulc, Ferr, and Glonoine.

‘A BOOK ON ‘RHEUMATIC DISEASES’⁶⁴ by **Dr.S.L.Kumar** has given importance to medicines like Arg. Met, Bell, Cimicifuga, Lachesis, Nat.sulph ,and Radium for cervical spondylitis.

‘PRACTICAL HOMOEOPATHIC THERAPEUTICS’⁴³, by **W.A. Dewey** has given importance to the following medicines.

Colchicum, Ledum, Amm phos, Anti crud, Lyco, Picric acid, and Rhododendron for arthritis. Phos, Calc carb,and Silicea for syphilitic carries of vertebrae. Phosphoric acid for carries of spine.

Aconite, Chamommilla, Colocynth, Nux vom, Stann met, Rhus tox, Spigelia, Actea, Bell, Ars alb, Nat mur, Sulphur, Kalmia, Mag phos, Puls, Calc for neuralgia.

A psoric or arthritic soil will demand as a systemic remedy, an anti-psoric such as sulphur or lycopodium and if of syphilitic origin, high dilutions of syphilinum will clear the field.

Actea, Sulphur, Bell, Gels, Nat mur, Puls, Agar, Zinc, Phos, Cocculus, Nux vom, Oxalic acid, Kali carb etc for spinal affections.

‘**RAUE’S PATHOLOGY**’⁴⁴ has given the following suggestions such as, spinal irritation if located in the cervical region causes head and chest symptoms; remedies like Actea, Asaf, Bell, Cocculus, Hyper, Nat mur, Piper math, Rhus tox, Secale, Tarent are important.

For cervico – brachial neuralgia remedies like Acon, Arn, Ars, China, Ferr, Graph, Ign, Lyco, Phos, Rhus tox, Sepia, Staph, Sulph and Verat.are important.

‘POINTERS TO THE COMMON REMEDIES’³² by **M.L.Tyler** mentions remedies like Aconite, Bry, Nux, Caust, Rhus tox, Rhodo, Dulc, Ars, Bell, Salicylic acid, Sticta, Lac can, Ferr phos, Kali bich, Puls, Ledum, Medorr, Eupat, Arn, Gels, Hepar, Actea,, Kalm, China, Drosera, and Thuja. for acute rheumatism more the adult type.

‘HAND BOOK OF MATERIA MEDICA AND THERAPEUTICS OF HOMOEOPATHY’ by **Narasimhamoorthy**⁴⁵described the following remedies for arthritis,

Arthritis – Rhus tox, Bry, Puls, Ledum, Caust, Sul, Calc carb, Lyco, Merc, Thuja, Guaicum, Phyto, Radium, Nat phos, Ferr phos, Kali mur, Mag phos, Calc phos, Silicea and Nat sulph.

‘QUICK BED SIDE PRESCRIBER WITH NOTES ON CLINICAL RELATIONSHIPS OF REMEDIES AND HOMOEOPATHY IN SURGERY’ by J.N.Singhal⁴⁶ has given the following suggestions,

Neck stiff, due to draught or chill, painful worse on moving the neck, then Aconite is the medicine suggested. For neuralgia the medicines are Spigelia, Mag phos, Colocynth, Gels, and Sanguinaria and for stiff neck he mentions Lachnanthes, Dulc, Acon, and Bell

Indications of medicines

Aconitum nap

Sudden onset of complaints, after exposure to cold dry air. Pains with formication and numbness. Rheumatic inflammation of joints, pains intolerable. Intense bright red swelling of part. Sensitive to contact. worse at night.³²

Sulphur has a strong relation to Aconite. In many of the old chronic cases where Sulphur would be used in strong vigorous constitutions Aconite will be suitable for a sudden attack and Sulphur for the chronic.³³ Paralytic weakness of the arm and hand especially in writing.³⁴

Actea racemosa

Especially useful in rheumatic, nervous subjects with ovarian irritation, uterine cramps and heavy limbs. Worse; morning, cold (except headache), during menses; the more profuse the flow, the greater the suffering. Better warmth, eating³¹

Sensitiveness of the spine; especially in the cervical and upper dorsal regions. Pains down arms with numbness as if a nerve compressed. Affects the left side most.³⁴

Belladonna

It is one of our best remedies both in acute and chronic Rheumatism. Rheumatic stiff-neck caused by cutting the hairs, getting the head wet or sitting with the head exposed to a draft.³⁵

We have in the rheumatism the heat redness and burning running through, with the same sensitiveness of the whole patient and a sensitiveness of the joints to the jar of the bed.³³

Bryonia

The pains are aggravated from the slightest motion and are relieved by remaining perfectly quiet. The affected parts are very hot and dark-red or pale-red. The tongue is either uniformly white or more characteristically, dry and white down the centre. The bowels are usually constipated.

³⁵ Hot patient. Thirst for cold drinks.

