CHAPTER 13

DISC SYNDROME
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A. INTRODUCTION

In the Darwinian evolutionary ladder, man is standing on the topmost rung by virtue of the fact this vertebrate creature has evolved bipedalism. Although not relevant in the present context, the second important factor to establish the superiority of man in nature is his ability of communication i.e. language. Since the time, man evolved to bipedalism, his spine/vertebra has to do too many 'acrobatics' besides balancing of the body carrying load of the body, with least lever, to the extent of rattling. Possibly the nature has realised that this vertical load on the spine should not lead to the friction of the vertebra and pinch the cord, and thereby cause the disability where very purpose of bipedalism is undone. Therefore, the vertebrae are well cushioned by the disc.

The advantage of bipedalism has constantly been misused as the man started evolving. For several countless reasons whose anumeriation is impossible and beyond the scope of present studies, problems of intervertebral disorders have been invited and accumulated by man. Depending upon the diversity of disorders they have been grouped in several syndromes such as cervical syndrome, thoracic syndrome, lumbar syndrome and so on. Perhaps the causitive reasons of each may be different and varied, not only with the human individuals, but also with number of habits and activities, eventually leading to group of syndromes at time uncurable and needed often heavy medication if not possible to cure, going to the surgery. Very often such problems ended up in the
disability of the patients. It will be relevant therefore, have to give an account of anatomy of vertibral with special reference to cervical vertebrae.

B. ANATOMY OF INTER-VERTEBRAL DISCS

Anatomically the entire vertebral column is divided into 3 segments. (Fig.3.1) The uppermost from 1 to 7 is cervical, followed by thoracic 12 vertebrae and subsequently 5 lumbar vertebrae. Each of these segments are functionally distinct as much as with their structural identity. Nevertheless they are connected by intervertebral discs which are cartilageneous plates, functioning as a portion of the body. They consist of hyaline cartilage and when the growth has finished they reach out to the vertebral ring. The cartilage plate is said to be fused to vertebral end plate by a calcium layer through which small pores penetrate for the nutrition of the intervertebral disc. The interior of the vertebra retains its contact with the cartilage plate by the lamina cribrosa, the seive like vertebral surface. It is well established in the literature now that diffusion of various substances occur through this layer (Kramer 1981). What is necessary to emphasise here is the functional identity of intervertebral disc in the entire spine or intervertebral column irrespective of the fact that vertebrae are functionally identified in 3 different segments.

C. CAUSE AND ORIGIN OF INTERVERTEBRAL DISC SYNDROME

AS PER MODERN SCIENCE:

Degenerative change in the intervertebral disc is the most common cause of back pain. Other causes may be congenital, developmental, inflammatory, or of tumor origin; these however, are of secondary clinical
LATERAL VIEW OF AN ADULT SPINE

5 Cervical discs

Cervicothoracic Junction

11 Thoracic discs

Thoracolumbar junction

4 Lumbar discs

Lumbosacral junction

Fig 3-1
importance but may be affected by concurrent changes in the intervertebral discs. During the last decades increasing knowledge as to the altered appearance and disturbed function of the spine have attracted greater interest. This is not only due to the general involvement of the intervertebral discs but also to their effects transmitted to adjacent structures. The direct relationship between a herniated disc and sciatica was regarded as having a morphological basis. The fixation on pathomorphological changes as a cause for symptoms led to a situation in which functional disturbances of the spine without obvious pathomorphology were treated by paramedical helpers rather than by medical specialists. It soon became evident that the surgical removal of a prolapsed disc did not solve all problems. It was also found that there was an outstanding difference between pathomorphological and radiographic changes, on one hand, and symptoms on the other. Changes in form and function do not always correspond to the appearance of each individual segment. Thus, deformity does not necessarily indicate discomfort. The proof for this is that scoliosis and juvenile kyphosis can exist completely without symptoms. Likewise, one might often note in an X-ray of the spine taken for other conditions marked degenerative changes in patients who deny any type of symptoms.

