SCOLIOSIS

Presenter: James M. Cox, DC, DACBR, FICC, FIANM(Hon), HonDLitt
Date: April 23, 2020


- Adolescent idiopathic scoliosis (AIS) prevalence is between 2% and 3% in the general population, with almost 10% of patients requiring some form of treatment and up to 0.1% undergoing surgery.
- The cosmetic aspect of the deformity is the biggest concern to the patient and is often accompanied by psychosocial distress.
- In addition, severe curves can cause cardiopulmonary distress.


- A systematic review of clinical trials of spinal manipulative therapy for adolescent idiopathic scoliosis developed for PubMed, CINHAL, and CENTRAL databases showed there is currently insufficient evidence to establish whether spinal manipulative therapy may be beneficial for adolescent idiopathic scoliosis. The results of the included studies suggest that spinal manipulative therapy may be a promising treatment, but these studies were all at substantial risk of bias. Further high-quality studies are warranted to conclusively determine if spinal manipulative therapy may be effective in the management of adolescent idiopathic scoliosis.


- Few papers verifying the efficacy of manual therapy, chiropractic and osteopathy in the treatment of idiopathic scoliosis have been published to date.
- The majority are experimental studies with poor methodology or observational case studies.
- At present, the efficacy of non-specific manual therapy in the treatment of patients with idiopathic scoliosis cannot be reliably evaluated.
- It is necessary to conduct further research based on appropriate methods (prospective, randomised, controlled studies) in order to reliably assess the usefulness of non-specific manual therapy in the treatment of idiopathic scoliosis.

- During the past decade, several studies have demonstrated that the natural history of adolescent idiopathic scoliosis can be positively affected by nonoperative treatment, especially bracing.
- Other forms of conservative treatment, such as chiropractic or osteopathic manipulation, acupuncture, exercise or other manual treatments, or diet and nutrition, have not yet been proven to be effective in controlling spinal deformity progression.
- Observation is appropriate treatment for small curves
- Indications for brace treatment are a growing child presenting with a curve of 25°-40° or a curve less than 25° with documented progression.
- Curves of 20°-25° in patients with pronounced skeletal immaturity should also be treated.


- Conservative care in general may be a helpful option in the care of adult deformity, but evidence for this is lacking. Unfortunately, no treatment option within conservative care has support within the literature as a preferred solution. Basic clinical research at any level would be helpful to further clarify the options.


- when the Cobb angle measurements fall below the 25-30 degrees range, conservative manual therapies for scoliosis treatment have been increasingly investigated in recent years. In this case series, we present 3 specific cases of scoliosis
  1. left thoracic, idiopathic scoliosis after Harrington rod instrumentation with 35 degree thoracic dextroscoliosis
  2. left thoracic 22 degree scoliosis with Scheuermann's Kyphosis.
  3. 37 degree idiopathic thoracic levoscoliosis.
- Treatment: novel active rehabilitation program for varying lengths of time, including spinal manipulation and a patented external head and body weighting system.
- all 3 cases showed reduction in Cobb angle of 13 degrees, 8 degrees, and 16 degrees over a maximum of 12 weeks of treatment.


- Two patients suffering from progressive lumbar scoliosis and chronic back pain. Treatment: diversified chiropractic manipulative therapy in the prone and side-posture positions. Gentle manual intersegmental mobilization, stretching and muscle massage techniques were also applied.
- both cases had subjective relief of back pain.
- CONCLUSIONS: Diversified-type CMT has a favorable effect on acute back pain when used palliatively. The procedure may also have a favorable long term effect of preventing recurrence of back pain and on retarding curve progression when used routinely 1-2 times per month.

- Systematic research in Medline, Embase, Cinhal, Cochrane Library, Pedro with the following terms: idiopathic scoliosis combined with chiropractic; manipulation; mobilization; manual therapy; massage; osteopathy; and therapeutic manipulation yielded 145 texts, but only three papers were relevant to our study.
- CONCLUSION: The lack of any kind of serious scientific data does not allow us to draw any conclusion on the efficacy of manual therapy as an efficacious technique for the treatment of Adolescent idiopathic scoliosis.