Calcarea Carb

Rheumatic affections caused by working in water; rheumatism of the back and shoulders, after the failure of Rhus Tox. Rheumatism of the finger-joints.³⁵ Chilly remedy

Calcarea Phos

It is useful in Rheumatism appearing in any change of weather or on exposure to dampness.³⁵

Numbness and crawling are characteristic sensations, and tendency to perspiration and glandular enlargement are symptoms it shares with the carbonate.³¹

Causticum

It is called for Rheumatism especially, when the joints are stiff and the tendons shortened, drawing the limbs out of shape. Rheumatic pains attack particularly the articulation of the jaw; they are < from cold and are > by warmth. It is also useful in Rheumatism of the right deltoid³⁵

Dulcamara

It is useful in Rheumatism, made worse by sudden changes in the weather³⁵.The rheumatic troubles induced by damp cold are aggravated by every cold change and somewhat relieved by moving about. Stiff neck. Rheumatism alternates with diarrhea.³¹

Ferrum met

It is useful in Muscular Rheumatism, when the pains are < at night, and > by moving about slowly. It especially affects the left deltoid muscle³⁵.Best adapted to young weakly persons, anaemic and chlorotic, with pseudo-plethora. Worse; while sweating; while sitting still; after cold washing and overheating; midnight aggravation.³¹

Gelsemium

It may be useful in Gonorrhoeal Rheumatism³⁵.Centers its action upon the nervous system, causing various degrees of motor paralysis. Writer's cramp. Worse; damp weather, fog, before a thunderstorm, emotion, or excitement, bad news, tobacco-smoking, when thinking of his ailments; at 10 am. Better ; bending forward, by profuse urination, open air, continued motion, stimulants .Chill running up and down the back. Thirstless remedy³¹

Kalmia Latifolia

Pains shift rapidly. Neuralgia; pains shoot downwards, with numbness. Deltoid rheumatism especially right. Worse ; leaning forward; looking down; motion, open air³¹. Rheumatism when it affects the chest and is especially useful when it shifts from the joints to the heart, particularly after external applications to the joints, of substances not homoeopathic to the case. The pulse is slow³⁵

Lac Caninum

It is indicated when the pains are <from warmth .³⁵The keynote symptom is, erratic pains, alternating sides. Worse ; morning of one day and in the evening of next. Better ; cold, cold drinks³¹.

Lachesis.

Cannot bear anything tight anywhere. Lachesis sleeps into aggravation ;ailments that come on during sleep. Worse ,left side, in the spring, warm bath, pressure or constriction, hot drinks; Closing eyes. Better ; appearance of discharges, warm applications.³¹

Lycopodium

It is useful when the urine contains a lithic acid deposit. Associated with this are : The arm feels heavy and weak, but when he tries to use them finds that he can work quite well with them. The right side is usually the seat of the disease. The pains are < from beginning to move and > from continued motion . Hence aggravation in the afternoon from 4 to 8 pm ³⁵

Medorrhinum.

A powerful and deep-acting medicine , often indicated for chronic ailments due to suppressed gonorrhoea. Chronic rheumatism. Burning of hands and feet. Restless; better, clutching hands. Wants to be fanned all the time. Chills up and down back; coldness of legs, hands, and forearms. Sleeps in knee-chest position. Worse ; when thinking of ailment, from daylight to sunset, heat, inland. Better ; at the seashore, lying on stomach, damp weather. ³¹

Nux Vomica

It is useful when the Rheumatism involves the larger joints and muscles. The symptoms are almost always < towards morning. ³⁵ Cervico-brachial neuralgia; worse, touch, cold. Must sit up in order to turn in bed. Sitting is painful. ³¹

Phosphorus

It is particularly indicated when endocarditis or myocarditis occurs during the course of acute inflammatory rheumatism or pneumonia. Weakness and trembling, from every exertion. Can lie only on right side. Worse ; touch; physical or mental exertion; twilight; warm food or drink; change of weather, from getting wet in hot weather; evening; lying on left or painful side; during a thunder-storm; ascending stairs. Better ; in dark, lying on right side, cold food; cold; open air; washing with cold water; sleep. ³¹

Phosphoric acid

The common acid "debility" is very marked in this remedy, producing a nervous exhaustion. Boring pain between scapulae. Better ; from keeping warm. Worse ; exertion, from being talked to; loss of vital fluids; sexual excesses; Everything impeding circulation causes aggravation of symptoms. ³¹

Phytolacca.

Shooting pain in right shoulder, with stiffness and inability to raise arm. Rheumatism pains; worse in morning. Pains fly like electric shocks, shooting, lancinating, shifting rapidly. Worse ; sensitive to electric changes; Effects of a wetting, when it rains, exposure to damp, cold weather, rest. ³¹

Pulsatilla

The tearing pains force the patient to move the affected parts. Erratic pain, now here and now there , pressure relieves these pains; they are usually < from warmth, in the evening and on beginning to move, and are > by cold and from slow motion. Dry mouth with no thirst. ³⁵

Rhus Tox

Relief of symptoms by continued motion and aggravation on beginning to move is present there is aggravation during damp weather or from dwelling in damp places. It is especially suitable for Rheumatism after exposure to cold or wet, particularly when one is over-heated or perspiring. Other notable symptoms are: restlessness, all the time. The prominent projection of bones are sore to the touch, as for example the cheek-bones. Rheumatism of the muscles of the back and shoulders.³⁵

Silicea

It is useful in Chronic Rheumatism. It is one of the remedies on which to depend in treating hereditary rheumatism. The pains are predominantly in the shoulders and in the joints and are < at night and when uncovering³⁵ Great sensitiveness to taking cold. Pain begins at occiput, and spreads over head and settles over eyes. Worse; new moon, in morning, from washing, during menses, uncovering, lying down, damp, lying on, left side, cold. Better; warmth, wrapping up head, summer; in wet or humid weather.³¹

Sulphur

It is indicated both in the acute and chronic rheumatism, particularly the latter, when the inflammatory swellings ascend, i.e., they begin in the feet and extend up the body. The pains are < in bed and at night. Burning in the feet, which the patient uncovers.³⁵

Magnesia phos

Neuralgia every night, well during the day. Acute pains, coming periodically, excruciating, spasmodic, extending to the ends of nerve-fibres. especially right side; crampy, shooting, darting pains, aggravation by touch and after going to bed; also neuralgia of stomach and abdomen.> warmth, pressure.³⁶

Natrum mur

Ciliary neuralgia from sunrise to sunset, aggravation about noon; darting, shooting orbital neuralgia with flow of saliva or involuntary tears; face ache with constipation, Aggravation mornings, from reading, writing and talking. Amelioration at the seaside.³⁶

Terebinthina

Neuralgia brachialis and subscapularis, supraorbitalis; mostly evenings and during the night in bed till morning; Neuralgic headache; motion, difficult, at it starts or increases the pain ; sometimes caused by sudden check of perspiration.³⁶

Formica rufa (myrmexine).

