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PREVENTION & REHABILITATION: EDITORIAL

Visceral factors in rehabilitation & health



In this section 2 papers have been selected to illustrate a little considered aspect of rehabilitation and prevention; and that is, visceral health.

Developmentally, of course, the viscera are both an older more fundamental structure than the musculoskeletal system, yet movement therapists and bodyworkers often place great focus on the musculoskeletal function with “just enough to get by” focus on the visceral function.

The first of the two papers, by Bove, *A model for radiating leg pain of endometriosis* investigates a new possible mechanism for pain generation in Endometriosis, while the second paper, by Bramati-Castellarin et al., *Repeat-measures longitudinal study evaluating behavioural and gastrointestinal symptoms in children with autism before, during and after visceral osteopathic technique (VOT)* reviews the effects of direct manual work to the viscera in children on the autistic spectrum, assessing their function before, during and after a 6-week course of treatment [Note: Bramati-Castellarin et al.’s paper can be read in full in the previous edition of JBMT:20:3]. Bove highlights how female patients with a prevalent musculoskeletal presentation, such as sciatica, may actually be experiencing their symptoms as a result of the visceral condition Endometriosis, while Bramati-Castellarin et al. demonstrate how application of manual techniques to the viscera may result in changes to even some of the brain-based behavioural symptomology of autism.

Visceral conditions are many and varied, and range in scope from those causing slight metabolic inefficiencies to those that are severe or even catastrophic in effect. Endometriosis, one such condition, affects an estimated 176 million women worldwide regardless of their ethnic and social background. Many remain undiagnosed and are therefore not treated. Endometriosis is a condition where tissue similar to the lining of the uterus (the endometrial stroma and glands, which should only be located inside the uterus) is found elsewhere in the body (Kennedy et al., 2005).

It is generally acknowledged that an estimated 10% of all women during their reproductive years (from the onset of menstruation to menopause) are affected by endometriosis (Rogers et al., 2009). This equates to 176 million women

throughout the world, who have to deal with the symptoms of endometriosis during the prime years of their lives (Drake et al., 2005).

The viscera receive motor drives from the cranial and sacral parasympathetic fibres and from the sympathetic chain running segmentally down the spine. When viewed through a psychosomatic lens, which may include more traditional medical systems, such as shamanism or Ayurvedic medicine, uterine issues are seen as potentially associated with life issues around sexuality, emotional balance and flow (Simpson, 1999; Straus et al., 1992). Even before puberty begins around 11–14 years of age, most people are deeply programmed with their culture’s prevailing views of sexuality; yet most of these views remain incongruent with biological design (Saxon, 2012; Ryan and Jetha, 2012; Buss, 2003); it is the rare exception for men and women to pass into, and through, adult life without significant sexual challenges.

Since descending pathways from the limbic-emotional centres of the brain are, by their nature, utilised to modulate visceral function, including neural drive, blood flow and smooth muscle tone, it is feasible that specific emotional stressors may exert differing effects on differing components of the visceral system; though the received wisdom is that the effects may be more generalized than targeted.

According to Barral (1989, 1993), lesions, adhesions and turgor (the cells ability to optimise its own space) can be found anywhere in the pelvic, abdominal and thoracic cavities:

- The ovaries
- Fallopian tubes
- Peritoneum
- The uterosacral ligaments,
- The cul-de-sac,
- The Pouch of Douglas
- The rectal-vaginal septum

This suggests that, in addition to Bove’s findings of endometrial cells creating an inflammatory response in the sciatic nerve tissue, they may also successfully bind with

any of the neural tissues in these regions and create localized or referred symptoms along these distributions.

Digestive organs lungs and pleura

Endometriosis has effects physically, emotionally and mentally. Health Psychology texts suggests that human beings should be viewed as complex systems, and that health and illness should not be viewed as having a single causal factor (Ogden, 2000). Within Health Psychology, individuals are not viewed as passive victims of illness, but as participants in illness. Therefore, the whole person should be treated, not just the physical.

Within Health Psychology, health and illnesses can be seen to play out on a see-saw. At any given time the patient can be placed somewhere on that see-saw. People progress from homeostasis towards illness and back again. This is relevant to endometriosis because its cyclical nature means that patients can move from being very ill, to potentially being quite well, on a monthly basis. In other diseases, the cycles of health and illness are often spread over longer periods. Understanding the role that psychological factors play in illness could help to alleviate psychological symptoms which, themselves, may drive or exacerbate physical symptoms.