- A 15-year-old girl with right thoracic scoliosis received regular rehabilitation and brace treatment for 4 years, but the curvature of the thoracic spine still progressed. The Cobb angle was 46 degrees and surgical intervention was suggested.
- INTERVENTION AND OUTCOME: This patient was treated with spinal manipulation two times per week for 6 weeks at the outset, which was gradually decreased in frequency. After 18 months of consecutive treatment, follow-up radiographs and examinations were conducted. The Cobb angle decreased by 16 degrees. Meanwhile, the patient’s lower backache eased and there was also an improvement in defecation frequency, which had been problematic.
- CONCLUSIONS: Chiropractic treatment was associated with a reduction in the degree of curvature of adolescent idiopathic scoliosis in this case, after half a year of conventional medical treatment had failed to stop curve progression. This suggests that in at least some severe and progressive cases of scoliosis, chiropractic treatment including spinal manipulation may decrease the need for surgery.


- There is no scientific evidence that spinal manipulative therapy (SMT) has any effect on curve progression in patients with idiopathic scoliosis; however, there is clinical evidence that SMT is a useful treatment for those patients who have an associated mechanical backache.


- neurological dysfunction and impairment in sensory processing could induce a body schema distortion.
- Conventional orthopaedic treatment of bracing or surgical treatment results suggest that alteration in body representation should be investigated in future studies.

- Presented is a case report of chiropractic manipulative therapy and transcutaneous neuromuscular stimulation utilized in the treatment of progressive adolescent idiopathic scoliosis. The curvature was shown to be progressing at the rate of 1.0 degrees/month for the 9 previous months.
- The patient’s curvature was successfully stopped at 27 degrees and reversed to 17 degrees in the first 3 months of care. After 9 months of nighttime stimulation, the curvature was recorded at 23 degrees.


- A sample of 165 chiropractors received a survey instrument for a hypothetical typical 12-year-old girl with adolescent idiopathic scoliosis.
- RESULTS: The response rate was 69% (114/165). In general, the respondents would provide 6 months of “intensive” chiropractic therapy, then follow the patient for 4 years (near skeletal maturity).
- 82% of respondents named diversified technique as their primary adjustive treatment, 87% would use exercise, and 30% would use electric muscle stimulation as an adjunct to manual therapy.
- CONCLUSION: Most surveyed chiropractors would use similar methods (frequency and length of treatment, manipulation technique, and exercise) in the treatment of patients with adolescent idiopathic scoliosis.

Reference
On pages 333-339 of the text LOW BACK PAIN: MECHANISM, DIAGNOSIS, TREATMENT are found the following facts on scoliosis. The references are cited in the textbook for you.

IN UNILATERAL CLAUDICATION, 50% of the patients have a degenerative lumbar scoliosis, with central stenosis at the apex of the curve and an asymmetric distal root canal stenosis (324)
J. Cox comment

• I find scoliotic degenerative scoliosis in late middle aged and elderly patients to be resistant to vector or forceful adjustments.
• I use Cox® F/D and decompression spinal manipulation as demonstrated in this presentation webinar.

When sciatica is provoked by sitting,

• surgery shows better outcome than conservative care; however, at one year the outcomes of surgery and conservative care are similar. (326)

• Other than higher satisfaction with management, no significant differences in health related quality of life were found between patients treated with a brace and patients treated surgically for scoliosis.
• Gender, curve type, and curve size had no relevant effect on health related quality of life. (328)

• The most effective form of scoliosis care with the least side effects is yet to be determined. (331)

- Scoliosis discs show degeneration of the collagen lamellae of the annulus and proteoglycan abnormality

Buttermann GR. Pain disability correlated with disc degeneration via magnetic resonance imaging in scoliosis patients. Eur Spine J 2008;17(2):240-9

- Adult scoliosis patients show discogenic changes as part of their pain production

Weiss et al, ref. 339-340

- At this time, there is no substantial evidence in medicine to support surgery as a treatment for scoliosis
- For degenerative scoliosis, a study of 317 patients showed 147 (46%) were managed surgically and had significantly less back pain and disability and improved health status compared to non operated patients at 2 year follow up. Compared to non operative care, surgery can offer significant improvement of back pain for adults with scoliosis. Ref 348
- Bracing versus observation was studied in 106 patients, 41 with Boston brace and 65 observed. Follow up 16 years later showed no braced patient went on to surgery, whereas 6 patients in the observation group required surgery in adolescence, compared with none at maturity. Ref. 387