An arthritic medicine. Gout and articular rheumatism; pains worse, motion; better, pressure. Right side most affected. Muscles feel strained and torn from their attachment. Rheumatism comes on with suddenness and restlessness. Worse ; cold and cold washing, dampness, before a snowstorm. Better ; warmth, pressure, rubbing; combing hair³¹.

Lachnanthes.

A remedy for torticollis, rheumatic symptoms about neck. Right-sided pain, extending down to jaw; head feels enlarged; worse, least noise.³¹ Sensation as if a piece of ice was lying on back between shoulders, followed by chill, with gooseflesh all over.³⁶

Paris quadrifolia.

Sense of weight and weariness in nape of neck and across shoulders. Neuralgia, beginning in left intercostal region, and extending into left arm. Arm becomes stiff, fingers clenched. Fingers often feel numb. Numbness of upper limbs³¹.

Picricum acidum.

Neurasthenia. Occipital pain; worse, slightest mental exertion. Vertigo and noises in ear. Burning along spine. Cannot get warm. .Worse ; least exertion, especially mental, after sleep, wet weather; A summer or hot weather remedy; patient is worse then. Better ; from cold air, cold water, tight pressure.³¹

Angustura

Sensation of tremulousness in muscles of neck; pain in cervical vertebrae, as if dislocated, when lifting the arm; drawing stiff feeling in the morning in bed and in afternoon, with stitches extending deep into chest, during motion³⁶

Bellis Perennis

This may be taken as a keynote: "effects of cold or iced drinks when heated"; rheumatism from this cause. Near and remote effects of blows, falls, accidents (trauma). "waking up too early in the morning and cannot get to sleep again" is a leading indication for its use.³⁴

Cereus Bonplandii

Tenderness on pressure along the spines of all the cervical and upper dorsal vertebrae; pain in cardiac region, with tenderness over left ribs just below the heart.³⁶

Pimpinello - (Bibernell).-

Respiratory mucus membrane sensitive to draughts, pain and coldness in occiput and nape. Whole body weak; heavy head and drowsiness; lumbago and stiff neck; pain from nape to shoulder; chilliness.³¹

MATERIALS AND METHODS

The present study was carried out at Govt. Homoeopathic Medical College, Calicut from June 2004 to September 2005

Materials

The materials for this study were selected from the patients who attended the outpatient department of Materia Medica of Govt. Homoeopathic Medical College, Calicut. Patients belonging to the age group 30-70 were included in the study. Both sexes and patients of all socioeconomic classes were considered.

Methods

All cases among the prescribed age group with the clinical features fitting to cervical radiculopathy were taken up for the study and the diagnosis was confirmed on the basis of positive X-ray findings visualized in antero posterior and lateral view of X- ray cervical spine.

Systemic examination was done in all cases to exclude possibility of other diseases. Detailed history was taken in each case with special reference to past history, family history, occupational history, physical generals and mental generals.

In each case selection of medicines were based on the data such as aetiological factors, mental generals, physical generals, concomitants, characteristic particulars, repertorial approach and clinical indications from different authorities.

In all cases selection of potencies and repetition of medicines were done according to the Homoeopathic principles.

In between the period of medication all patients were kept under blank tablet continuously. Out of 30 cases selected there were 9 dropouts and a total of 21 subjects completed the study.

Research tools and technique.

Cervical radiculopathy assessment tool was developed after literature review and in consultation with experts. Six major areas were identified as important parameters

1. Pain : No tenderness -0
 Patient complain of pain -1
 Patient complains of pain and winces -2
2. Stiffness : No stiffness -0
 Morning stiffness -1
 Stiffness occurring later in the day-2
3. Numbness : Absent -0
 Moderate -1
 Severe -2
4. Cracking on movement : absent -0
 Present -1
5. Movements of neck : all movements possible -0
 Restricted movements -1
 Movement impossible-2
6. Associated symptoms : no associated symptoms-0
 One associated symptom-1
 More than one associated symptoms-2

Follow up

All patients were reviewed on a fortnightly basis, to assess the subjective and objective improvement. Each case was followed up for a minimum of 6 months from the commencement of the treatment.

Diet and regimen

All patients were directed to continue the normal diet. They were also directed to stop the use of other medicines prior to the start of this treatment.

Additional instructions

Practice neck exercise regularly, limiting occupational or recreational activities that place pressure on the head, neck, and shoulders.

Effectiveness

Effectiveness was assessed on the basis of clinical improvement, relief of symptoms and change in score taken before and after treatment.

