

C6-C7 Congenital Fusion With Moderate/Severe Triple Curve, Idiopathic Adolescent Scoliosis With Spina Bifida, Klippel Feil, Treated Successfully For 25 Years With Cox® Technic Protocols.

*presented at 2018 Cox® Technic Honors Recertification Course in Philadelphia, PA
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HISTORY

A 48-year-old Caucasian male works busily as an auto mechanic. He commutes to work 60+ minutes each way. He eats healthily and sleeps 5 to 6 hours per night, gets up hourly due to urinate frequently, about every 45-50 minutes without much volume. He presents with scoliosis, webbing on the neck, missing one rib and half of a vertebra, spina bifida, Springel's deformity of the scapula, and a low hair line. He was involved in a neck trauma/car accident 35 years ago. He has left eye-facial asymmetry, and his right thumb is much bigger than left. Hearing loss has been progressive over the past 2-3 years. Occasional torticollis is a problem. He began chiropractic care at age of 5 years. At age of 9, he began with a 5/8" built-in right shoe lift in all of his shoes for a short leg and scoliosis. At the age of 12 years, he was given a Milwaukee Brace to wear for 2-3 years.



Over the past 25 years, he has come once a month for chiropractic care. In 2015, due to increased frequency in urination, he sought medical care and was told that prostate and all organs were within normal limits. The medical consultant evaluated the spine with imaging in 2016 and said symptoms are all from the spine and scoliosis condition. He began to increase his treatments to once every week or two to manage pain. Also, in 2015, his low back pain symptoms began to increase after lifting his mother-in-law after she had fallen. There was no trauma, and the low back pain gradually increased in intensity and frequency. Coincidentally, his commuting increased at that time from a shorter 20 minutes to the present longer 60 minutes each way.

His heart is enlarged by 15% as are his kidneys and appendix also enlarged and rotated to the back as reported by his medical doctor.

He takes medication for acid reflux and high blood pressure. In 2016, his general practitioner gave him hydrocodone (Flexeril) and meloxicam. In spring of 2018, his general practitioner prescribed Oxycontin to manage pain in addition to Flexeril.

CHIEF COMPLAINT

On October 9, 2018, his visual analog scale (0 no pain to 10 worst pain) ratings for pain while taking medications - 1 oxycodone 5-325 in morning and 1 oxycodone 5-325 at lunch as pain dictates – are:

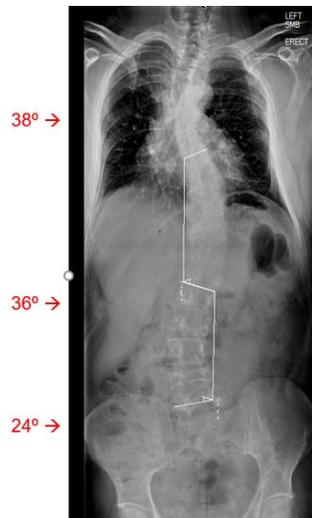
- “8-9” severe right low back pain
- “7-9” right leg pain/numbness to all 5 digits especially sitting in low chair or toilets
- “6-9” neck pains on average which are aggravated with straining, bending and twisting, lifting or turning the head. Neck pain affects his vision. Low tone and high tone hearing are declining as well.
- “6-7” mid back pains on average

EXAMINATION

This patient stands 5’4” and weighs 185 pounds for a BMI of 31.6. He has a history of scoliosis and hypertension. At the October 9, 2018, examination, his abnormal orthopedic and neurological findings were: a positive Dejerine’s, positive straight leg raise for low back pain on the right at 65°, positive Bechterew’s for right leg pain, positive and very painful and limited lumbar ranges of motion for low back pain, positive severe pain on palpation and percussion of the lumbar spine and right sacroiliac joint, positive and mild pain on palpation and percussion of the cervical spine, moderate muscle spasm in the entire paraspinal/rhomboid/trapezius, deep tendon reflexes are “2.” Normal findings are elicited for sensation to light touch in upper extremities, muscle strength in all upper extremities (deltoids, biceps, triceps, wrist extension, and flexion and finger extension).