Today our functional and dynamic attitude is based on new information both on the biochemical and biomechanical approach to the intervertebral disc which need not necessarily be the site of morphological change but rather the centre of metabolic processes which cause a change in form, consistency and volume, all of which influence the function of the spine.
More often, intervertebral disc disease is limited to the areas in the lower cervical and lower lumbar segments. (Fig. 3.2)

Both in diagnosis and treatment it is necessary to recall the apparent innocuous progress of intervertebral disc disease. Since intervertebral disc syndromes usually affect young people, it is essential that after treatment the physician suggests suitable daily exercises to the patients. In earlier days there was a negative attitude to the unavoidable onset and often hazardous progress of intervertebral disc disease. Today, however, there is reason for a more optimistic approach taking into account the possibilities offered by well planned prophylaxis and rehabilitation. The frequency and intensity of cervical and lumbar syndromes may thus be influenced.

Ailments originating in the intervertebral discs are also called discogenic. Symptoms arising from the apophyseal joints and/or ligaments are also regarded as discogenic since disorder in the intervertebral disc is often precipitating cause of symptoms.

The intervertebral disc itself is the major joint of the spine and is of the type called amphiarthrosis. (Fig. 3.3)

Spondylosis and osteochondrosis are often used as a diagnosis, though without signifying any particular disease they have to be interpreted as signs of increasing age and can be compared to the development of gray hair and wrinkles of the skin. Age is simply a physiological process which occurs in all structures alike. In the intervertebral disc, however, aging changes occur early as nutrional and biomechanical factors exert an influence different to those on other structures. The natural and biological
The frequency of intervertebral disc disease in various segments of the spine is as follows:

- Cervical Syndrome: 1.96%
- Thoracic Syndrome: 36.1%
- Lumbar Syndrome: 61.94%

Fig. 3.2
MOTION SEGMENT
ACCORDING TO JUNGHANNS

Fig. 3.3
fate of the intervertebral disc thus is early aging. In elderly people spondylosis (the suffix 'osis' signifies degenerative change) and osteochondrosis can always be demonstrated without necessarily exhibiting symptoms. Besides diskosis, the expression "intervertebral disc degeneration" should be retained as it is internationally accepted for minology. A display of symptoms may be understood in this term, which, however does not necessarily depict the morphological background. Degeneration is a true morphological term which has no clinical meaning as structural changes do not imply disturbed function or symptoms. Once, however, symptoms of any kind appear, it seems correct to speak about intervertebral disc disease, based on degenerative changes. There are deviations in the spinal axis both in the frontal and sagittal planes. They may cause asymmetrical forces being exerted on the intervertebral disc. In the cancare, poorly nourished parts of the intervertebral disc degenerative changes occur rather rapidly. Consequently, softening and ruptures preferably develop in this region. In analogy with the term prearthrotic deformity it has been suggested that, deformities in posture, e.g. pelvic hilt kyphosis, hemivertebrae and scoliosis are for runners to an early diskosis and thus prediskotic deformity. Once again the morphologic structure carried no clinical importance. However, areas with these changes are more prone to disease with the symptoms.

1. **Classification of Ailment**

   Based on the ligaments the ailments are variously defined or classified. There are three types: (a) Anulus fibrosus, (b) Discosis and (c) Spondylosis.
(a) Anulus fibrosus -

Here the circumferential ringlike portion of an intervertebral disc, composed of fibrocartilaginous and fibrous tissue.

(b) Discosis -

Discosis is mainly based on biomechanical and pathological changes in the intervertebral disc connected with degenerative change of the same.

(c) Spondylosis -

In spondylosis there occurs degeneration of the intervertebral disc with reactive osseous spurs on vertebral borders. (Fig.3.4)

According to the reports from the German Health office, degenerative joint disease is the dominating chronic disorder (Kramel 1981). Because of the uncertainty in the terminology of rheumatic diseases, a number of conditions are wrongly labelled as rheumatic; this is especially true of degenerative diseases in the locomotor system in which intervertebral disc degeneration plays an important role.

