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Correction of Cervical Extension Fixations and a Comparison of Methodology

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Cervical extension fixations can be identified with motion x-ray analysis and motion palpation methods. The x-ray method would be an extension and neutral lateral cervical view. The motion palpation procedure would be variable according to the technique used. It could be verified in the seated, supine or prone positions.

To possess extension at a spinal joint, there must be a capability of P-to-A glide, or motion of the superior vertebra upon the inferior vertebra. I test this capacity usually in the supine and prone positions.

Symptoms arising from extension fixations are numerous. Examples of symptoms encountered are:

1. For C-2/C-3 extension restrictions:

These can cause increased reactive compensatory hyperextension at the C-1/C-2 level above, or at the C-4/C-5 and C-5/C-6 levels below. This could result in neck pain, headaches, upper-extremity radicular symptoms, and upper thoracic complaints. Other spinal levels also can compensate by hyperextending to make up for what C-2/C-3 does not do. It is not unusual to find the L-5/S-1 region hyperextending the chain of events of sacral counternutation and AS ilium fixations developing. From that point, one can anticipate the possibility of groin, hamstring and anterior knee complaints.

2. For C-4/C-5, C-5/C-6 extension restrictions:

1. These can cause upper cervical hyperextension reactions (compensations) and headaches.
2. Lower cervical/upper thoracic pain.
3. Upper-extremity radicular complaints.

In my practice evaluations of extension fixations, I use prone and supine procedures. The techniques utilized in correcting extension restrictions fall into five categories:

1. Manual Adjusting - With manual adjusting, there must be a coupling of rotation and/or lateral flexion with the procedure. For example, C-2 (a very common site of extension restriction) often presents with rotation and lateral flexion restriction. During the correction for rotation and/or lateral flexion restriction, a P-to-A flick of the hand thrust simultaneous with the rotation thrust will correct for extension loss. Other most common levels of extension loss are C-6/C-7 and C-7/T-1.

Gonstead technique is most famous and effective for such corrections, calling the problem "posteriority corrections." In Gonstead technique, there is a P-to-A component to the thrust, lacking in most other techniques. Unfortunately, not all adjusters possess the physical and manual capabilities to fulfill the requirements of P-to-A or extension fixation corrections. The component of cervical extension restriction correction (as well as in the thoracic or lumbar spine) can be vital to recovery from adverse symptoms. Dr. Gonstead realized this and concentrated on P-to-A adjusting. In that same tradition, the principle is most important. P-to-A adjusting (extension adjusting) can reduce "nerve pressure," and allow more normalization to posture. Flexion deformity means that one is locked into flexion and cannot extend, being flexed or bent forward in posture - one is slumped in posture. The problem is extension restriction. This occurs at all levels of the spine, but this article is dedicated to the cervical spine. If one is not a capable or physically "structured" individual, capable of inducing P-to-A forces with the natural endowments of the wrists and hands; then other methods of correction have to be considered.

Before I review alternatives to manual adjusting, it is appropriate to consider some contraindications to manual adjusting:

1. osteoporosis
2. extreme age
3. early age
4. inflammatory conditions
5. others

Four technique approaches can be utilized as alternatives to manual adjusting:

1. **Single Thrust Instruments** - such as Activator-type instruments.
2. **Manual Oscillatory Techniques** - I have found these to be ineffective, for the most part, in the cervical spine. In fact, I have found them to be exacerbating when utilized in acute or inflammatory disorders.
3. **Instrument Oscillatory Multiple Thrust Procedures** - such as the use of the Arthrostim.
4. **Manual Low-Force Methods** - such as DNFT. I cannot comment on the effectiveness of these techniques because of lack of experience in their use.

In my experience, I have found that younger patients who are healthy and non-inflammatory in nature can better tolerate traditional manual extension adjusting.

Acute cervical conditions, elderly, inflammatory tendencies, etc., may not tolerate manual adjusting well. The use of the Arthrostim can substitute well in these cases. It is an oscillatory instrument that can vary its amplitude, and create a summation of impulses at a lower level of force, sufficient to create needed motion in extension and other ranges of motion. The single-thrust instruments also have the ability to create motion, but their strength is in rotation, not pure P-to-A extension maneuvers. However, they do possess P-to-A correction capacities, if correction contact points are closely adjacent to the spinous process. The multiple thrust unit has a forked attachment, which can attach to bilateral lamina areas and deliver a significant P-to-A force. The after-effects have been noticeable by my inspections with regard to increased P-to-A and

extension motion at previous segmental restricted levels. The Arthrostim works well with normal and contraindicated manual adjustive conditions. Single-thrust instruments do not have the advantage of bilateral contacts and multiple summation repetitions, although they are excellent tools that have been used with excellent results. I have utilized single-thrust instruments and have performed multiple repeated thrusting with them in the cervical spine, creating better motion after-effects than with single thrusts. This led me to the use of the multiple-thrust instrument, which has demonstrated better results.

In conclusion, spinal extension fixations can create significant adverse physical signs. They are usually caused by flexion positions held for long periods of time, or by flexion trauma. Their correction is not pursued by many when located in the cervical spine because of lack of evaluation and effective procedures of manual capabilities. Corrections made in the cervical spine most often are for rotation and/or lateral flexion restrictions, because these are the techniques most often taught in school and in technique system seminars. The methods available for correction of these fixation dysfunctions are traditional manual adjusting, low-force manual adjusting (such as DNFT), and single and multiple-thrust instruments. It is in the best interests of patients and doctors to understand and possess variable methods of evaluation and correction of cervical extension fixations.

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