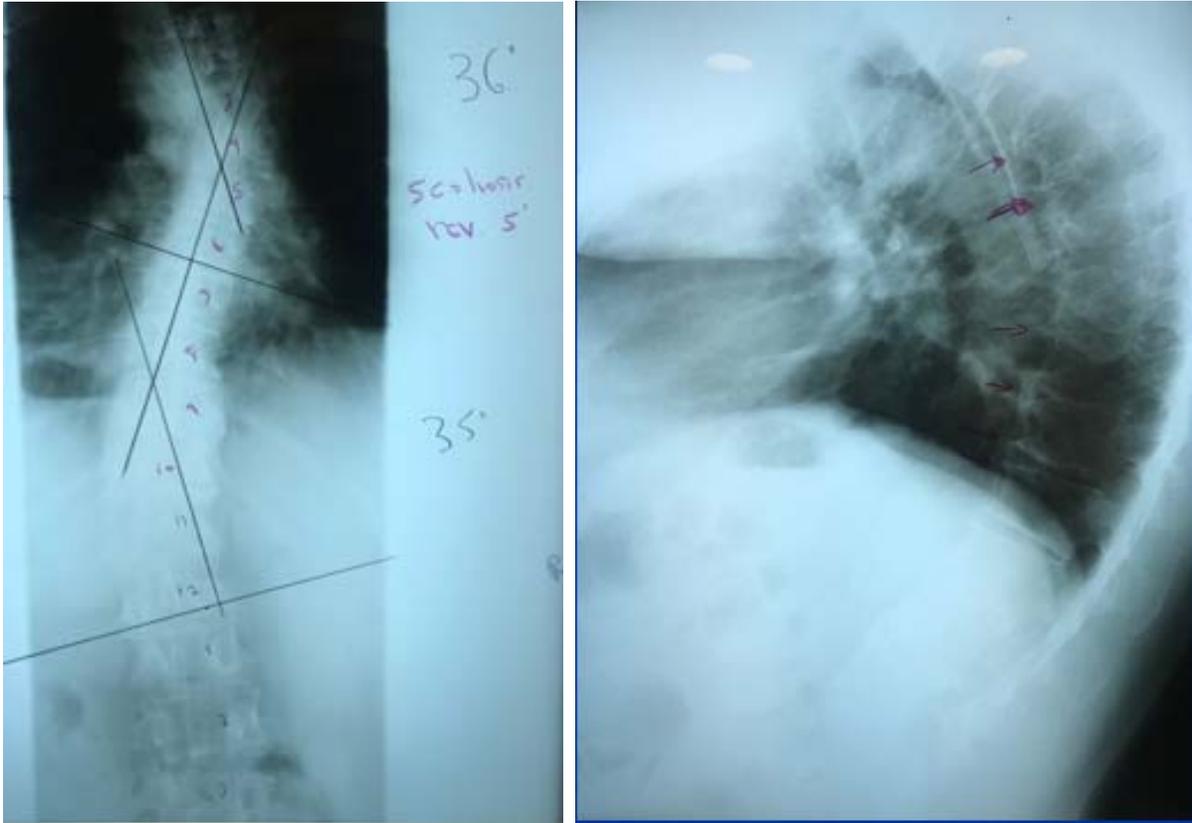
IMAGING

MRI without contrast is done on 12/6/16 and showed the following:



Congenital Fusion of C6-C7

X-Ray Study of the lumbosacral spine on October 2, 2016, shows the following:



IMPRESSION:

- Lumbarization of S1
- Mild degenerative disc disease and mild degenerative joint disease with osteophyte T12-L1 L2-L3, L3-L4
- Moderate levocurvature (rotoscoliosis) of lumbar spine, scoliosis
- Facet arthropathy at L1-L4.
- L5-S1 hypoplastic left lamina and facet
- Dysraphism of the upper sacral region – Spinal Bifida (section of the neural tube that will become the spine and spinal cord did not close completely)
- IMPRESSION: ABNORMAL MRI OF CERVICAL SPINE
- At C4-C5 there is a posterior right lateral disc protrusion and osteophyte complex resulting in severe right and moderate left neuronal foraminal narrowing.
- At C5-C6 there is moderate biforaminal narrowing due to facet hypertrophy.
- There is a Klippel-Feil deformity with a congenital fusion of the C6-C7 vertebral bodies and a posterior hemivertebrae at the T6 level.
- Scoliosis with bowing of the upper thoracic region to the right of midline

TREATMENT PLAN

He is asked to drink 64 plus ounces of water a day to keep discs hydrated. He is recommended to take nutritional supplements: Discat Plus Enhanced (disc nutrition), Formula 1 (daily multivitamin), and Disc and Joint Pain Relief Complex (curcumin, turmeric, black pepper). He is suggested to do inversion therapy three times a week for 5 minutes each time. He is to apply ice for 20 minutes on and 20 minutes off two to 4 times a day. He is scheduled for treatment twice a week in the office.