LATERAL ELECTRICAL SURFACE STIMULATION

- ScoliTron: a form of night time stimulation for treatment of scoliotic curves exceeding 20 degrees that were increasing more than 1 degree a month or 5 degrees in 6 months.
- Our clinic used it in the 1980s with success but negative publicity stopped its use in the late 1980s
- Kowalski has used it in Poland from 2003-8 on 450 children and youth exhibiting progressive spine AIS via Cobb angle. 2 and 9 hour stimulation via LESS for a 24 month period. 2 hour results were similar to 9 hour.

**TO DISTINGUISH FLEXIBLE AND RIGID LUMBAR CURVE FROM MRI TEXTURE ANALYSIS IN ADOLESCENT IDIOPATHIC SCOLIOSIS**

**SOME POSTURAL MUSCLE SUCH AS THE SPINAL ERECTOR AND THE PSOAS MAJOR ARE MORE LIKELY TO REFLECT THE CURVE FLEXIBILITY OF A SCOLIOTIC PARTICIPANT.**


**SARCOGENIA COMPLICATIONS WERE NOTED IN 16% OF LUMBAR SPINE CANAL STENOSIS PATIENTS AND 36.6%, OF DEGENERATIVE LUMBAR SCOLIOSIS PATIENTS.**

**DECREASES IN TRUNK MUSCLE MASS WERE ALSO ASSOCIATED WITH OSTEOPOROSIS.**


**THE SPINAL FLEXIBILITY IN THE PRONE POSITION IS THE CLOSEST TO AND MOST CORRELATED WITH THE INITIAL IN-ORTHOSIS CORRECTION AMONG THE 4 STUDIED POSITIONS.**

**THE PRONE POSITION COULD BE AN EFFECTIVE METHOD TO PREDICT THE INITIAL EFFECT OF ORTHOTIC TREATMENT ON THE PATIENTS WITH AIS.**


**SERIOUS ADVERSE EVENTS (SAE) ARE REPORTED IN 26% OF 105 ADULT SYMPTOMATIC LUMBAR SCOLIOSIS (ASLS) PATIENTS UNDER NONOPERATIVE CARE.**

**MAJOR JOINT ARTHRITIS, CERVICAL MYELOPATHY/RADICULOPATHY, ROTATOR CUFF DISEASE, GASTROINTESTINAL, AND GENITOURINARY EVENTS WERE THE TOP DIAGNOSTIC CATEGORIES OF SAES.**

**FOUR OF THE 42 SAES WERE DIRECTLY RELATED TO THE PATIENT'S SPINAL DEFORMITY, NAMELY SIDE EFFECTS OF MEDICATIONS (NON-STEROIDAL ANTI-INFLAMMATORY DRUG).**

**ADULT SCOLIOSIS RATES HAVE BEEN ESTIMATED TO EXCEED 50% IN THE POPULATION OF THOSE OVER 60 YEARS OF AGE.**

**THE NATURAL HISTORY OF THESE PATIENTS IS TYPICALLY ONE OF GRADUAL FUNCTIONAL DECLINE, CONTINUED PAIN, AND DETERIORATION IN HEALTH STATUS.**

**PREVIOUS STUDIES HAVE SUGGESTED THAT NONOPERATIVE MODALITIES ARE NOT EFFECTIVE IN IMPROVING PATIENT-REPORTED OUTCOMES (PROS) IN ADULT SYMPTOMATIC LUMBAR SCOLIOSIS (ASLS).**

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Scoliosis corrective exercises

- Taken from
  - Berdishevsky et al. Scoliosis and Spinal Disorders 2016. 11:20
  - Physiotherapy scoliosis-specific exercises – a comprehensive review of seven major schools
  - Society of Scoliosis Orthopedic Rehabilitation and Treatment (SOSORT) directs principles of scoliosis treatment and uses the term PHYSIOTHERAPY SCOLIOSIS SPECIFIC EXERCISES (PSSE) for all schools of scoliosis treatment