Analysis

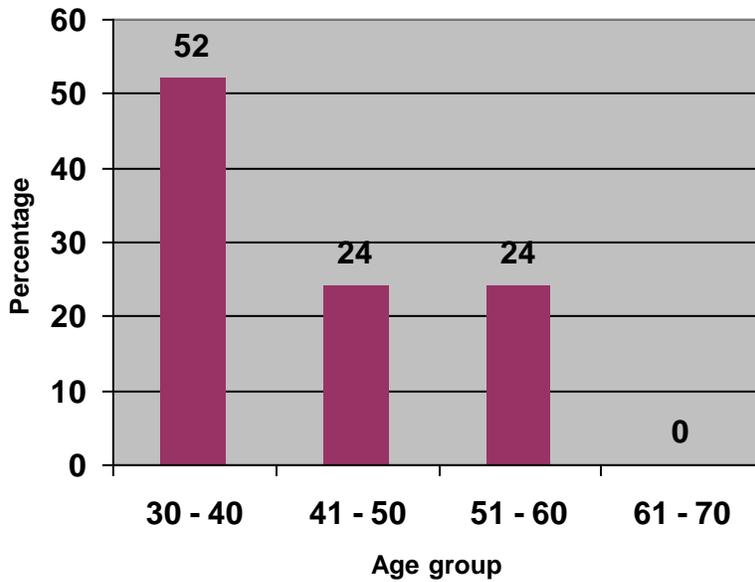
Various facts drawn out from this study were treated according to statistical principles

OBSERVATION AND DISCUSSION:

AGE WISE DISTRIBUTION OF PATIENTS

| Age group | No | % |
|-----------|----|----|
| 31-40 | 11 | 52 |
| 41-50 | 5 | 24 |
| 51-60 | 5 | 24 |
| 61-70 | 0 | 0 |

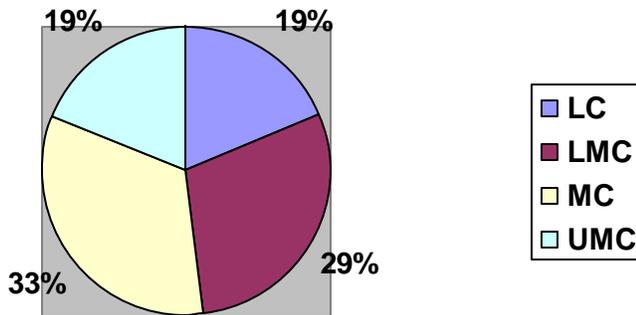
Out of the 21 patients studied 11 patients (52%) were between the age group 31-40. 5 patients (24%) were between 41-50. 5 patients (24%) were between 51-60.



DISTRIBUTION OF PATIENTS ACCORDING TO SOCIOECONOMIC STATUS

| Socioeconomic status | No | % |
|----------------------|----|----|
| Lower | 4 | 19 |
| Lower middle | 6 | 29 |
| Middle | 11 | 52 |
| Upper middle | 0 | 0 |

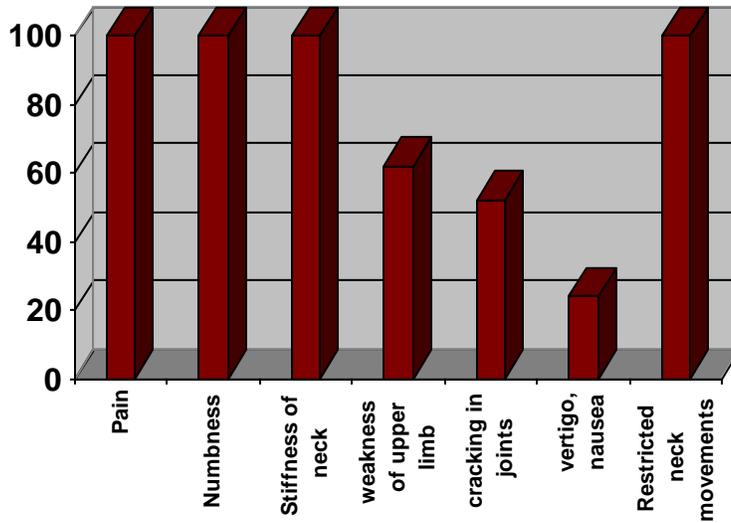
Out of the 21 patients studied 4 patients (19%) were under the low socioeconomic status. 6 patients (29%) belongs to lower middle class and 11 patients (52%) belongs to middle class.



DISTRIBUTION OF PATIENTS ACCORDING TO THE PRESENTING COMPLAINTS.

| Symptoms | no | % |
|---------------------------|----|-----|
| Pain | 21 | 100 |
| Numbness | 21 | 100 |
| Stiffness of neck | 21 | 100 |
| Weakness of upper limb | 13 | 62 |
| Cracking in joints | 11 | 52 |
| Vertigo, nausea | 5 | 24 |
| Restricted neck movements | 21 | 100 |

Out of the 21 patients studied all of them presented with pain , numbness, restricted neck movements and stiffness of neck. 13 patients (62%) had Weakness of upper limb and 11 patients (52%) had cracking in the inter vertebral joints on movement and 5 patients (24%) presented with nausea and vertigo.

