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LUMBAR DISC LESIONS

CONSERVATIVE TREATMENT*

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Ordinary conservative treatment appears to me to consist of: (1) Rest in bed, (2) corsetry, (3) a plaster jacket. Should these measures fail the question of laminectomy arises. Hospitals still exist in England where heat, massage and exercises are given as a relic of the old 'fibrositis' days, but none of these three pastimes can be dignified by the name of treatment.

My views are different. If a disc protrusion has occurred, my first stand-by is manipulative reduction; my next, reduction by traction. If that fails, epidural local anaesthesia may succeed in abolishing symptoms. If that fails, and the symptoms warrant and time is unlikely to bring relief, and there is no neurosis, laminectomy has to be considered.

After reduction by manipulation or traction, we carefully explain to each patient that cartilage, being avascular, cannot unite and that reduction of the displacement has not cured the damage to the disc itself; it has merely dealt with the displacement. He must therefore be careful to maintain his lordosis at all times, so as to avoid recurrence, and to come for immediate reduction should he nevertheless suffer pain again. Heavy workers benefit from a belt maintaining lordosis. You will notice that reduction followed by its maintenance by a corset follows normal orthopaedic principles and bears no relation to the common but illogical practice of applying the corset with the displacement still in being.

EXAMINATION

The choice of method in conservative treatment depends on the behaviour, size, situation, consistency and duration of the displacement. This is determined as accurately as possible by listening to the patient's story and by careful clinical examination. It does not rest on the X-ray appearances at all; for this shows the width of the joint space but not whether a protrusion is present or not. The past behaviour of a disc lesion is described in the history; whether it is recent or long standing, pulpy or annular, stable or not, central or postero-lateral, altered or not by posture or compression, is deduced from what the patient says. The clinical examination that follows allows an estimate to be made of position and size. It is in three parts: (1) The articular signs on movement of the lumbar spine, (2) the mobility of the dura mater when stretched from above and of the nerve-roots when stretched from below, and (3) the presence or not of impaired conduction of the nerve-roots.

MANIPULATION

If a disc lesion with displacement is found present, an immediate attempt is made at manipulative reduction, unless some contra-indication exists. Were this policy followed as a matter of course, as it would be with a broken bone or the meniscus at the knee, much avoidable invalidism would, in fact, be avoided. The medical man should perform the manipulation at once himself or, as we do at St. Thomas's, delegate the work to trained physiotherapists. No anaesthesia is allowed; for this makes manipulation both dangerous and less likely to succeed. As long as the patient is conscious, the position of the protrusion can be ascertained after each manoeuvre; for straight-leg raising and pain on coughing or on lumbar movement can be tested afresh each time. In this way the manipulator can watch the protrusion moving and he is thus guided towards the most effective method; moreover these changes in the patient's clinical state show him whether to go on or to stop. Once full reduction is achieved (i.e. full range without pain) the postures to adopt are explained to the patient and the question of a support to help maintain lordosis arises.

Pringle (1956) found the period of absence from work halved when his physiotherapists adopted the methods of treating disc lesions outlined here.

* A paper presented at the South African Medical Congress, Durban, September 1957.

Contra-indications to Manipulation

1. *Danger to fourth sacral root.* Great care must be taken to avoid compression of the fourth sacral root, since any damage done may prove permanent. Manipulations should be avoided in patients with (*a*) bilateral sciatica (except in the elderly), (*b*) referred coccygodynia, (*c*) paraesthesiae in the saddle area, perineum, genitals or rectum, (*d*) interference with bladder function related to the lumbago or sciatica or (*e*) impotence.

2. *Acute lumbago.* If gentle pressure on the lumbar spine causes severe pain, manipulation is out of the question and epidural local anaesthesia should be substituted.

3. *Psychoneurosis.* Neurotic patients with a slight genuine disc lesion often assure the doctor that they are able to stand manipulation. It is carried out with care, and the patient leaves the department much better. That evening however, a nervous crisis is apt to develop, and the patient and family doctor must be warned about this.

Manipulation Harmless but Ineffective

Manipulation is useless but not harmful in the following conditions:

1. *Too large a protrusion.* Protrusions larger than the aperture whence they emerged cannot be reduced by manipulation. This is indicated by (*a*) sciatica with marked lateral deviation of the lumbar spine, or (*b*) considerable root palsy, i.e. two or more neurological signs.

2. *Too long standing.* If a protrusion has caused sciatica that has lasted longer than 6 months, manipulation is not worth trying unless the patient is over 60 years old.

3. *Nuclear protrusion.* This may be suggested by a slow onset to the symptoms, or by a history of primary postero-lateral protrusion.

4. *Signs of irreducibility.* If the trunk movements other than flexion hurt in the limb instead of the back, or side-flexion towards the painful side hurts in the back, success in manipulation is unlikely.

5. *Compression phenomenon.* If the pain comes on after the patient has stood some minutes and disappears as soon as he sits or lies, only arthrodesis avails.

6. *Post-laminectomy.* Traction is often successful in recurrence after laminectomy, but manipulation hardly ever succeeds.

TRACTION

The main indication for traction is a pulpy protrusion, or one that has unexpectedly defied manipulation. The treatment lasts ½-1 hour daily and a 40-80 kg. distracting force is used.

Contra-indications to traction

1. Lumbago with twinges. Such violent pain is often produced when the traction is abated that it takes several hours to get the patient off the couch.