In an investigation, which was made by Knepel (1977) in one department, it was reported that in general practice every tenth patient had intervertebral disc degeneration as the cause of back complaints. The same reason was found in every third patient who consulted an orthopedic outpatient department and for every second patient consulting an orthopedic surgeon. The percentage of orthopedic outpatient treatments for intervertebral disc syndromes came to 37.8. These become more prominent if disorders of the vertebral column alone are studied no less
THE DEVELOPMENT OF SPURS IN SPONDYLOSIS

Fig. 3.4
than 92.8% are due to disc degeneration. The above report of Knepel (loc
cit) exposes the gravity and cinario of the disease.

Intervertebral disc syndromes are almost as common in men as in
women (Kramer 1981). He further elaborates that acute wryneck in
children is primarily due to involutional changes in the cervical
intervertebral discs. According to Schmorl and Junghanns (1968) after 30
years of age there is no human spire which does not exhibit degenerative
changes. A regular nutrition supply to the disc cells for a period of several
decades could not be guaranteed by the active and passive mechanism of
fluid transport. They further noted that limitation of movement and rigid
fixation in unfavourable positions further influenced the fluid transport in
the intervertebral disc. Other deleterious factors were minor injuries,
temporary strains and protracted position of rest. They finally concluded
that genetic factors influenced the development of intervertebral disc
degeneration.

Softening of the discs and also the loss of turgor gives rise to a
loosening and fragmentation of the intervertebral disc. There will thus be a
separation of the disc tissue from the intervertebral ligaments. This is
especially common in the anterior longitudinal ligament which bridges the
discs and inserts with the Sharpey's fibers into the vertebral body. In these
regions osseous reaction develop which spread into the ligament.
Spondylotic spurs develop which initially have a characteristic horizontal
direction but later turn into a longitudinal course following the longitudinal
ligament (Fig. 3.4) Simultaneously small spurs may develop posteriorly.
The development of osseous spurs can turn into a widely spread process
and may result in a generalized hyperstotic spondylosis the so called
spondylosis hyperostotica. Despite the impressive appearance of these osseous changes the symptamatology is surprisingly mild.

Clinically however, the reactions in the intervertebral disc are of much greater importance.

As a rule, the compression of nerve roots in the cervical lumbar spine never yields any vegetative symptoms. Schliack (1973) has shown that from Th2 down to L2 there are no vegetative different branches from the spinal cord running over the sympathetic chain: In other words, acute and chronic disc lesions involving C5 - C8 and L4 - S1 do not engage the sympathetic system.

The loss of perspiration in lesions of the cervical and lumbar spine is an important diagnostic sign in distinguishing plexus and peripheral nerve lesions.

CERVICAL SYNDROME

(d) Symptoms

The history is of utmost importance and this is particularly true when no objective signs are present. Thus, difficulties arise in making an acceptable evaluation. The characteristic shoulder neck pain with stiffness in the cervical spine may appear very suddenly. The causes are, as a rule, continuous turning of the head or a kyphotic position of the cervical spine as occurs in reading, desk work or when watching television. Characteristic symptoms in the cervical syndrome are:
Sudden onset
Relation to posture
Increasing night pain

The first appearance of the symptoms may come in connection with a cooling of the shoulder neck muscles by a draft as in car driving. In these instances it is usually the continuous unfavourable position of the head with an increased muscle pull which increases the intradiskal pressure. Often there is a kyphotic position under load.

The symptoms of a cervical syndrome may also appear in the morning on awakening. Discomfort is after related to position. Typical pain can be elicited by special movements of position of the cervical spine. The patient then spontaneously takes a position which decreases the pain. Characteristic of the cervical syndrome is a deterioration during the night. The patients are awakened by their pain. Though the loss of muscle tonus and conditioned motor impulses the patient attains positions during sleep which can result in pain. Pronounced lateral inclination and a hyper lordosis may cause a narrowing of the concave part of the intervertebral foramen. When the additional space for the nerves and vessels is diminished, a vicious circle ensues with irritation of the nerves, pain, and muscle spasm. These conditions can arise by sleeping in the prone position or with too high pillows. Pain in cervical syndromes is often combined with stiffness. Depending on the origin of the syndrome, various symptoms develop pain in the shoulder neck region, paresthesias, occipital headache, ear tingling, syncopes, sternocardias or migraine.
In cases with pronounced anterior spondylosis, there can be a
complaint of difficulties in swallowing, disturbance in breathing or vision, is
most uncommon. There are other symptoms which cause complaint, such
as tiredness, loss of initiative and general irritation.