7 SCHOOLS OF PHYSIOTHERAPY SCOLIOSIS SPECIFIC EXERCISES (PSSE) ARE SHOWN IN THIS PAPER. I STRESS LYON, SCHROTH, SEAS AND SIDE SHIFT IN THIS REPORT

- LYONS FROM FRANCE
- SCHROTH FROM GERMANY
- SEAS FROM ITALY
- BARCELONA SCOLIOSIS PHYSICAL THERAPY SCHOOL APPROACH FROM SPAIN
- DOBOMED APPROACH FROM POLAND
- SIDE SHIFT APPROACH FROM UK
- FUNCTIONAL INDIVIDUAL THERAPY OF SCOLIOSIS APPROACH FROM POLAND

LYON

- Lyon method combines PHYSIOTHERAPY SCOLIOSIS SPECIFIC EXERCISES (PSSE) with the Lyon brace and casting
- Perform specific PSSE for awareness of scoliosis correction with camera

ATTAIN KYPHOSIS, ACTIVE THORACIC SHIFT
98% of scoliotic curves under 45 degrees escape surgery if Lyons brace is used.

Schroth method (Germany)

- Developed by Katharina Schroth in 1919 to treat her scoliosis
- Schroth centers treat 3,000 scoliosis cases annually
- 5 Principles of the Schroth Method of scoliosis treatment
  1. Autoelongation
  2. Deflection
  3. Rotation
  4. Rotational breathing
  5. Stabilization


- The overall effect size of the Schroth exercise is high (G = 0.724). In addition, Schroth exercise may be more beneficial for scoliosis patients who have a 15 to 30° Cobb’s angle than for those with a greater than 30° Cobb’s angle.
- Patients should practice the exercise for at least one month to have a better effect. Thus, therapists should consider patients’ initial curve status and exercise duration before prescribing the Schroth exercise program.
- Core muscle strength was most influenced, and structural deformity also changed after the Schroth exercise.
- The Schroth exercise is a recommended treatment method for scoliosis patients.

Schroth lumbar mobilization. Please consider our Cox® F/D decompression spinal manipulation for this.
Schroth PHYSIOTHERAPY SCOLIOSIS SPECIFIC EXERCISES (PSSE) continued

- THE SHORT TERM OF SCHROTH PSSE INTERVENTION ADDED TO STANDARD CARE PROVIDED A LARGE BENEFIT AS COMPARED TO STANDARD CARE ALONE

SEAS

- SEAS IS A SCOLIOSIS SPECIFIC ACTIVE SELF CORRECTION TECHNIQUE PERFORMED WITHOUT ANY EXTERNAL AIDS AND INCORPORATED INTO FUNCTIONAL EXERCISES.

- TRAINS THE NEUROMOTOR SYSTEM TO ACTIVATE A REFLEX OF SELF CORRECTION DURING ADL.

- GOAL IS TO INCREASE SPINAL STABILITY. ALSO DEVELOP POSTURAL BALANCE, PRESERVE SAGITTAL SPINAL CURVES, HALT AND/OR REVERSE THE SCOLIOSIS

- IT CAN BE USED IN THOSE WEARING CORRECTIVE BRACES
**THE EFFECTIVENESS OF COMPUTER-AIDED BRACE MANUFACTURING FOR SCOLIOSIS CURVE IMPROVEMENT IS CONTROVERSIAL**

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**Fig. 33** Right thoracic curve mobilization in preparation for bracing is aimed at increasing the range of motion of the spine according to the SEAS method.

**Fig. 34** SEAS exercise with brace. The patient is in a relaxed position (a) and then lifts the trunk away from the sternal part of the brace to increase the thoracic kyphosis (b). Similarly, the patient is in a relaxed standing position (c) and moves the abdomen posteriorly away from the abdominal part of the brace to increase the force on the lumbar pressure pad (d).