TREATMENT

Figure 1



Figure 2

The patient lies supine on a hot pack for 10 minutes prior to treatment. Cox® Protocol I (gentle stretching of specific spinal segments to open the canal space, drop intradiscal pressure and gap facets) is applied to the lumbar spine with large dutchman (half) roll under L2 with contact hand on T11. (See Figure 1.) Automated long y-axis with a 2.5" distance set with ankle cuffs on is also done for 10 minutes. Then, Cox®

Protocol I on the thoracic spine with automated long-y axis at 2.5" with ankle cuffs on is done with gentle PA thrusts delivered on the long-y pull when the facets are gapped. (See Figure 2.) Finally, Cox® Protocol I on the cervical spine is delivered with a hand contact on the base of the occipital while gentle long-y axis at a 2.5" travel is set automated. Each treatment is finished with foramen magnum pump. SI joints are adjusted on a drop table and with Activator. Blocks are placed under the SI joints while electrical stimulation and ice are applied to the spine then electrical stimulation with heat are applied to the right GOIC (Gemelli Obturator Internus Complex).

OUTCOME / Current Status

In April 2019, the patient went back to the orthopedic surgeon at West Virginia University whom he had seen in the past for updated imaging. Newest MRIs and X-rays were performed on April 17, 2019.

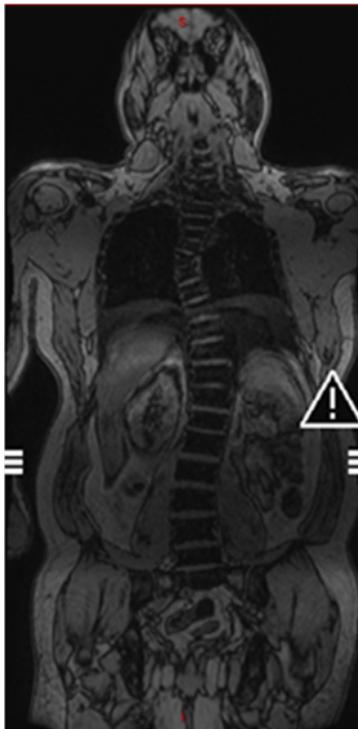


Figure 3

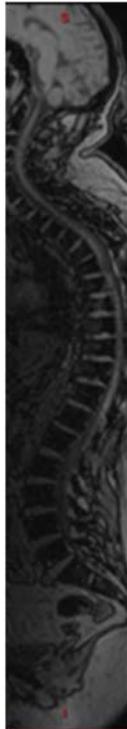


Figure 4



Figure 5

Thoracic MRI showed a "T6-T7 Central to right eccentric osteophytic disc protrusion that abuts the anterior dura but does not cause any significant spinal stenosis." Also, the radiologist reported a "prominent kyphotic deformity noted at T4-5-6 level." (See Figure 5.) Thoracic standing X-rays performed on April 17, 2019, showed a Cobb angle of 28 degrees in the upper thoracic. The lower thoracic and upper lumbar was a Cobb angle of 28 degrees. His curvatures are reduced as well. The orthopedic surgeon at WVU said "all discs look really good in the spine, except for T6-T7." She added that she was "amazed that there are no herniations in the cervical and lumbar spine." The cervical and lumbar spine MRI images were "normal." (See Figures 6 and 7.)

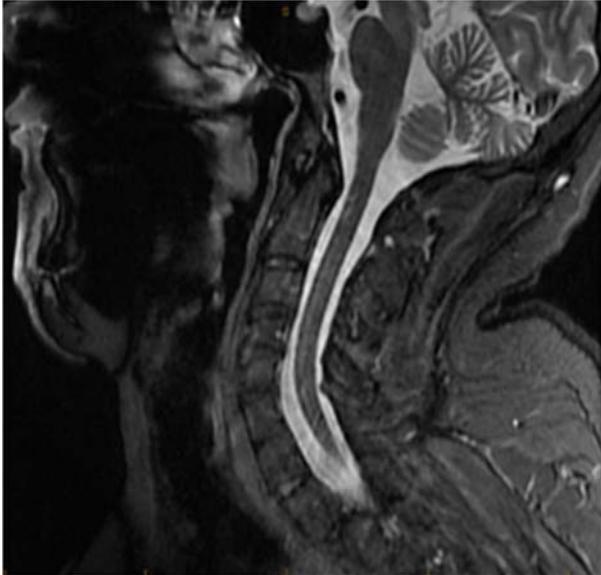


Figure 6



Figure 7

The doctors and interns repeatedly asked him how in the world his discs could be this good with having this degree of severe scoliosis and all the other conditions. My patient told them it was due to chiropractic care with the Cox® Technic spinal manipulation and decompression for over 25 years.