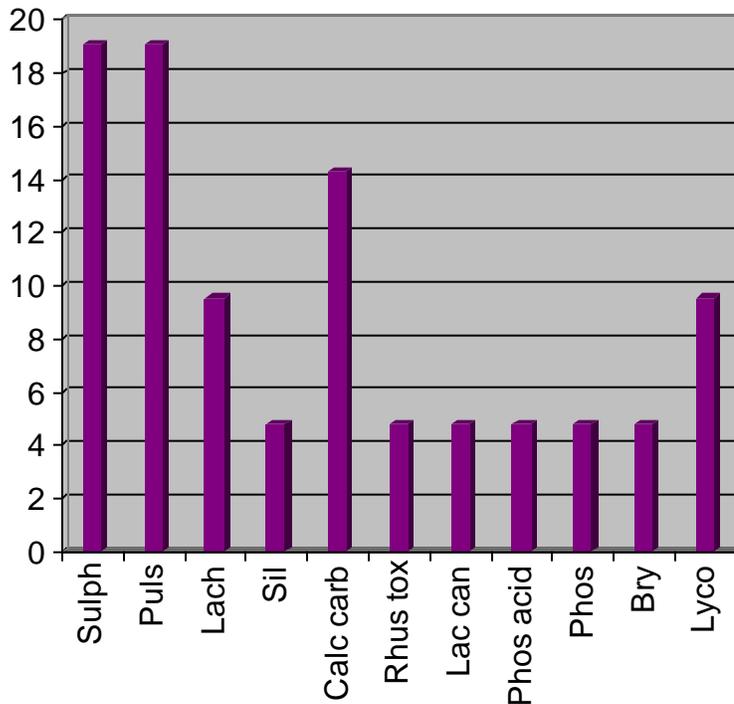


DISTRIBUTION OF MEDICINES USED IN THE STUDY

| Sl. No | Medicine | No. of patients | Percentage |
|--------|---------------|-----------------|------------|
| 1 | Sulphur | 4 | 19.04 |
| 2 | Pulsatilla | 4 | 19.04 |
| 3 | Lachesis | 2 | 9.52 |
| 4 | Silicea | 1 | 4.76 |
| 5 | Calcarea carb | 3 | 14.28 |
| 6 | Rhus tox | 1 | 4.76 |
| 7 | Lac caninum | 1 | 4.76 |
| 8 | Phosphoric ac | 1 | 4.76 |

| | | | |
|----|------------|---|------|
| 9 | Phosphorus | 1 | 4.76 |
| 10 | Bryonia | 1 | 4.76 |
| 11 | Lycopodium | 2 | 9.52 |

Sulphur and Pulsatilla was found effective in 4 (19.04%) cases each. Calcarea carb in 3 (14.28%), Lachesis and Lycopodium in 2 (9.52%) cases each, Silicea, Rhus tox, Lac caninum, Phosphoric acid, Phosphorus and Bryonia was found effective in 1 (4.76%) case each.



DISTRIBUTION OF MIASM IN CERVICAL SPONDYLOTIC RADICULOPATHY

| Sl.No | Miasm | Dominant first | Dominant second |
|-------|----------|----------------|-----------------|
| 1 | Psora | 18 | 3 |
| 2 | Syphilis | 3 | 17 |
| 3 | Sycosis | 0 | 1 |

Psora occupies as the first dominant miasm in 18 patients out of 21 underwent the study and as second dominant in 3 patients. Syphilis was the second predominant miasm in 17 patients and was the first dominant in 3 patients. Sycosis came as the second dominant miasm only in one patient.

EFFECTIVENESS OF VARIOUS POTENCIES

| Potency | No: of > / D | Percentage |
|---------|--------------|------------|
| 30 | 0 | 0 |

| | | |
|-----|----|----|
| 200 | 2 | 10 |
| 1M | 14 | 67 |
| 10M | 4 | 20 |

> - Amelioration of symptoms, D – Disappearance of symptoms

1M potency was found to be effective in 14 patients, as it ensured complete cure to 13 patients out of 21 patients and amelioration of pain in 1 patient. 10M was tried in 4 patients and it cured them completely. 200th potency was given in 2 patients with total relief. 30th potency was not found effective in this study.

Changes in clinical features after 6 months of treatment

| Sn. | Symptoms | * | > | % | < | % | S | % | D | % |
|-----|---------------------------|----|----|----|---|---|---|----|----|----|
| 1 | Pain | 21 | 7 | 33 | 0 | 0 | 0 | 0 | 14 | 67 |
| 2 | Numbness | 21 | 12 | 57 | 0 | 0 | 2 | 10 | 7 | 33 |
| 3 | Stiffness | 21 | 0 | 0 | 0 | 0 | 6 | 29 | 15 | 71 |
| 4 | Weakness | 13 | 0 | 0 | 0 | 0 | 1 | 8 | 12 | 92 |
| 5 | Vertigo, Nausea | 5 | 0 | 0 | 0 | 0 | 1 | 20 | 4 | 80 |
| 6 | Cracking in joints | 11 | 0 | 0 | 0 | 0 | 8 | 73 | 3 | 27 |
| 7 | Restricted neck movements | 21 | 0 | 0 | 0 | 0 | 2 | 10 | 19 | 90 |

* - Number of patients

> - Amelioration

< - Aggravation

S - No change

D – Disappearance

Out of 21 patients underwent this study, 7 (33%) Of them got amelioration of pain and 14(67%) of them were completely relieved of pain. There was amelioration of numbness in 12(57%) patients, 7(33%) of them were totally relieved of numbness and no change was noticed in 2 (12%) patients. Disappearance of stiffness of neck in 15 (71%) patients and no change for this symptom in 6 (29%) cases were noted. Out of 13 patients presented with weakness 12 (92%) of

them got complete cure and no change in one (8%) patient. There was disappearance of nausea and vertigo in 4 (80%) patients and no change in 1 (20%) patient among 5 presented with this symptom. Disappearance of cracking in joints was observed in 3 (27%) patients and no change in 8 (73%) patients out of 11 patients presented with the same. Restricted neck movement remains unchanged in 2 (10%) patients and all neck movements became possible in 19 (90%) patients out of 21, after treatment.

