INFORMATION FOR PATIENTS WITH LUMBAR DISC PROTRUSION

1. PREVALENCE:

One of the commonest ailments of modern days is lumbar intervertebral disc degeneration and its protrusion causing pressure on the nerve roots resulting in low backache and pain in one or both lower limbs.

It is often referred to under different names like ‘slipped disc’, ‘disc prolapse’, ‘disc protrusion’, ‘spondylosis’ etc.

The component age groups affected are young and middle aged persons. Any age group from adolescents around 15 years to elderly patients around 75 years may be suffering from this problem.

Apart from the few severe cases necessitating absence from work and complete bed rest, a very large number of cases suffer from mild to moderate pain varying in severity and considerably restricting physical work and enjoyment of normal activities of life.

Though the symptoms of the disease have been described for hundreds of years, only for the past 70 years its true cause has been discovered and correct treatment has been practised.

With modern methods of investigations it is now possible to diagnose 100% of the cases correctly and with modern methods of treatment it is possible to cure nearly 90% of cases and give considerable relief to the rest of the patients.

2. CAUSE:

Different parts of the body become older at different rates in different people. Some persons get grey hair earlier than others. Some require reading glasses sooner than others of the same age. Similarly in some persons the lumbar spine gets older at a faster rate. The changes involve the bones, the cartilaginous discs between them, the joints between the bones and the ligaments binding them. Similar changes can occur in other parts of the spine also, especially in the neck.

Why these changes happen is not yet fully known.

A considerable percentage of the population is affected by this condition. Fortunately the majority of them have only a mild affliction.

3. SYMPTOMS:

Initially when the changes are confined to the bones and their binding ligaments, the symptoms are comparatively mild. They include pain in the low back, more marked during the last few degrees of the normal movements of the back. The pain is often associated with stiffness of the muscles of the low back.

The pain may have spontaneous remissions and exacerbations over periods of days or weeks. However each recurrent attack has a tendency to be more severe and more prolonged than the previous one.

The pain may be increased in the morning due to the use of unsuitable bed at night. The pain is often increased by any movement which increased the strain of weight bearing or bending forward or backward. These include coughing, sneezing, straining at stool, sex act, weight lifting, prolonged sitting, standing or walking, lifting or carrying heavy weights and using a thick soft mattress or ‘easy chair’.
Often travel over rough roads especially in a bus, jeep, two wheeler or three wheeler makes
the pain worse.

In some persons the changes in the bones and ligaments result in pressure on the nerves
supplying the lower limbs resulting in a shooting pain passing from the back, down the hip, back of
thigh and leg to the heel or toes. All factors which precipitate or aggravate the backache may also
increase the leg pain.

When the pressure on the nerves is prolonged, weakness, numbness or ‘pins and needles’
sensation may occur in the thighs, legs or feet. Often the patient has a tendency to tilt the spine to one
side to ease the pressure on the nerve to some extent and thus relieve the symptoms at least partly.

When the patient already has diabetes and it is not well controlled, the symptoms of pain,
numbness and weakness may be aggravated.

Sometimes lifting a heavy weight, fall, injury to the back or ‘manipulation’ of the back may
precipitate acute deterioration resulting in paralysis and numbness of both lower limbs along with
difficulty in passing urine.

When the patient develops acute retention of urine it is a surgical emergency. He needs to be
investigated and operated within a few hours. Otherwise very prolonged or permanent disability may
result.

Some patients get severe pain or numbness or weakness in both legs after walking for some
distance. Symptoms are relieved by resting for a few minutes but recur on walking again. Such a
cycle of events in characteristic of stenosis of the spinal canal which is not amenable to medical
treatment but requires surgery.

4. DIAGNOSIS:

Plain x-rays of the low back often give an idea of the presence and stage of degenerative
disease of the spine. However these x-rays are quite useful to exclude to some extent other serious
illnesses like tuberculosis or tumors of the spine which may also produce similar symptoms.

There is a condition called spondylolisthesis. One part of the spine slips over the adjacent
part. This is easily recognized by plain x-rays and requires a different type of treatment.