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**Fig. 35** SEAS mobilization and flexibility exercises of the spine to improve joint mobility for better posture correction.
SEAS CASE REPORT


The Nordic Maintenance Care Program: Maintenance Care Reduces the Number of Days With Pain in Acute Episodes and Increases the Length of Pain Free Periods for Dysfunctional Patients With Recurrent and Persistent Low Back Pain - A Secondary Analysis of a Pragmatic Randomized Controlled Trial

Andreas Eklund 1, Jan Hagberg 2, Irene Jensen 2, Charlotte Leboeuf-Yde 3, Alice Kongsted 4 5, Peter Lövgren 6, Mattias Jonsson 7, Jakob Petersen-Klingberg 8, Christian Calvert 9, Iben Axén 2

THE NORDIC MAINTENANCE CARE PROGRAM: MAINTENANCE CARE REDUCES THE NUMBER OF DAYS WITH PAIN IN ACUTE EPISODES AND INCREASES THE LENGTH OF PAIN FREE PERIODS FOR DYSFUNCTIONAL PATIENTS WITH RECURRENT AND PERSISTENT LOW BACK PAIN - A SECONDARY ANALYSIS OF A PRAGMATIC RANDOMIZED CONTROLLED TRIAL

A SECONDARY ANALYSIS OF DATA FROM A RANDOMIZED CONTROLLED TRIAL OF PATIENTS (N = 319) SEEKING CHIROPRACTIC CARE FOR RECURRENT OR PERSISTENT LBP USED 52 WEEKLY ESTIMATES OF DAYS WITH BOthersome (ACTIVITY-LIMITING) LBP.

DATA SUPPORT THE USE OF MC IN A STRATIFIED CARE MODEL TARGETING DYSFUNCTIONAL PATIENTS FOR MC. FOR A CAREFULLY SELECTED GROUP OF PATIENTS WITH RECURRENT AND PERSISTENT LBP THE CLINICAL COURSE BECOMES MORE STABLE AND THE NUMBER OF PAIN-FREE WEEKS BETWEEN EPISODES INCREASES WHEN RECEIVING MC. UNDERSTANDING HOW SUBGROUPS OF PATIENTS ARE LIKELY TO BE AFFECTED BY MC MAY HELP ALIGN PATIENTS' AND CLINICIANS' EXPECTATIONS BASED ON REALISTIC OUTCOMES.

SIDE SHIFT (UK)

- DEVELOPED BY MEHTA IN 1984
- 3 TYPES OF SCOLIOSIS SHIFT:
  1. A CURVE CORRECTED BY SHIFTING THE TRUNK BEYOND THE CORONAL MIDLINE TO THE CONTRALATERAL SIDE. THIS IS A FLEXIBLE CURVE
  2. A CURVE THAT CAN BE CORRECTED TO THE MIDLINE. THIS IS A MODERATELY FLEXIBLE CURVE
  3. A CURVE THAT CANNOT CORRECT TO THE MIDLINE. THIS IS AN EXTREMELY RIGID CURVE.

Mehta principle of scoliosis correction

- Remember: that in correcting the body position thru side shift, the body uses muscular forces and connective tissue stretches to increase mobility and re-align soft tissues. This promotes somatosensory integration of the spinal position to a more upright and physiological posture.


- **Side shift therapy** should be considered as an additional treatment for idiopathic scoliosis in adolescents with an initial Cobb angle between 20 and 32 degrees.
- Mehta exercise is equal to bracing in stopping progression.

**Mehta principle**
- Shift the body motion towards the concavity of the curve.
- It incorporates Schroth principles in its application – active overcorrection movements beyond the midline.

**TWO PRINCIPLE MEHTA SIDE SHIFT EXERCISES:**
1. HITCH EXERCISE FOR THORACOLUMBAR CURVES
2. HITCH-SHIFT EXERCISE FOR DOUBLE SCOLIOTIC CURVES

**HITCH MEHTA SIDE SHIFT EXERCISE FOR SINGLE SCOLIOSIS CORRECTION**

- The quadratus lumborum (QL) is expected to contribute to segmental motor control of the lumbar spine to prevent low back pain. It has different layers (anterior [QL-a] and posterior [QL-p] layers), whose functional differences are becoming apparent. However, the difference between the QL-a and QL-p activities during bridge exercises utilized in rehabilitation is unclear.