Effectiveness of treatment after 6months follow-up

| Sl.No | Before treatment | Mark | After treatment | Mark |
|-------|--------------------|------|--------------------|------|
| 1 | P2 S1 N2 M1 C1 AS1 | 8 | P0 S0 N1 M0 C1 AS0 | 2 |
| 2 | P2 S2 N2 M1 C1 AS2 | 10 | P1 S2 N2 M1 C1 AS2 | 9 |
| 3 | P1 S1 N2 M1 C1 AS2 | 8 | P0 S0 N1 M0 C1 AS0 | 2 |
| 4 | P2 S1 N2 M1 C1 AS1 | 8 | P1 S0 N0 M0 C1 AS0 | 2 |
| 5 | P2 S1 N2 M1 C0 AS0 | 6 | P0 S1 N0 M0 C0 AS0 | 1 |
| 6 | P2 S1 N2 M1 C0 AS1 | 7 | P0 S0 N1 M0 C0 AS0 | 1 |
| 7 | P1 S1 N2 M1 C1 AS1 | 7 | P0 S0 N1 M0 C1 AS0 | 2 |
| 8 | P2 S1 N2 M1 C0 AS1 | 7 | P1 S0 N0 M0 C0 AS0 | 1 |
| 9 | P2 S1 N2 M1 C1 AS0 | 7 | P0 S0 N0 M0 C0 AS0 | 0 |
| 10 | P2 S1 N2 M1 C1 AS0 | 7 | P1 S1 N2 M1 C1 AS0 | 6 |
| 11 | P2 S1 N2 M1 C0 AS0 | 6 | P1 S1 N1 M0 C0 AS0 | 3 |
| 12 | P2 S1 N2 M1 C0 AS0 | 6 | P0 S0 N1 M0 C0 AS0 | 1 |
| 13 | P2 S1 N2 M1 C1 AS0 | 7 | P0 S1 N0 M0 C1 AS0 | 2 |
| 14 | P1 S2 N2 M1 C1 AS2 | 9 | P0 S0 N1 M0 C1 AS0 | 2 |
| 15 | P2 S1 N1 M1 C0 AS0 | 5 | P0 S0 N1 M0 C0 AS0 | 1 |
| 16 | P1 S1 N2 M1 C1 AS2 | 8 | P0 S1 N1 M0 C0 AS0 | 2 |
| 17 | P1 S1 N2 M1 C0 AS1 | 6 | P0 S0 N1 M0 C1 AS0 | 2 |
| 18 | P2 S1 N2 M1 C0 AS0 | 6 | P1 S0 N1 M0 C0 AS0 | 2 |
| 19 | P2 S1 N2 M1 C0 AS1 | 7 | P1 S0 N0 M0 C0 AS0 | 1 |
| 20 | P2 S2 N2 M1 C1 AS2 | 10 | P0 S0 N1 M0 C1 AS0 | 2 |
| 21 | P2 S1 N2 M1 C0 AS1 | 7 | P0 S0 N0 M0 C0 AS0 | 0 |

P- pain , S – stiffness, N- numbness, M- movement, C- cracking in joint, AS- associated symptom

STATISTICAL ANALYSIS

The following marks were given to clinical features of cervical spondylotic radiculopathy for statistical analysis:

| SL.No | Clinical features | Marks |
|-------|------------------------------------------|-------|
| 1. | Patient complaints of pain (P1) | 1 |
| 2. | Patient complaints of pain & winces (P2) | 2 |

| | | |
|-----|-------------------------------------------|---|
| 3. | Morning stiffness (S1) | 1 |
| 4. | Stiffness occurring later in the day (S2) | 2 |
| 5. | Moderate numbness (N1) | 1 |
| 6. | Severe numbness (N2) | 2 |
| 7. | Cracking in joints (C1) | 1 |
| 8. | Restricted neck movements (M1) | 1 |
| 9. | Impossible movements (M2) | 2 |
| 10. | One associated symptom (AS1) | 1 |
| 11. | More than one associated symptom (AS2) | 2 |

Marks given for the change in clinical features after treatment

| SL.No | Clinical features | Marks |
|-------|--------------------------------------|-------|
| 1. | Reduction in pain | 1 |
| 2. | Disappearance of pain | 0 |
| 3. | Reduction in numbness | 1 |
| 4. | Disappearance of numbness | 0 |
| 5. | Reduction in stiffness | 1 |
| 6. | Disappearance of stiffness | 0 |
| 7. | Disappearance of cracking in joints | 0 |
| 8. | Restricted neck movements | 1 |
| 9. | All movements possible | 0 |
| 10. | One associated symptom | 1 |
| 11. | Disappearance of associated symptoms | 0 |

Tests of significance:-

- Questions to be answered. Is there any difference in the symptoms of the case before and after treatment?
- Null hypothesis H_0 : no difference in the symptoms of the case before and after treatment.

| x | y | $z=x-y$ | $z - \frac{\sum z}{n}$ | $(z - \frac{\sum z}{n})^2$ |
|----|---|---------|------------------------|----------------------------|
| 8 | 2 | 6 | -0.86 | 0.7396 |
| 10 | 9 | 1 | 4.14 | 17.1396 |
| 8 | 2 | 6 | -0.86 | 0.7396 |
| 8 | 2 | 6 | -0.86 | 0.7396 |
| 6 | 1 | 5 | 0.14 | 0.0196 |
| 7 | 1 | 6 | -0.86 | 0.7396 |
| 7 | 2 | 5 | 0.14 | 0.0196 |
| 7 | 1 | 6 | -0.86 | 0.7396 |
| 7 | 0 | 7 | -1.86 | 3.4596 |
| 7 | 6 | 1 | 4.14 | 17.1396 |

| | | | | |
|----|---|---|-------|--------|
| 6 | 3 | 3 | 2.14 | 4.5796 |
| 6 | 1 | 5 | 0.14 | 0.0196 |
| 7 | 2 | 5 | 0.14 | 0.0196 |
| 9 | 2 | 7 | -1.86 | 3.4596 |
| 5 | 1 | 4 | 1.14 | 1.2996 |
| 8 | 2 | 6 | -0.86 | 0.7396 |
| 6 | 2 | 4 | 1.14 | 1.2996 |
| 6 | 2 | 4 | 1.14 | 1.2996 |
| 7 | 1 | 6 | -0.86 | 0.7396 |
| 10 | 2 | 8 | -2.86 | 8.1796 |
| 7 | 0 | 7 | -1.86 | 3.4596 |