Some years ago myelogram was the investigation of choice. In this procedure a lumbar
puncture is done and a dye introduced into the space surrounding the nerve roots and spinal cord a
space in which clear colourless cerebrospinal fluid is circulating. Then with appropriate positioning
of the patient the dye can be moved to different parts of the spinal canal and x-rays will reveal the
presence, exact location and severity of spinal cord and nerve root compression.

With the advent of CT (computerized tomography) and MRI (magnetic resonance imaging)
for the past two decades it is no longer necessary to do myelogram.

These modern noninvasive investigations give very accurate information regarding the sites
and degree of disc protrusions and the severity of compromise of the neural elements.

They also exclude or confirm the presence of other diseases like tuberculosis, benign tumors
and malignant tumors (‘cancer’) in that region which can sometimes closely mimic disc protrusions.

Once the diagnosis of disc protrusion is confirmed the neurosurgeon may need to do further
tests (1) to exclude or confirm associated diabetes and cervical spondylosis and (2) to check if the
patient is fit for general anaesthesia and surgery if needed.
5. MEDICAL TREATMENT:

Recovery without operation is quite likely if the back is given complete rest from bearing weight. Therefore during the initial stages, the patient should have complete bed rest.

The rest should be taken on a flat surface like a bench or floor with a thin mattress. Yielding surfaces like a spring cot or thick foam mattress should be avoided.

The bed rest should be complete and be strictly observed. The patient should not sit up or lie in bed in a semi sitting posture propped up on pillows. In a horizontal position however he can lie in anyway comfortable to him-on the back, on the face or on either side. He can use a comfortable pillow and keep his knees bent or straight in any posture convenient to him.

Brushing teeth, eating and all other daily activities should be preferably carried out lying down. It is advisable that he should not get up even for passing urine but use a urine bottle or bedpan. If however carrying out any activity in bed causes pain, he can do it sitting up or standing.

He can get up from bed for a total period of about thirty minutes only during a day.

He should take the prescribed tablets regularly. These are usually pain killing drugs – analgesics and non-steroidal anti-inflammatory drugs. They should not be taken on an empty stomach but should be taken after meals or tiffin. If the patient has a peptic ulcer or hyperacidity, the tablets may sometimes increase the abdominal pain. So the doctor should be informed about such pre-existing problems.

A few patients benefit from pelvic traction. Manipulation of the spine by unskilled persons should be scrupulously avoided.

If during this period of rest, weakness or numbness of the leg occurs or if there is difficulty in passing urine, he should contact the neurosurgeon immediately. It may then be necessary to take special x-rays or MRI and if indicated, an operation to relieve the pressure on the nerves should be done without delay.

6. PRECAUTIONS AFTER RECOVERY:

The chances are high that the patient will recover with the above schedule of bed rest and other treatment. This is especially so if the attack is the first or second one. Even after he has recovered from the acute stage of severe pain, he should take care of his back.

The following precautions are useful to prevent another attack of pain. If the patient is obese, he should avoid traveling over rough roads by two wheeler, three wheeler, jeep or bus.

He should continue the spinal exercises, as taught, regularly twice daily. He should continue to use a flat bed with a thin mattress for sleeping. He should avoid lifting heavy weights. One should not forget that some of the heaviest weights that people lift are little children. If he has to lift any weight he must avoid bending forward.

He should use a hard chair with a straight back while he is sitting and put his back straight against it. He should keep his back straight while standing up; he should keep one foot on a low stool if possible. If he feels fatigued during the course of his work, he should take rest for half to one hour in between by lying down on a firm flat surface.

After the muscles of the back have been strengthened by exercises and if the above precautions are observed, recurrence of another attack is very unlikely. During the process of recovery wearing a lumbosacral belt while sitting, standing or walking helpful. If however he gets another attack of pain he should see the neurosurgeon immediately.
7. ASSESSMENT FOR SURGERY:

The neurosurgeon will then examine him and arrange to carry out tests to confirm the presence of a disc protrusion and assess whether or not he needs surgery.