Change in Regional Activity of the Quadratus Lumborum During Bridge Exercises. Tomoki Oshikawa, Gen Adachi, Hiroshi Akuzawa, Yu Okubo, Koji Kaneko
“Get knowledge of the spine, for this is the requisite for many diseases.”
- Hippocrates

History of Chiropractic - Grassi and Perle
COX® F/D DECOMPRESSION SPINAL MANIPULATION COMPLIMENTS ALL OF THESE EXERCISES

IT INCREASES FLEXIBILITY WHICH MAKES CURVES LESS RIGID AND MORE AMENABLE TO CORRECTION

UNATTENDED LONG-Y AXIS DISTRACTION ALLOWS MEHTA EXERCISES TO BE DONE UNDER DECOMPRESSION WITH RESISTANCE TO THE MUSCLES BEING CONTRACTED SO AS TO MORE EFFECTIVELY STRENGTH MUSCLES ON THE CONVEXITY OF THE SCOLIOSIS. QUADRATUS LUMBOUM, LONGISSIMUS, ILLIHOSTALIS, AND MULTIFIDEE ARE IMPORTANT HERE

COX® MANIPULATION WILL ALSO ALLOW PHYSIOLOGICAL RANGE OF MOTION TO THE MOTION SEGMENTS WHILE INSTITUTING AFFERENTATION.

COX FEELS THIS TO BE A POWERFUL COMBINED TREATMENT FOR SCOLIOSIS. HANDS ON TECHNIC WILL BE DEMONSTRATED

SCOLIOSIS – ADOLESCENT AND OLD ESTABLISHED. BOTH ARE TREATED WITH COX® DISTRACTION DECOMPRESSION SPINAL MANIPULATION BUT WITH TOTALLY DIFFERFENT OBJECTIVES. LET'S LOOK!!

34 y/o female had this surgery at age 13 for a 47 degree curve.
13 y/o premenarchal female

THORACOLUMBAR SCOLIOSIS

This 58 year old white female is seen for the chief complaint of low back and pelvic pain. Note that there is a thoracolumbar right scoliosis with relatively good disc space maintenance. There is L3-L4 degenerative disc disease.

• No other treatment has helped with patient except long Y-axis decompression and distraction, Cox® manipulation. We will demonstrate its use.

76 y/o female with BILATERAL LOWER EXTREMITY burning pain for 10 years.

• Note: levoscoliosis with Left L5-S1 facet joint arthrosis and L3-4 advanced disc degeneration and right sided ankylosis

Note dextroscoliosis with Left L5-S1 facet arthrosis

• Remember osteoporosis increases with degenerative scoliosis
• Patient cannot lie on her stomach due to pain
• Treated side lying with long y axis distraction and flexion and/or supine with pelvis on caudal section of the table and long y axis distraction is given while lateral flexion into the right lumbar rotatory scoliosis.
• Side lying, bilateral tetanizing current is applied to the convexities of this spine curve.
• Patient is on 2000 mg of perna canaliculus GLYCOSAMINOGLYCAN a day (Discat Plus)

- To compare clinical effects of spinal leveraging manipulation and medicine for the treatment of degenerative scoliosis in pain and function.
- RESULTS: After treatment, VAS score in manipulation group was (5.38±0.99), (6.36±1.31) in medicine group.
- Cobb angle between manipulation group (16.51±4.89°) and medicine group (19.85±5.03°)
- ODI score between manipulation group (20.20±2.93) and medicine group (26.01±3.11).
- CONCLUSION: Spinal leveraging manipulation for degenerative scoliosis could regulate muscle balance on both side of spine, correct vertebral imbalance, recover normal sequence of spine, reduce and remove oppression and stimulation of nerve root, relieve pain in leg and waist and further improve quality of life.