Test of significance determined by using paired t test.

$$\text{EQ } \bar{Z} = \frac{\sum Z}{n} = \frac{108}{21} = 5.14$$

d. The estimation of the population standard deviation is given by

$$S_z = \sqrt{\frac{\sum (Z_i - \bar{Z})^2}{n-1}} = \sqrt{\frac{66.5716}{20}} = \sqrt{3.32858} = 1.824$$

$$\text{Critical ratio 't'} = \frac{\bar{Z}}{S_z / \sqrt{n}} = \frac{5.14}{1.824 / \sqrt{21}} = \frac{5.14 \times \sqrt{21}}{1.824} = 12.91$$

Comparison with tabled t value:

This critical ratio, t, follows a distribution with (n-1) (21-1) degrees of freedom. The 5% level is 2.086 and 1% level is 2.845 for 20 degrees of freedom. The calculated value 12.91 is greater than the table value. Therefore the null hypothesis is rejected.

Inference

The efficacy of Homoeopathic medicines in the treatment of cervical radiculopathy due to cervical spondylosis is evident by the reduction in the score after 6 months of treatment. Therefore the treatment is effective.

SUMMARY AND CONCLUSION

In the present study 21 patients who attended OPD of Materia Medica of Govt. Homoeopathic Medical College, Calicut from June 2004 – to Sept 2005 were included. These patients belonged to various socio-economic statuses and of age group between 30-70 years. The results of the study were evaluated using statistical principles.

Maximum age group affected is between 31 - 40 years and the incidence more in middle class. Psora was found to be the miasm in the background.

In this study the efficacy of homoeopathic treatment in cervical spondylosis presenting with radiculopathy was evaluated. Assessment was based on the changes in score noted before and after treatment using the cervical radiculopathy assessment tool.

After statistical analysis, the calculated value was 12.91 which were well above the tabled t value. Thus, this study provides an evidence to say that homoeopathic medicines are effective in managing this condition.

Medicinal management was found to be very much effective. Sulphur and Pulsatilla was found effective in 4 (19.04%) cases each. Calcarea carb in 3 (14.28%), Lachesis and Lycopodium in 2 (9.52%) cases each, Silicea, Rhus tox, Lac caninum, Phosphoric acid, Phosphorus and Bryonia was found effective in 1 (4.76%) case each. But Bryonia gave only amelioration of pain and there was no relief to the other presented features of the same patient and the same was the case with phosphorus also.

CONCLUSION

The following salient conclusions have been drawn from the present study after summarizing its findings.

- 1) Homoeopathic medicines are effective in the management of cervical spondylosis presenting with radiculopathy
- 2) Age group mostly affected is between 31 – 40 years.
- 3) Incidence of the disease is more in middle class
- 4) Psora is the predominant miasm in the background.

BIBLIOGRAPHY

1. Grant's method of Anatomy, A clinical problem solving approach, 3rd edition, Williams & Wilkins, pp-527-528
2. Bailey and Love's, Text book of Surgery, pp-503,514-517
3. Sabiston's Text book of Surgery, Biological basis of modern surgical practice, 17th edition, volume 11, ISBN publication, pp-2160-2162
4. Essentials of Orthopaedics and Applied Physiotherapy, Jayanthjoshi & Prakash Kotwal, B.I. Churchill Livingstone Pvt Ltd, New Delhi, pp-386-392
5. Harrison's Principles of internal medicine, Mc Graw Hill, 15th edition, Vol II,
6. Oxford text book of medicine
7. Oxford text book of Surgery
8. <http://www.Rx.MED>
9. <http://www.Bmj.com>
10. [http://www.Medline plus.medical encyclopedia](http://www.Medline.plus.medical.encyclopedia)
11. [http://www.Neurosurgery today. Org](http://www.Neurosurgery.today.Org)
12. [http://www.Thamburaj .com.neurosurgery on the web](http://www.Thamburaj.com.neurosurgery.on.the.web)
13. <http://www.emedicine.com>
14. Outline of Orthopaedics, John Crawford Adams, David.L.Hamblem, 13th edition, Churchill Livingstone, pp 152 – 154, 159 – 162.