(e) Clinical Signs -

On examination of a cervical syndrome, two groups of signs may be
distinguished. One which relates to the cervical spine, such as spasm of
the shoulder-neck muscles and mobility of the spine being inhibited by pain
and the other is based on a certain segmental involvement localized pain
on pressure. Over a spinous process, decreased mobility of a limited area
of the spine, signs of segmental nerve root involvement and finally the
information obtained from special examinations like EMG, myelography,
discography and distension tests are the means of diagnosing the
syndrome/ailment. The schematic diagram given in Fig.3.5 elucidates the
radicular innervation of different nerves.

(f) Inspection

Examiner notices, stiffened position of the neck which the patient
retains during dressing. The shoulders are often pulled up. The patient
tries to avoid rotation and instead turns the whole trunk.

(g) Palpation

There are circumscribed areas which are hard and tender - often
called myogeloses and these are in particular found in the upper trapezius
region from the occiput down to the acromio clavicular joint, in the scaleni
and in the rhomboids. Moreover, there is tenderness of the spinous and
RADICULAR INNERVATION
[dermatomal distribution]

Anterior aspect  Posterior aspect

Fin. 3.5
transverse processes. The transverse processes of the atlas can be palpated in the mandibulomastoid angle.

Tenderness can easily be elicited on both sides but is more pronounced on the side which is involved in the disease process.

On testing the function of the cervical spine there is always a limited mobility. Very often decreased mobility is limited to a special segment. Flexion is tested and it is then practical to measure the distance between the chin and chest. Rotation and lateral inclination can quite easily be measured in degrees.

Mobility of the cervical spine is related to its length, muscular mass and the age of the patient. A limitation of mobility should be compared to the opposite side, and the particular motion that elicits pain should be noted.

LUMBAR SYNDROME

The incidence of Lumbar spondylosis is as high as that of cervical spondylosis. From the literature it is seen that more and more are prone to this disease. Symptoms generally develop between the 25th and 30th year of life and reach their maximum at the age of 40 in men and some 10 years later in women (Kramer, 1981). During this stage of life there is a biomechanical discrepancy in the discal tissue with a high pressure in the nucleus pulposus and a decreased resistance of the anulus fibrosus (Kramer, 1981).
a) Anatomy of the Lumbar discs

In all there are 5 lumbar vertebrae. The intervertebral disc between T12 and L1 is considered as Lumbar disc only. The size of the disc goes on increasing from superior to inferior discs (Exception lumbosacral disc)

The intervervetbral foramina are at the same level as the intervertebral discs. The ganglia are placed anteriorly and are almost in contact with lumbar disc. Kramer has pointed that anatomical properties place the anatomical and physiological position of the nerve roots at risk, since by changes in the intervertebral disc or dislocation of the vertebrae the nerve roots can easily become compressed.

b) Symptoms -

The most important symptom of Lumbar spondylosis is pain. In lumbar syndrome the character of pain, the site of pain and intensity of pain are typical. When neurological signs are absent, patient's history plays an important role in diagnosis. The pain is not related to the pressure on the nerve root. Motor loss is more than the sensory loss.

Lumbar syndrome, almost all times, runs a very short course. sometimes there is history of lifting or over-straining. There is a great variation in the quality of pain.

Typical symptoms in the lumbar syndrome

Sudden onset
Interchangeable course
Dependence of posture
Increase of pain in coughing, sneezing and abdominal pressure.

(Kramer 1981)
Sometimes there is pain in lumbo sacral region. Sometimes the pain radiate in the thigh, some times the foot is involved. There is a great variation seen in the relief of pain. Some patients find relief in pain while sitting, other they find comfort in lying down position. Some are fine in prone position.

c) Signs:

Signs are seen, as a rule by inspection, palpation, functional test including neurological evaluation.

