Asia-Pacific Chiropractic Journal

A study of the nature of SOT occipital line fibres: A retrospective case series of 65 patients

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Narrative: Sacro-occipital technique (SOT) occipital fibres is a Chiropractic technique developed by Major Bertrand DeJarnette, DO, DC with multiple aspects integrated into a single system of care.

Occipital fibres technique (OFT) assists the Chiropractor in locating and adjusting thoracic and lumbar vertebral subluxations.

It also helps identifying specific viscerosomatic/somatovisceral reflex organ problems while incorporating visceral soft tissue therapeutic applications.

OCT can facilitate the management of dis-ease while at the same time providing a philosophy of care. This is a retrospective study that reviewed the records of 65 patients adjusted using SOT occipital fibre technique (OCT) and was conducted in parts during 2011 and 2012.

Indexing Terms: Sacro Occipital; Sacro Occipital Technique; SOT; Golgi tendon; somatovisceral reflexes; viscerosomatic reflexes; Chiropractic Manipulative Reflex Technique, CMRT; occipital fibre technique.

Introduction

Sacro-occipital technique (SOT) occipital fibres is a Chiropractic technique developed by Major Bertrand DeJarnette, DO, DC (1) with multiple aspects integrated into a single system of care. Occipital fibres technique (OFT) locates and adjusts subluxations. It also identifies specific viscerosomatic/somatovisceral reflex organ problems while incorporating specific soft tissue therapies. This system allows for the management of dis-ease while providing a philosophy of care. (2).

'... a pattern of imbalance caused by postural or spinal dysfunction or subluxations will be represented in specific sustained tension in particular portions of the suboccipital muscles ...'

In this retrospective case series we utilised a Chiropractic technique, OFT, (3, 4, 5) which is a method within sacro occipital technique (SOT) used to analyse and treat thoracic, lumbar, and sacral segments. The rationale for using OFT is to find regions of the body that have an interrelationship via direct musculoskeletal, and indirect reflex, to the occipital region, spine, and possibly to visceral referred pain pathways.

In bipedal humans the rationale for OFT rests upon visual and vestibular

righting mechanisms, which occur as a method of accommodation to keep the head upright and parallel to the horizon. (6, 7) Ascending postural accommodations are believed to be modulated through the position of the cervical spine by way of the suboccipital muscles to maintain eyes and ears level to the horizon.

DeJarnette's theory of OFT is that a pattern of imbalance caused by postural or spinal dysfunction or subluxations will be represented in specific sustained tension in particular portions of the suboccipital muscles. The purpose of this paper is to present a retrospective study of 65 patients treated with occipital fibre techniques and to discuss the historical perspective, nature, relevance as well as basis of clinical application of SOT's occipital fibre reflex analysis and treatment.

Selection criteria for retrospective study

This is a retrospective study that reviewed the records of 65 patients adjusted using SOT occipital fibre technique and was conducted in parts during 2011 and 2012. The patients' records included in this study had the following characteristics:

1. The patient was adjusted at this office for more than five consecutive years.
2. The patient received at least ten adjustments per year in each of the last five years.
3. At each office visit the patient's occipital fibres were examined and the related vertebrae noted and recorded in the individual's chart notes.

Any patient's chart records that satisfied the above criteria was included in this study. The 65 patients in this retrospective study varied in age. The chart below lists the number of patients per decade of birth.

Birth Decade:	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
# of Patients:	4	9	16	10	10	3	1	7	5

Sample case study

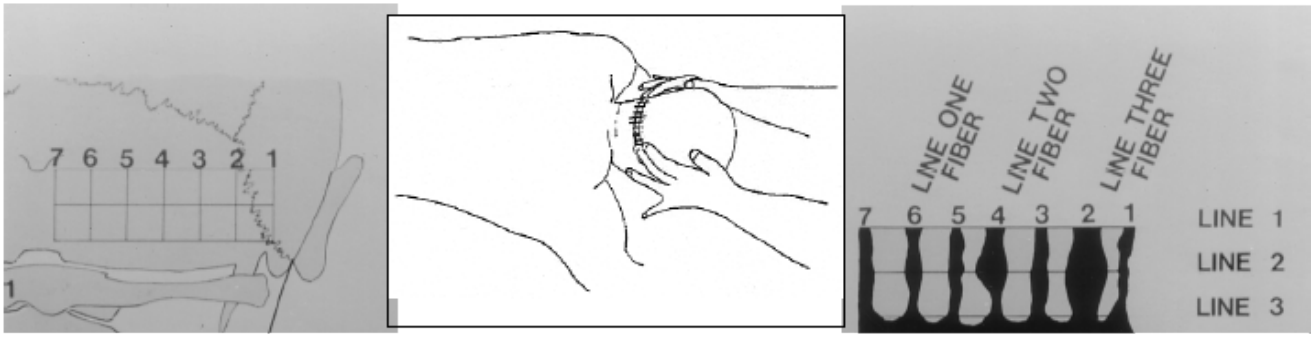
The following represents one of the 65 patients that met the criteria for inclusion in this retrospective study. A six year old male was first seen at this office February 9, 2007 experiencing upper respiratory congestion, frequent ear infections and fevers, general difficulty breathing and frequent use of antibiotics.