The most useful of these tests is MRI of the spine. It is painless and absolutely harmless. As stated earlier the MRI shows

1. Whether any other disease like tumour or tuberculosis is present.
2. Whether the bony canal is abnormally narrow.
3. Whether there is compression of the nerves
4. At which levels the compression is acting
5. How severe the compression is
6. Whether there is any displacement between the vertebral bodies and
7. Whether any disc fragment has come out of the space and is lying in the spinal canal

If the disc protrusion is massive, if the disc fragment has come out loose, if the pain is very severe and unrelenting, if the patient has progressive neurological deficit like weakness and/or numbness of the foot and/or leg and above all, if the patient has difficulty in passing urine, he needs surgery.

8. SURGICAL TREATMENT:

The operation is a comparatively simple procedure although it may take a few hours even in expert hands. With modern techniques of anaesthesia and blood transfusion, the risk of surgery is very low. The chance of recovery is very high if the operation is done very carefully.

The fitness for general anaesthesia and surgery is first assessed by tests like blood counts and urine analysis and tests to assess lung function, liver function, kidney function and heart function.

The surgeon opens into the spinal canal by an incision in the back and removes the bony material, ligaments and cartilage pressing on the nerves. Once the compressed nerves are fully released, as much as possible of the degenerated disc material is removed to prevent any possible recurrence in future. Whether only a small opening needs to be made and the nerve decompressed with the aid of an operating microscope (microdiscectomy) or whether a part of the lamina has to be removed to decompress several nerve roots on one or both sides (hemilaminectomy or laminectomy) or several laminae have to be removed to give decompression for spinal canal stenosis (extensive laminectomy) has to be decided depending on the individual patient’s requirement by an experienced surgeon.

Some patients may require fusion of the spine after removal of the disc. If fusion required it is advisable for an experienced orthopedic surgeon and an experienced neurosurgeon to treat the patient together.

The stitches are usually removed on the tenth postoperative day. Till then the patient should be at complete bed rest. He is gradually mobilized from that day and given physiotherapy. In exceptional cases early mobilization may be advisable but as a rule it is better to give rest till the stitches are removed.

9. POSTOPERATIVE CARE:

A white collar worker can go back to his work after 4 to 6 weeks from the time of surgery. A manual labourer can undertake light work in 8 to 10 weeks after surgery. However after operation he should avoid heavy weight lifting and hard manual labour.
Other precautions like using a firm flat bed, using a hard chair with a flat back and doing regular spinal exercises, as taught, should be continued after surgery.

Excessive forward or backward bending of the spine will have to be avoided for a few weeks. Travelling over rough roads is to be avoided.

If a spinal fusion has not been done, wearing a lumbosacral belt helps especially when the patient has to sit, stand or walk for long periods. Over a few weeks the belt can be used less and less and finally discarded, when the back muscles have gained sufficient strength from regular exercises.

10. FAILED BACK SURGERY SYNDROME:

In a small percentage of cases the pain may not subside after surgery or may recur within a few weeks.

These cases need thorough investigations as the causes for persistent or recurrent pain are many. They include

(1) inadequate removal of disc
(2) inadequate surgical decompression
(3) recurrence of disc protrusion at the same site or at a different site
(4) infection at operated site
(5) scarring inside or around nerves
(6) previously overlooked or subsequently occurring new pathology like tumor
(7) uncorrected spinal instability and
(8) Anxiety and/or depression due to different causes.

An experienced neurosurgeon should be consulted in such cases. Proper treatment can give complete cure in many of these recurrent cases also.

11. CONCLUSION:

While the vast majority of cases can be given very good relief with medical management, a small minority can get relief only with surgery. It is advisable to do surgery for these cases at an early stage instead of waiting for months or years till the pain becomes intractable. Long standing inflammation of the nerve sometimes causes scarring within and around the nerve and at that stage even surgical decompression will not relieve the pain fully. Therefore, once surgery is decided upon it is better to do it early in order to get complete relief.

CONTACT DETAILS

Please get in touch with your doctor if you have any doubts regarding your complaints or if any of your friend or relative is suffering from a similar complaint:

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