- FUNCTIONAL OUTCOME OF NON-SURGICAL AND SURGICAL MANAGEMENT FOR DE NOVO DEGENERATIVE LUMBAR SCOLIOSIS AT 10 YEAR FOLLOW UP SHOWED NO SIGNIFICANT DIFFERENCE IN FUNCTIONAL OUTCOME
- NON-SURGICAL MANAGEMENT OF PATIENTS WITH DNDLS MAY LEAD TO ADEQUATE FUNCTIONAL OUTCOME AFTER LONG PERIODS OF TIME, WITH NO CROSSOVER TO SURGERY


- SPINAL IMBALANCE IN DEGENERATIVE DISCS AND LUMBAR SCOLIOSIS IS DUE TO DECREASED THORACIC KYPHOSIS LUMBAR LORDOSIS, WITH SAGITTAL MALALIGNMENT. THIS PROVIDES INSIGHT INTO REASONS FOR LOW QUALITY OF LIFE IN ELDERLY PATIENTS WITH DEGENERATIVE LUMBAR SCOLIOSIS

78 year old female with low back and bilateral leg pain and weakness. DEGENERATIVE LUMBOTHRACO SCOLIOSIS

Dextrorotatory lumbar scoliosis of lumbar spine with levoscoliosis of the thoracic spine. Advanced DDD with vacuum is seen in the lumbar spine with grade III vertebral body rotation. Patients notes loss of height.
Case 142
POST SURGICAL CONTINUED PAIN PATIENT

FBSS, PLEASE CONSIDER OUR SPINAL MANIPULATION TO DECIDE IF IT MAKES SENSE AND CAN HELP YOUR PATIENT. JMC

History
- This case shows the marked change in the spine following decompression laminectomy and fusion of the lumbar spine. This female patient had marked bilateral sciatic pain due to spinal stenosis as shown in Figures 1 to 7. The pain was of the intensity that she could not sleep at night nor perform usual activities of daily living.
Figure 1

- the anteroposterior plain x-ray study showing the scoliosis and discogenic changes responsible for the spinal stenosis and resultant sciatic radiculopathy shown on MRI.

Figure 2

- the sagittal MRI view of the lumbar spine and shows the disc degeneration and posterior multilevel disc protrusion, discogenic spondylosis, and ligamentum flavum hypertrophy causing multilevel spinal stenosis.

Figure 4

- an axial MRI image at the L3-L4 level showing endplate hypertrophy causing bilateral osseoligamentous foraminal stenosis with facet arthrosis and ligamentum flavum hypertrophy resulting in posterior and lateral stenosis of the vertebral and osseoligamentous canals. Hyperintensity within the bilateral facet joints and ligamentum flavi are noted suggesting synovial cyst change.

Figure 5

- another axial L3-L4 image showing endplate hypertrophy bilaterally at the posterolateral vertebral body causing bilateral foraminal stenosis. The facet arthrosis and ligamentum flavum hypertrophy contribute to the stenosis by narrowing the posterior vertebral and foraminal areas.
the bilateral hip replacements preceding the onset of the stenotic symptoms. This did restrict the distraction force that could be applied to this spine when attempting to relieve the stenosis lower extremity generated pain.

Treatment

- Flexion distraction decompression gave her some early relief, but within two years the pain progressed, and epidural steroid injections were given without relief. A pain control electrical stimulator was implanted into her spinal cord without relief.

- With no help from conservative means, the patient sought care at the Cleveland Clinic where images in figures 8 and 9 show the spine post-surgically. It is a remarkable correction of the scoliosis. This decompressive surgery gave the patient relief of her sciatic pain although back pain persisted.

Figure 7

• the plain sagittal xray showing the increased disc space height and decompression laminectomy with spinal bolt and rod fusion as well as intertransverse bone fusion. The restoration of disc height is remarkable.

Figure 8

• the rod and bolt fusion with the intertransverse process bone fusion.

Figure 9

• Note the decompressive laminectomies at the L2-3, L3-4, and L4-5 levels and straightening of the scoliosis.
Good example of degenerative scoliosis

Treatment includes:
1. Attended long y axis distraction under tolerance testing with contacts at the T10 level progressively caudal to the L5-S1 segment.
2. At relief of 30% or more, unattended long y axis distraction is given.
3. Convex side electrical stimulation is applied during or after distraction manipulation.
4. Mehta and Schroth exercises are given with instruction to do in clinic during distraction spine manipulation and at home with assistance.

Supplementation with Discat Enhanced Chondroitin and Glucosamine Sulfate, B vitamins, Calcium Citrate and if subacute pain Tumeric Root.
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