This young boy exhibited an occipital line two fibre, area five, thoracic seven (spleen) major and met the qualifying criteria to be included in this paper. At his last adjustment, January 13, 2012, he still exhibited a line two area five occipital fibre and had a related thoracic seven vertebral subluxation. Neither the occipital fibre reflex nor vertebra was as sensitive to palpation as when presenting initially. Throughout his care he has experienced no more ear infections and occasional but mild upper respiratory congestion. Since the early stages of his adjustments he has not required antibiotic therapy.

Methods/Intervention

Occipital fibre reflexes are located along the nuchal line from the occipitomastoid junction (fibre number one) to the external occipital protuberance (occipital fibre 7). Muscle fibres are located in seven vertical fibres on each side of the occiput and are near the aponeurosis of the cervical musculature where they attach to the occiput. (2, 4)

The seven vertical occipital fibres also have three specific lines, which run horizontally. Line one is positioned along the seven fibres from the occipitomastoid junction to the external occipital protuberance. The line two is located approximately one half inch (1.25cm) inferiorly and is believed to be related to visceral function. Each fibre within horizontal line two refers to a specific vertebral grouping which is purported to have musculoskeletal and neurological relationships. (2, 4)



The occipital fibres are palpated with the patient prone, and the most sensitive fibre is the one chosen to assess the vertebra in the reflex arc. Once the sensitive vertebra is determined, the line two occipital fibre is manipulated until the reflex at the vertebral level develops warmth. At that time the vertebra is adjusted.

Chiropractic manipulative reflex technique (CMRT) is then utilised if there is some viscerosomatic/somatovisceral reflex involvement. Determining is made of CMRT transverse process sensitivity as well as referred pain patterns associated with the dysfunctional organ. As occipital reflex, vertebra sensitivity, and visceral reflex patterns are determined, further information can be gathered through history, examination, and laboratory tests to guide and evaluate the patient's response to treatment. (2, 4)

Results

All 65 patients had an occipital fibre with a related vertebrae subluxation present on all visits. Some were no longer experiencing soft tissue (visceral reflex) palpation sensitivity. All felt improvement from their initially stated symptoms. While all 65 patients maintained clinical improvement they still presented at each office visit with an occipital fibres reflex and a related vertebral subluxation. Some evolved from occipital line two fibres to line one; however, most remained as line two fibres but with much less tenderness to palpation and stimulation. All patients understood the meaning of the occipital fibre reflex work and at different levels participated with their care in respect to nutritional intake and dietary modification.

Discussion

DeJarnette, the developer of SOT, was concerned with the reoccurring vertebral subluxation that would not resolve with treatment and would continually return. He had various theories such as myofascial postural disturbances, extremity related dysfunction, and also reflex neural input from the viscera afferents.

While he postulated that there was a somatovisceral relationship between the vertebra and viscera, generally the determinant factor for treating the organ reflex was reoccurring vertebral subluxation and not visceral dysfunction. DeJarnette discussed the following relationships concerning occipital fibre reflex techniques. (2, 4)

1. Occipital fibres are defensive and are a responsive and part of a controlling body system.'The occipital fibre is purely defensive and the result of other happenings. It is not causative, as long as the fibre responds, the body's defense is normal'. (2) This retrospective of 65 patients noted that all the patients presented with positive occipital fibres and a related vertebrae subluxation remains at each visit.
2. DeJarnette taught that chiropractors have the ability through occipital fibre identification to locate, adjust, and improve subluxations along with the related soft tissue organ deficiencies. '*The occipital line two fibre is diagnostic of altered physiology which may be pathological*'. (2)
3. DeJarnette noted that understanding occipital fibres can enable practitioners to identify aberrant viscerosomatic/somatovisceral reflex or organ problems and manage their care. '*The occipital line two patient must have nutritional help as well as total health care*'. (2)