Adhesions and infertility

Infertility is a morbidity suffered by many women with adhesive diseases such as endometriosis, pelvis inflammatory disease (PID), peritoneal infections such as tuberculosis, appendicitis or surgeries. The impairment of reproductive organs has many affects to performance, mechanics, mobility, motility and a variety of other mechanisms. A common endpoint for adhesions is distortion of the normal tuba-ovarian relationships preventing ovum capture and transport. Adhesions causing this end range form a filmy avascular band that pulls the fimbriae outward to the pelvic sidewall; to dense, matted structures causing a thick-walled blocked fallopian tube and complete obstruction.

The suspensory ligaments of the urogenital system are important in the mobility and function of the pelvic organs. Examples include the uterovesical ligaments attaching the bladder to the uterus. The uterosacral ligaments help to suspend the uterus posteriorly. The urogenital system is also supported by ovarian ligaments, suspensory ligaments, and tubo-ovarian ligaments. Just as the ligaments are important in the structure and function of a joint, they are equally important in the mobility and function of the pelvic organs (Barral, 1989).

Similarly, good organ function is likely prerequisite to good musculoskeletal function, both physiologically and biomechanically. It appears that recurrent drives to the spinal cord from noxious stimulation of the A-afferents and B-afferents can cause changes in the neural excitation at the spinal cord segment creating a viscerosomatic reflex. Clinically, this appears to manifest as inhibition or the low threshold motoneurons found in preponderance in the deeper musculature (see Wallden, 2013 for more discussion). In addition, any pain in the viscera is likely to be

aggravated by compression, such as a palpating hand or contraction of the abdominal musculature. In function, the viscera are utilized to provide a counter-pressure to the contracting abdominal musculature to allow effective force transfer. Indeed, the very name "viscera" is derived from "viscous" which means a non-compressible entity. Any discomfort associated with visceral compression is likely to therefore result in altered muscular recruitment to minimize compressive forces on the viscera themselves.

The symptoms of dysfunction in the reproductive system can present clinically as dysfunction of the reproductive organs, pelvic asymmetry, endometriosis, sacral dysfunction, bloating, or pain (Barral, 1989; Barral, 1993). Symptoms related to lymphatic congestion in the pelvic region with hormonal bias are dysmenorrhea, premenstrual syndrome, ovarian cysts, emotional instability, and depression (Chila, 2010). Release of fascial and ligamentous restrictions is believed to decrease pressure on blood vessels, thereby optimising the vascular function and improving the efficacy of the lymphatic system (Chila, 2010).

This improved efficacy, in turn, aids not just in correcting symptoms, but also in restoring optimal blood flow to the organs, optimizing function and normalising the ability for hormone production (Barral, 1993). Decongestion of the lymphatic system can help remove waste from the organs and thus help normalise their function (Chikly, 2005). Mobilising fluid and cellular waste from the pelvic cavity should also allow hormones to more efficiently arrive at the target tissues (Chikly, 2005). Within the reproductive system, this decongestion could theoretically lead to normalised hormone levels, normalised menstrual cycles, and improved fertility. In a different paper by Bove & Chapelle, published in this Journal in 2011, it was shown that visceral manipulation may effectively break down and prevent adhesions in a rat model; also making the correlation between adhesions and infertility among other common visceral complaints.

Ovaries and endometriosis

The posterior part of the broad ligament allows movement from bottom to top. The suspensory ligament of the ovary attaches the ovary to the lateral wall of the lesser pelvis and subperitoneal lumbar fascia. All other ligaments attach to mobile structures, including the uterus. Due to infection and/or surgeries, adhesions can often cause pelvic and lumbar pain, as well as tubal problems. These types of adhesions provoke pain in synchrony with the menstrual cycle, with pain being maximal during the pre-menstrual phase.

Pelvic pain

Pain of the lower pelvis found with endometriosis or malfunction of the organs may be due to congestion, fluid, nervous, spasmodic, mechanical or psychological factors. Referring pain from the genital centre can be from spasmodic uterine contractions (due to uterocervical malpositioning) or uterine adhesions, which can include endometrial tissue. Local tissue problems can bring about

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