Cranium

Pia mater

Blood vessel

Cerebrum

Dura mater

Pia mater

rachnoid mater

Subarachnoid space

Dura mater Arachnoid mater

# PAINFUL MATER

GINA REINGE PROVIDES A CASE STUDY OF A LADY WITH ADHESIVE ARACHNOIDITIS

Subarachnoid

space (contains

cerebrospinal fluid)

Cerebellum

Spinal cord

Subarachnoid space

**ADHESIVE ARACHNOIDITIS IS NOT** 

a well-known condition, and its true prevalence remains largely unknown because of poor recognition and inaccurate client records.

The condition is caused by injury to the arachnoid layer of the cranial meninges, which protect the spinal cord, often because of rupture, trauma or infection. Injecting dye into the spine for myelography purposes is one cause of injury, resulting in chronic inflammation of the arachnoid membrane of the meninges in the brain. Myelography was a common protocol prior to the use of MRI scans, which have now rendered the technique obsolete.

The meninges are membranous coverings of the brain and spinal cord, consisting of the dura mater, the arachnoid mater and the pia mater.

Between the arachnoid mater and pia mater is the subarachnoid space, containing cerebrospinal fluid that acts as a cushion between the brain and skull, while at the same time delivering nutrients to the nervous system and removing waste products.

In adhesive arachnoiditis, the cerebrospinal fluid becomes sticky, causing the nerves to glue together. As the sticky fluid affects the spinal cord, it creates considerable nerve issues throughout the body. There are several types of arachnoiditis, with the adhesive version being the most severe.

The symptoms of adhesive arachnoiditis include numbness and tingling; stinging, burning pain in the lower back and legs; muscle cramps and spasms; balance issues; weakness; and eventually paralysis.

Currently, there is no known cure and only limited treatment options. Adhesive arachnoiditis is widely recognised as an untreatable condition, and the main aim of treatment is to manage symptoms. Pain relief options achieve only limited success, and people with this condition have the added complication of responding badly to medication. It is considered a progressive condition, with most patients ending up in a lying wheelchair as pain in the coccyx area makes sitting in a wheelchair impracticable.

Cerebrum

Cranium

### PHYSICAL AND MENTAL STRUGGLE

I have been working with a client with this condition for the last three years. She is a 74-year-old lady who underwent a failed myelography procedure in 1969. In 2002, following subsequent surgery (a laminectomy, which involves removing the back of one or more vertebrae to relieve pressure on the spinal cord or nerves), she began to develop symptoms consistent with arachnoiditis. A scan confirmed the diagnosis.

When we first met, she was seeking help for knee pain, which was making it

very difficult for her to walk. But as we discussed her history, it was clear that she was struggling both mentally and physically with her condition, which left her bedbound for most of the day. She couldn't cook for herself, leave the house for long periods or drive. She felt her life was over and doctors were telling her there was nothing more they could do, suggesting she was likely to be in a wheelchair within the year.

She was not prepared to accept this and decided to see if I could do anything for the worst of her symptoms, the knee pain.

We treat many clients with complex health needs in our clinic and always start by putting the medical complications to one side for a moment and assessing the biomechanics of the person in front of us. All too often, people get caught up in the disease and miss what can be very simple secondary reasons for the pain they are presenting with.

The reason for the knee pain quickly became apparent. My client had a posteriorly positioned pelvis with a rotation and a lateral tilt. Her feet were very weak and severely pronated. She had no ability to balance, and leg circumference measurements showed weakness in the right side, confirming an overuse of the left leg, the same side as her knee pain. The knee itself was swollen, hot and painful. Putting her arachnoiditis to one side, any client presenting with these biomechanical issues would be experiencing pain because of the forces acting around the overused knee. My initial treatment plan, therefore, was to rebalance her pelvis and leg strength.

During the first session, she could only tolerate 10 minutes of hands-on treatment. In that time, I used light trigger-point work to release the gluteus maximus muscle, allowing her pelvis to return to a more neutral position. She reported significant referral pain down the leg when doing this work and we chose to stop as she felt unwell. However, she responded surprisingly well and the pelvis was considerably straighter. I decided not to follow up with any exercises at this point as she was clearly unable to tolerate anything further.

# **ALTERING PAIN**

She kept notes for me over that first week and when she returned a week later she had the biggest smile on her face. 'What did you do?' was the first thing she asked, to which I replied rather nervously, 'I straightened your pelvis – why?' She then told me the pain in her coccyx, which had made sitting intolerably painful for over a decade, had all but disappeared and her knee now didn't hurt at all. We were both rather stunned. She had always put her coccyx pain down to the arachnoiditis but here was strong evidence that we could alter her pain. I asked her if

## **FHT COMMENT**

We strongly recommend that members working with clients who have a condition affecting the spine seek written or verbal consent from the health professional responsible for the client's care before carrying out treatment. she would like me to continue rebalancing her, to which I got a resounding 'Yes!'

Over the next year, every fortnight, that is exactly what we did. She gave me copies of her MRI scans and I studied them, looking for any biomechanical reasons for her pain. In her spinal canal, the spacing between the vertebrae had narrowed and the spinal cord was perilously close to compromise. The spine was showing signs of biomechanical scoliosis as the muscles dragged the spinal column away from neutral.