Patients with sciatic symptoms have limping gait. The gait may be asymmetrical. The patient always seeks support for sitting or standing. forward bending makes the patient discomfort.

The patient is judged for the forward and backward bending movement, side movements.

The patient is then examined in supine position when lumbar spasm disappears. In prone position the discomfort always increases. There is localised tenderness at the point of lesion.

In the prone position hyperextension of the hip joint may cause anterior thigh pain and thus an involvement of femoral nerve can be detected (Kramer, 1981).

In sciatica straight leg raising sign (SLR) is positive.
d) Radiography in Lumbar Syndrome -

In Lumbar syndrome the disc height is diminished. As seen in the cervical vertebrae, the osteophytes are seen, primarily growing horizontally and then vertically.

According to Kramer (1981), the interpretation of radiographs is important as, once other disease has been excluded, prediscotic deformities can be observed. Axial deviations, vertebral anomalies and narrowing of the lumbar spinal canal facilitate the later development of disc disease.

2. The Treatment of the Cervical Syndrome

(a) Conservative treatment

Conservative treatments have always been based on symptomatic relief. Despite the various causes for cervical disc syndromes, the treatment is quite similar. The treatments vary from simple collar to surgical interference.

Both causal and symptomatic treatment are instituted simultaneously. Clinical signs often appear when deformities or excessive motion develop. The causal treatment that are given have been directed to one of the pathogenetic components and anything from isometric muscle exercises to fusion procedures are designed for this purpose. Heat electrotherapy, massage and analgesics are used in addition to the causal treatment especially to break the vicious circle of pain-muscle spasm-deformity. The relief that the patient senses here, therefore is transient.
(b) Heat Therapy

Heat behaved to play an important role in the treatment of cervical disc disease especially when there is acute pain. It is evident that heat causes hyperemia and consequently a loosening of the spastic shoulder neck muscles. By reflex action there is a relaxing influence on the corresponding segment. By deep tissue heat localized tendino periostitic irritation, which is a part of an inflammatory reaction of cervical disc disease, is decreased. Simultaneously the heat also influences the conduction rate of the motor nerves and the spinal motor activity so that there is relaxation of the pain-induced muscle spasm. This again is apparent and transitory.

(c) Cervical collars

A correct collar fulfills the following 3 therapeutic prerequisites:

1) Immobilization
2) heat
3) weight release

The fixation of a collar offers the cervical spine diminished mobility. The repeated mechanical irritation of the nerve roots or sensory receptors in the posterior longitudinal ligament is decreased.

The collar also offers the heat(!) the body heat is retained in the area covered by the collar and relaxation of the muscles can be expected. In the clinical medicine it is believed that in cervical disc disease it is important to diminish the weight or the different motion segments, as the cervical spine is subjected to considerable load by the weight of the head. The cervical spine contains no supporting tissue like the thoracic spine or lumbar spine.
and thus the equilibrium is easily jeopardized. Every change in posture implies a balancing of the head by the cervical spine by changing the tonus of the shoulder-neck muscles. Therefore it is evolved that a well-fitting collar should relieve the tense muscles from some of the weight of the head. It is true that a collar may cause some extension of the cervical spine. By symmetric contraction of the throat muscles, the posterior parts of the cervical spine will be widened. This will always occur when the patient bends his head anteriorly. One should not undermine the discomfort imposed by the collar by virtue of the arrest of neck movement.

(d) Drug Therapy

According to Kramer (1981) the drug therapy in a cervical syndrome is symptomatic and will also facilitate the physiotherapy in modern medicine. There is as yet no evidence that any drug will influence the volume changes of disc tissue. Because of the variation in pathogenetic mechanisms, there is a corresponding variety of drugs for treating a cervical syndrome. Some effect has been observed by the use of analgesics and antiphlogistics which are used for rheumatic condition and the drugs commonly used are phenylbutazone, aspirin, indomethacin and many others. The main objective of administering these drugs and their mode of action are to relieve pain. It is strongly suggested not to use drugs containing cortisone. A number of preparations containing 'B' vitamin are supposed to have a neurotropic effect and should facilitate the regeneration of the compressed nerve fibres.
Muscle relaxants have an entirely different effect in that they have a direct action on the muscles, which become relaxed and thus relieve pain in conditions with tense musculature.