15. Davidson's Principles and Practice of Medicine, 19th edition, Churchill Livingstone, Harcourt Brace and company Ltd. Pp 1189 – 1191.
16. K.V. Krishnadas Textbook of medicine, Jaypee brothers, medical publisher's pvt. Ltd, 4th edition, Vol 11, pp 1018 – 1019.
17. Concise Textbook of Surgery, S. Das, 1st edition, pp 511 – 512.
18. Text book of Neurosurgery, Cervical Spondylosis, 11nd edition, volume 11, B.I. Churchill Livingstone pvt ltd, New Delhi, pp 775, 777, 780
19. <http://www.home.com>
20. Apley's System of Orthopedics and Fractures, 7th edition, Graham Apley and Louis Solomon, Butterworth – Heinemann publishers, pp 340,341.
21. Textbook of clinical neurosurgery, Christopher.G.Goetz, Eric.J.Pappert, W.B.Saunders Company, pp 544 – 546.
22. Principles and Practice of Surgery, 3rd edition, A.P.M.Forrest, D.C.Carter, I.B.Macleod, Churchill Livingstone, pp 37.
23. Principles of Neurology, 4th edition, Raymond.D.Adams & Maurice Victor, McGraw Hill International editions.
24. J.H.Allen, The Chronic Miasms, B.jain publishers. pvt. ltd, New Delhi, pp.32, 58, 59, 107, 250.
25. H.A.Roberts, The principles and art of cure by Homoeopathy, Indian books and periodicals syndicate, pp 180 – 194, 206 – 227.
26. Samuel Hahnemann, The chronic diseases, their peculiar nature and homoeopathic cure, B.jain publishers.pvt.ltd, New Delhi, pp 7, 46, 47, 68, 69, 70, 125.
27. P.N.Banerjee, Chronic disease, its cause and cure, pp
28. Dr. Subrata Kumar Bannerjea, Miasmatic diagnosis, B.jain publishers.pvt.ltd, New Delhi, pp 43.
29. Phyllis Speight, A comparison of the chronic miasms, B.jain publishers.pvt.ltd, New Delhi, pp 74 – 79.
30. Dr. Harimohan Choudhury, Indications of miasm, B.jain publishers.pvt.ltd, New Delhi, pp 16, 28, 32, 67.
31. William Boericke, new manual of homoeopathic material medica and repertory, B.jain publishers.pvt.ltd, New Delhi, augmented edition, Pg 813
32. Pointers to the common remedies, M.L.Tyler, Pratap Medical Publishers, pp 123 – 127.
33. Lectures on materia medica, J.T.Kent,
34. Dictionary of practical material medica, J.H.Clarke,
35. Farrington's Lectures on clinical material medica, 4th edition, E.A.Farrington, B.Jain publishers, pvt, ltd, New Delhi, pp 1035.
36. Lilianthal therapeutics, Samuel Lilianthal,
37. Dr.Samuel Hahnemann, Organon of Medicine, B.jain publishers.pvt.ltd, New Delhi, 5th and 6th edition, pp
38. Therapeutic guide, The most important result of more than 40 years of practice, Dr.G.H.G.Jahr, B.jain publishers.pvt.ltd, New Delhi pp 227, 234, 235, 252.
39. A Textbook of material medica and therapeutics, characteristic, analytical and comparative by A.C.Cowperthwaite, B.jain publishers.pvt.ltd, New Delhi, pp 859.

40. Textbook of homoeopathic material medica, Otto lesser, B.jain publishers.pvt.ltd, New Delhi, pp 955, 957, 965, 966.
41. Principles of prescribing, Dr.K.N.Mathur, B.jain publishers.pvt.ltd, New Delhi, pp 13, 16, 31.
42. Lesser writings with therapeutic hints, E.A.Farrington, B.jain publishers.pvt.ltd, New Delhi, pp 159.
43. Practical homoeopathic therapeutics, W.A.Dewey, Pratap medical publishers, pp 21 – 22, 28 – 29, 202 – 205, 255.
44. Raue pathology, special pathology and diagnosis with therapeutic hints, 4th edition, pp 721, 790 – 791.
45. Handbook of materia medica and therapeutics of homoeopathy, Narasimhamoorthy, B.jain publishers. pvt. ltd, New Delhi, pp 607 – 632.
46. Quick bedside prescriber with notes on clinical relationship of remedies and homoeopathy in surgery, J.N.Singhal, B.jain publishers.pvt.ltd, New Delhi, pp 327, 332, 346, 448, 451.
47. A manual of pharmacodynamics, Richard Hughes, B.jain publishers.pvt.ltd, New Delhi, pp 960.
48. Best of Burnett, compiled by Dr. H.L.Chitkara, B.jain publishers.pvt.ltd, New Delhi, pp 193.
49. A dictionary of domestic medicine and homoeopathic treatment with a special section on diseases of infants, John.H.Clarke, 3rd edition, B.jain publishers.pvt.ltd, New Delhi, pp 365, 366.
50. The outline of materia medica, by Henry Buck, r, B.jain publishers.pvt.ltd, New Delhi, pp 440
51. A Synoptic key of the Materia medica, C.M.Boger, B.jain publishers.pvt.ltd, New Delhi, pp 395.
52. Homoeopathic practical mateia medica of 332 remedies, J.C.Ghosal, B.jain publishers.pvt.ltd, New Delhi, pp 776.
53. The knowledge of the physician, Richard Hughes, B.jain publishers.pvt.ltd, New Delhi, pp 144.
54. Realistic material medica with therapeutics, repertory, Dr.N.K.Banerjee, B.jain publishers.pvt.ltd, New Delhi, pp 414.
55. Kansal's practice of medicine with homoeopathic therapeutics, 1st edition, Kamal kansal and Rakesh kaushal,
56. Handbook of homoeopathic practice, C.G.Publmann, B.jain publishers.pvt.ltd, New Delhi, pp 305, 306, 437.
57. Robin Murphy.N.D, Homoeopathic Medical Repertory, B.jain publishers.pvt.ltd, New Delhi, 2nd revised edition.
58. Complete Repertory, Roger von Zandvoort, B.jain publishers.pvt.ltd, New Delhi, Pg
59. Kent's Repertory
60. Phatak's repertory
61. B.K. Mahajan, Methods in bio-statistics for medical students and research workers, 6th edition, Jaypee brothers,
62. The homoeopathic domestic physician⁶² by Constantine Hering 13th American edition, pg no:125
63. Clarke prescriber.
64. Rheumatic diseases, Dr.S.L.Kumar, B.jain publishers. pvt. ltd, New Delhi, pp 235.

Dr. Smitha Madhavan B.H.M.S, MD(Hom)
Department of Organon Govt. Homeopathic Medical College.
Calicut.10 Kerala. India
Email : drsmithamadhavan@gmail.com

© similima.com