Occipital fibres appear on three distinct but interrelated lines with seven points on each side of the occipital bone. DeJarnette stated the following: 'When a fibre is identified on the occipital line one as painful to fingertip pull, it is a fibre in need of investigation, and by following it inferior you can feel a small nodule if line two is involved. If the fibre passes through line two as a swollen fibre, with nodulation, then it is an occipital line three fibre. (2, 8)

According to DeJarnette, line one monitors and responds to an organ that functions but with some difficulty. Line two monitors and responds to a dysfunctional organ under stress. Line three monitors and responds to an organ that has evolved to a pathological state. He said '*The occipital line one defends you against visceral upsets without pathology. The Line two defends you against visceral upsets with pathology. The occipital line three defends you as far as possible against onsets of visceral degenerative processes in which pathology becomes destructive*.' (2)

Line one fibres do not require stimulation and the related vertebrae is adjusted by spinous process pressure or adjustment. Line two fibres need to be stimulated and the related vertebrae is adjusted at the most prominent transverse process nodule. Soft tissue reflexes that stimulate afferent related neural impulses are part of the line two therapy.

> 'In all occipital line two involvement, you have to deal correctly with soft tissue involvements, which means non-striated muscular tissues. This is met by specific hand manipulations to specific parts or organs of the body as indicated by the vertebral segmental level involved. Without those hand manipulations the tissue cannot regenerate and the progress of pathology will continue'. (2, 7)

The soft tissue work with line two is known as Chiropractic Manipulative Reflex Technique (CMRT). (5, 8) Line three is adjusted at different parts of the spinal vertebrae based on palpatory findings. (8)

This retrospective study appeared to support DeJarnette's contention that subluxations determined through occipital fibre analysis are associated with a cause and effect. He purported that subluxations cause pain and dysfunction (dis-ease) and can lead to pathological states. He believed that subluxations also respond to internal dysfunctional and pathological organs and occipital fibre analysis is part of a process of identification (diagnosis) and adjustment (treatment). By using occipital fibres and the related soft tissue techniques (CMRT) DeJarnette

believed these methods could improve organ function, reduce the effects of the subluxation and help the doctor to direct the patient to proper supportive behaviours. (2)

The occipital line two fibres and their related organs reflex relationship according to DeJarnette (2, 5, 8) are listed as follows:

Area	Vertebrae	Organ
Line 2 Area 1	Thoracic 1, 2, 10	Coronary, Myocardial, Intestines
Line 2 Area 2	Thoracic 3, 11, 12	Lungs, Kidneys
Line 2 Area 3	Thoracic 4, 5, Lumbar 1	Gall Bladder. Gastric, Iliocecal
Line 2 Area 4	Thoracic 6, Lumbar 2	Pancreas, Cecal
Line 2 Area 5	Thoracic 7, Lumbar 3	Spleen, Glandular
Line 2 Area 6	Thoracic 8, Lumbar 4	Liver, Colon
Line 2 Area 7	Thoracic 9, Lumbar 5	Adrenal, Prostate/Uterus

Some compelling studies that involved the use of OFT and CMRT involved treatment of animals with this procedure, particularly a horse and a dog, since they do not appear subject to a placebo effect. (11, 12, 13) OFT was used with both animals to diagnose and treat vertebral imbalance and direct CMRT care. Following OCT and CMRT procedures the horse was relaxed, calm, and bowel sounds became normalised and progressively motile. (11) In the case of a 10-year-old female cattle dog complete resolution was found for her chronic symptoms of bloating, mood changes, joint pain, and chronic *psoas* tension. (12) A case control study utilising pre- and post-endoscopic studies and OFT/CMRT care of gastroesophageal reflux disease as well as a small randomised controlled trial investigating OFT/CMRT care of patients with dyspepsia both revealed positive outcomes. (14, 15)

Conclusion

This retrospective study of 65 patients suggests the use of SOT's occipital fibre analysis and treatment followed the methods as discussed by DeJarnette. As with any clinical intervention in a single practitioner's office there is always the possibility that doctor or patient's expectations can affect the outcome of any retrospective study.

Further research with multiple practitioners and patients utilising controls and sham procedures would help rule out confounders such as placebo or ideomotor effects. Based on this study, greater investigation into occipital fibre analysis and treatment and its relationship to patient care is warranted.

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Cite: Getzoff H, Blum CL. A study of the nature of SOT occipital line fibres: A retrospective case series of 65 patients. Asia-Pac Chiropr J. 2025;5.4. www.apcj.net/papers-issue-5-4/#GetzoffOccipitalFibres

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