Tranquilizers will lower the sensitivity of the mechanically irritated nerve. This clearly shows that in the behavior by modern medicine are on their will end.

(e) Massage and Electrotherapy

The foremost objective in the treatment of a cervical syndrome is to relax the tensed musculature. For this purpose, massage is valuable for loosening up the tight muscles. In considering this type of treatment it is necessary to remember that the muscle spasm is a reflex mechanism released as a protection for the spine which will be kept at rest by the contracted muscles. Depending on the intensity of the condition, the massage should be adjusted, and in cases of severe pain massage should be instituted very carefully and gradually increased. In hard and tensed muscles the massage should be more intense and its efficacy is dependent on the immediate mechanical effect and the reflex influence on the corresponding motion segment.

It is expected that massage will stimulate the posterior nerve fibres and cause a reflex influence on the motion segment.

After massage the patient should experience a feeling of comfort. If there is still pain or if pain is increased, the patient has either been positioned wrongly or otherwise the treatment has been initiated too early.
Once heat and massage have improved the muscle condition, physiotherapy can be started.

(f) Electrotherapy

Electrotherapy also offers relief of pain. In the treatment of a cervical syndrome there are often difficulties in positioning the appliances satisfactorily and often many of these cause noxious effects on the skin. In common practice it is advisable rather to use massage.

(g) Traction

It is held that it is of greatest importance in the treatment of disc disease to increase the distance of the disc space. It has already been mentioned that a decrease of the disc space with narrowing of the intervertebral foramina can result in local and segmental disc syndromes. The effect of traction is manifold and is based on -

1. widening of the intervertebral foramen
2. widening of the disc space
3. traction of the paravertebral muscles and ligaments
4. correction of vertebral joint deformities
5. volume increase of the disc tissue

The principle of traction and flexion can be achieved by placing the lumbar spine in the ninety-ninety position.

Traction on the cervical spine can best be applied by simple weights. Intermittent motorized traction is commonly used but it is thought that the repeated release from traction might be irritating. According to orthopedics traction has sever limitation. It should not be continued too long since this
might result in an increased volume of the disc tissue and further discomfort and pains may develop.

The indication for traction of the cervical spine is a cervical syndrome which has been verified by the extension test. In older patients traction is contraindicated. The partial blocking of the cervical spine in the elderly should not be disturbed by the effect traction might have.

(h) Manual Therapy

It is said that by manual therapy it is only the vertebral joint which becomes the target for the manipulation. By mobilization and manipulation articular blocks and limitation of movement become released. By short and forceful traction, which is the basis for all chiropractic grips on the cervical spine, there will be a decrease of the intradiscal pressure. It is possible that disc fragments, which have become dislocated either laterally or posteriorly, will be restored to their original location. In other words, there is an effect comparable to that of traction. The skilled therapist can, by a single grip, achieve that which heat, collars and pain killers achieve in several days. This inflicts sever limitation and is indicative of complication.

Orthopedics feel that only pure traction grips should be used. All grips including rotation of the cervical spine are dangerous as an influence on the vertebral artery and the spinal cord cannot be excluded. It should also be remembered that particularly in young people, the discs contain horizontal effects which diminish stability in rotation. Thus, the indications for manual therapy in a cervical syndrome are limited to the acute onset of painful limitation of cervical movement in adults up to the age of 40.
Manipulation should not be carried out too often in order not to produce a lossening of the motion segment.