2. Immediately after manipulation has failed, no benefit is likely, whereas traction carried out the next day may well initiate improvement.

3. Such respiratory or heart disease that the patient cannot bear the thoracic harness.

EPIDURAL LOCAL ANAESTHESIA

An extradural injection of 50 c.c. of 0·5% procaine is made through a lumbar puncture needle introduced *via* the sacral hiatus. It is a simple out-patient procedure, which I have carried out 20,000 times.

The indications for injection are as follows:

1. *Acute lumbago.* If manipulation proves too painful, this is the treatment of choice. Though, of course, it does not alter the displacement it destroys all pain for 90 minutes, since the protrusion now presses, *via* the posterior ligament, on a dural membrane rendered insensitive. During this time, the patient moves freely, and often initiates spontaneous reduction.

2. *Sciatica for too long.* Sciatica ought to get well of itself in a year if the patient is under 60 years old. If spontaneous recovery is delayed, 1-3 injections at about fortnightly intervals are often curative.

3. *Manipulation and traction have failed.* Clearly the presence of the displacement is unavoidable (laminectomy apart) and the best that can be done is to mitigate the pain by local desensitization.

4. *Backache.* If this is present at night or on waking only, or examination shows that the lumbar movements are only slightly uncomfortable, the injection is often curative.

5. *Referred coccygodynia.* This is required in any case for diagnostic purposes, and usually has a therapeutic effect as well.

Contra-indications to injection

1. Local sepsis.
2. Sensitivity to procaine.
3. Post-laminectomy. The channel along which the injection must flow is blocked with fibrous scar tissue.

OPERATION

Indications for laminectomy

Fourth sacral palsy (urgent).
Intractable severe pain.
Gross lumbar deformity with sciatica in a young patient.
Adherent nerve root.
Repeated crippling attacks.

Indications for arthrodesis

Compression phenomena.
Spondylolisthesis.
Repeated frequent attacks of internal derangement.

N.B. The disc must be in place at the time when the fusion is performed.

STATISTICAL SURVEY

In 1953 I saw 538 cases of lumbar disc lesions in private practice. Of these, 370 have either come to see me again in a subsequent year (8%) or have answered a postal questionnaire.

Total confirmed = 370

Causing pain in back	46·0%
Causing root pain	54·0%
Spondylolisthesis present	3·9%

PAIN IN BACK

Treated by Manipulation, 58·0%

Well in 1 session	49·0%
Well in 2 sessions	11·3%
Well in 3 sessions	6·1%
Well in 4 sessions	4·1%
Better in 1 session	12·3%
Better in 2 sessions	3·1%
Better in 3 sessions	2·0%
Same in 1 session	4·1%
Same in 2 sessions	1·0%
Same in 4 sessions	2·0%
Worse in 1 session	2·0%
Worse in 2 sessions	1·0%
Worse in 3 sessions	2·0%

*Recurred within 3 years—44·0% of those pain-free after manipulation.**

Treated by Traction, 13·0% (daily for 1-4 weeks)

Well after Traction 38·0% (12·5% in 1 week, 87·5% in 2 weeks).

Better after Traction 19·3% (50·0% in 2 weeks, 50·0% in 3 weeks).

Same after Traction 38·0% (5·0% in 1 week, 12·5% in 2 weeks, 25·0% in 3 weeks, 12·5% in 4 weeks).

Worse after Traction 4·7% (in 2 weeks—a single case).

*Recurred within 3 years—20·0% of those pain-free after course of Traction.**

Treated by Epidural Local Anaesthesia, 17·0%

Well	43·0%
Better	25·0%
Same (after initial relief)	22·0%
Worse	10·0%

Recurred within 3 years—21·5% of those well after injection. *

SCIATICA

Treated by Manipulation, 31·0%

Well in 1 session	33·5%
Well in 2 sessions	11·5%
Well in 3 sessions	6·5%
Well in 4 sessions	6·5%
Better in 1 session	16·5%
Better in 2 sessions	3·5%
Better in 3 sessions	3·5%
Better in 4 sessions	1·5%
Same in 1 session	10·0%
Same in 2 sessions	1·5%
Same in 4 sessions	1·5%
Worse in 1 session	1·5%
Worse in 2 sessions	1·5%

Recurred within 3 years—40·0% of those pain-free after manipulation. *

Treated by Traction, 25·0%

Well after Traction 56·0% (43·0% in 1 week, 25·0% in 2 weeks, 10·5% in 3 weeks, 21·5% in 4 weeks).

Better after Traction 24·0% (34·0% in 1 week, 16·0% in 2 weeks, 25·0% in 3 weeks, 25·0% in 4 weeks).

Same after Traction 12·0% (50·0% in 2 weeks, 33·0% in 3 weeks, 17·0% in 4 weeks).

Worse after Traction 8·0% (50·0% worse after 1 week, 50·0% worse after 3 weeks).

Recurred within 3 years—20·0% of those well after course of Traction. *

Treated by Epidural Local Anaesthesia, 26·0%

Well	66·5%
Better	13·5%
Same	17·5%
Worse	3·5%

Recurred within 3 years—18·0% of those well after the injection. *

Treated by Laminectomy, 3·0% (i.e. 1% of the total number of patients.

REFERENCE

Pringle, B. Trans. Assoc. Industr. Med. Offrs., 1956, p. 127.

* Includes minor recurrences which recovered without treatment.