The patient is treated two times a week for maintenance/therapeutic care with Protocol 2 applied to the lumbar, thoracic and cervical spine with the thoracic strap (per Dr. Cox's recommendation after this case was presented at the Philadelphia course) applied to his mid-thoracic. The thoracic strap has given the patient improved relief and increase range of motion. Our goals with this patient are to keep his spine moving and decompressed, manage his pain flare-ups due to his work as a mechanic, keep his discs hydrated, prevent or slow disc dessication/bulges, maintain core strength, and, above all, avert spine surgery.

The patient is very happy that he has gone 25 years without surgery and hopes to delay surgery for a long time even though his conditions are quite severe and advanced.

DISCUSSION

This complex case involving so many systems of the body may be intimidating yet quite satisfying for both patient and doctor. There is an open and on-going discussion of what care works, what issues are current, and what approaches may help control the issues' influence on this man's life. It's been quite rewarding to work with him. He understands his condition and wants to incorporate our conservative approaches in his healthcare plan.

In the use of bracing for his scoliosis, there is some controversy in the medical literature as to its benefit. Bracing's use may not be helpful in scoliosis cases. There is no difference in outcome of bracing or not bracing stable and moderate curves so far as quality of life or curve size. (1) There is very low-quality evidence in favor of using braces, making generalization very difficult. (2)



Klippel Feil Syndrome is a congenital fusion of cervical vertebrae due to failure of normal segmentation of the cervical vertebrae/somite between 3rd and 8th week of fetal development (rather than a secondary fusion). It is inherited as an autosomal dominant or autosomal recessive trait. Common traits include a short neck, low hairline at the back of the head, and restricted mobility of the upper spine. Its incidence is 1 in 42,000 births; more often in females. The autosomal dominant inheritance leads to C2-C3 fusion while the autosomal recessive leads to C5-C6 fusion. Patients with upper cervical spine involvement tend to present at an earlier age than those with lower cervical spine involvement. Rotational loss and lateral banding are usually more pronounced than loss of flexion and extension because latter movements take place mostly between occiput and atlas. Webbing of soft tissues on each side of the neck (extending from mastoid process to acromion of shoulders) - "Pterygium colli" – is common. Other conditions that tend to be present with Klippel Feil are torticollis due to contracture of sternocleidomastoid muscle or bony abnormalities, facial asymmetry, Sprengel deformity resulting in a high scapula, scoliosis and/or kyphosis. The musculoskeletal system is affected with cervical ribs, congenital fusion of ribs, abnormal costovertebral joints, syndactyly, hypoplastic thumb, supernumerary digits, hypoplasia of pectoralis major, hemiatrophy of upper or lower limbs, CTEV, sacral agenesis. The urinary tract abnormalities may include agenesis of kidney, horseshoe kidney, hydronephrosis, tubular ectasia, renal ectopia, double collecting system. The cardiovascular system may also have issues of VSD, PDA, coarctation of aorta, patent foramen ovale. Deafness due to absence of auditory canal and microtia may occur. Synkinesia – involuntary paired movements of the hand (mirror movements) – may be present. Neurologic deficits – facial nerve palsy, rectus muscle palsy of eye, cleft palate, etc. – are common along with Feil's Triad, a low posterior hair line and short neck, limitation of head and neck movements /decreased range of motion in cervical spine. (3)

Kruse and Cox wrote of a case of Klippel Feil and adjacent segment disease treated with flexion distraction and decompression manipulation that resulted in significant progress regarding the severity and frequency of his pain and his ability to perform his activities of daily living. (4) Cox reports on the treatment of a Klippel Feil Fusion pattern 3 he helped using gentle Cox Technic to relieve pain. (5)

More research with larger patient group study is necessary to continue to show significant improvement, stabilization or reduction in degeneration with full spine Cox® Technic decompression flexion/distraction and congenital cervical fusion, moderate/severe triple curvature scoliosis that develop with Klippel Feil.

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