In other forms of the cervical syndrome, manual therapy is contraindicated. There is an absolute contraindication for manual therapy when symptoms are due to a disc prolapse. There is possibility that the prolapse might be further pressed out and thus cause paralysis. Manual therapy cannot be recommended in cervicocephalic syndromes as the vertebral artery may become involved and injured. Osteophytes from the uncinate process may cause a compression of the vertebral artery, and by manipulation this compression can be enhanced so that the circulation becomes jeopardized. The situation becomes still worse in those cases where arteriosclerosis, aneurysms or other anomalies of the vertebral artery are present.

The most important contraindication to manipulation of the cervical spine is age. With increasing age there are often localized areas of restriction in motion of the cervical spine. These may be disturbed by chiropractic maneuvers. The same thinking applies in conditions following distortion of the cervical spine. The attenuated and partly ruptured soft tissues require rest. Manual therapy will only repeat the damage caused by the distortion.

The foregoing discussion indicates the lurking danger in the treatments that are being practiced and need for absolute expertise.
(i) Local Injections

When pain and muscle spasm have not responded to rest, heat or analgesics, local injections should be considered. This is a common form of treatment in the initial stages of cervical discomfort. By the injections of an analgesic and antiplogistic drug much better results can be obtained than by the oral, parenteral or rectal routes.

(j) Local Muscle Infiltration

Infiltration of local anesthesia into painful muscles offers a remedy equal to the effects of heat and massage.

(k) Cervical Sympathetic Ganglion and Nerve Root Blocks

The local infilteration of anesthetics in the region of the cervical sympathetic ganglia and in particular stellate ganglion has very good effects. In these infiltrations the nerve roots are directly bathed and the source of discomfort is directly treated.

The object of the treatment is to desensitize the irritated nerve root by temporarily relieving the sympathetic chain from irritation. This will no way arrest the problem of degeneration.

The best effect of cervical nerve root block is found in the acute cervical syndrome with a short history and in young patients. In the chronic condition and in older patients this method does not yield very satisfactory results.
(I) Surgical Treatment

Surgical treatment should always be considered in cervical syndromes resistant to all conservative measures including nerve root blocks. The indication for operation is very rare.

(m) Anterior Fusion Procedures

A number of surgical procedures have been suggested but only a few comply with the demands necessary to solve the problems connected with the cervical syndrome.

1. decrease of compression of the irritated nerve root.
2. stabilization of the motion segment.

Complications of the Anterior Fusion: Immediately following operation some patients experience swallowing difficulties due to the perioesophageal hematoma and edema. There may also be an interference with the recurrent nerve resulting in hoarsness, which may remain for about 6 month.

The most important prerequisite for success of this surgical procedure is that the fusion be made on correct indications and at the correct site.

3. Existing Plan of Treatment in the Cervical Syndrome:

(a) Outpatient Basis

i. First episode  Heat, collar, analgesics.
ii. Chronic symptoms  Massage, electropathy, local injections and traction. In intractable pain it is necessary to carry out a distention test, cervical myelography and a vertebral angiography.
(b) Hospitalization

iii. (a) Cervical cord syndrome

(b) Interactable cervico branchial syndrome and

(c) Cervico cephalic syndrome.

Conservative Operative
Nerve root and stellate Anterior fusion
blocks Uncoforaminectomy
Gilsson traction Removal of prolapse
Sedatives

4. Existing Plan of Treatment in the Lumbar Syndrome:

Regardless of etiology and pathology, the object of the treatment is to diminish pain. The goal should be to alleviate subjective discomfort. The treatment must be directed to the intensity of symptoms provoked by this sensitivity in nerve roots and nerve fibres. The range of conservative possibilities for successful treatment is limited. The physician should be in a position to use every possible method of treatment adjusted to the individual case. (Kramer, 1981)

Conservative Treatment

Rest / Heat / Drug Therapy / Massage / Electrotherapy

Manual therapy/ Traction / Local injection
Surgical Treatment:

Lumbar discotomy / Fusion.

For rehabilitation: physiotherapy

The foregoing discussion gives the fairly good exposure of the treatment and also projects light on limitation of the clinical approach to the cervical and lumbar syndrome in modern medicine. These appear to be more causative and not targeted to the root cause of the very origin of the problem.