I started with her core muscles and spinal stabilisers, directing her to sit on a gym ball (with support) and performing a pelvic rocking exercise to encourage the spine to mobilise. We progressed to isolated core activation while lying supine, performing a standing cobra exercise against the wall, sitting on the ball without support, then resupporting and lifting a foot off the floor, and finally lifting the foot off the floor unaided. We strengthened the core until the spine could hold a neutral position. Using soft tissue techniques - mainly trigger point work and myofascial release (MFR) - I continued to realign the pelvis until the muscles were strong enough to maintain the correct position. I worked mostly on quadratus lumborum and gluteus maximus and used MFR work on the thoracic spine.

I then worked on the deep spinal stabilisers, strengthening muscles such as interspinales and rotatores in order to increase the spacing between the vertebrae. The clinical rationale was that this would give the nerves an increased space in which to move and hopefully reduce some of the tingling she had in her feet. The objective feedback from our client was that she could move more easily, was less stiff and had reduced tingling.

# Arachnoiditis | SPORT

### **BALANCE AND BAND-WORK**

Next, I worked on the larger muscles of the spine. She had significantly protracted shoulders and a forward head posture, which was affecting her balance and overall spinal health. I used trigger point work and MFR techniques to release the pectoralis major muscles, long head of biceps and sternocleidomastoid muscles to realign the protracted shoulders and neck. I strengthened the rhomboids, mid trapezius, rotator cuff and triceps muscles until she could maintain a correct shoulder position. It was slow going, but results were fantastic.

I then started to work on her balance and leg strength. Years of being bed-bound had left her with little leg strength and virtually no balance. One of the characteristics of adhesive arachnoiditis is the inability to plantarflex and dorsiflex the ankle, so I gave her a wobble board and directed her to first push her toes down, then her heels, to get this movement back and create some strength in these areas. It worked perfectly.

I broke down the component movements of walking, beginning with encouraging the heel-to-toe movement we had just gained with the wobble board. We worked on her ability to balance through one leg and

alongside isolated band-work with leg extension and flexion, we managed to get basic balance back into the legs and create some strength. Later, we began to work on her ability to perform sit-to-stand and stand-to-sit exercises on a chair using

exaggeratedly slow movements to ensure correct alignment of the leg and to maximise the number of muscle fibres used. Over time, I managed to progress her on to mini squats and then full squats with the gym ball for assistance. Finally, I got her to balance on one leg with the wall and ball for assistance.

Eventually she was sitting on the gym ball, lifting one leg and balancing, standing on a wobble board and performing basic squats. Her posture was now within normal levels and her pain had hugely reduced. She could walk, drive, head out with friends, and look after herself at home. None of this was easy, but the general trend was of steady improvement. To this point, our treatment aim was all biomechanical; we were still to look specifically at the underlying medical condition.



### **MYOFASCIAL RELEASE**

Now she was in a better physical state, I started to consider the sticky fluid supply in the subarachnoid space. She still experienced numbness in her legs and despite a straighter, stronger spine, frequent neurodynamic sliders and exercise, this was still not abating. Neither was the daily exhaustion she felt, even though she was fitter than she had been in years.

In adhesive arachnoiditis, the cerebrospinal fluid becomes very sticky

"She is on reduced pain increased energy, very little pain, less numbress and a huge zest for life " I wondered if the technique of MFR could help to draw fluid back and reduce adhesion. With my client's consent, we tried fi minutes of MFR or the most superficia

similar consistency to diseased fascia. I wondered if the could help to draw With my client's

consent, we tried five minutes of MFR on the most superficial area at the base of

the skull. During the first treatment, she experienced feelings of extreme heat in her skull, not unpleasant but very strong.

Over the following two weeks, her energy levels improved dramatically, and she was able to cook meals, go out for lunch with friends and weed the garden; she even moved furniture around in her house and did some decorating - activities usually impossible because of exhaustion. The effects began to wear off towards the end of the second week, but we both knew we should continue with MFR, given such a positive result.

Six months after we started, she reported her foot numbness to be of lower intensity, an astonishing thing to report. Eight months after, she began to lower her morphine dose under the supervision of

her doctor and 16 months later, she started to lower the dosage of her pain medication, sodium valproate.

I currently give her 10 minutes of MFR at the end of each treatment to the base of the skull; she is now reporting that the tingling in her feet is intermittent. We have clearly affected her nerves in some manner and are getting a positive response, something that is not thought to be possible with this condition. I would be fascinated to have her rescanned to gain an objective measure of the adhesiveness of the cerebrospinal fluid, for indications on whether the fluid has been affected or whether there is another reason for the improvement in her symptoms.

Recently, my client was admitted to hospital with shaking, twitching muscles and memory issues. Doctors concluded this was caused by her medication and weaned her completely off two of her pain medications. This stopped her symptoms and sent a firm message that she didn't need these pain-relieving drugs any more. They are now working on reducing the rest of her medication.

This lady had constant pain and the very real prospect of a life in a lying wheelchair. Three years later, she is on significantly reduced pain medication, has massively increased energy, very little pain, less numbness and a huge zest for life. She isn't in a wheelchair; in fact, she even takes part in a mainstream exercise class.

I submitted this case study to the 2018 Complementary Therapy Awards and won the Pain Management, Injury Prevention and Rehabilitation award. In the judges' words: 'This approach could be replicated in other complex conditions and by other therapists - it is highly transferable.'

Going forward, I am interested in identifying a consultant or trust with an interest in this field that would consider collaborating to help establish what effect MFR is having on the cerebrospinal fluid. 🔟



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and takes on a