1. INTRODUCTION:

- Structurally, the sacrum-coccyx serves the dual roles of the support base of the spinal column and also forms part of the pelvic ring. Physiological posturo-movement control of the pelvis and the spine are functionally interdependent. In particular, Intrapelvic control, its spatial organization as a whole and its control on the femora directly influence spinal alignment and control mechanisms. Balanced neuro-myofascial activity ensures mechanisms of both intrinsic and extrinsic pelvic support and control.

- Professor Vladimir Janda proposed the concept of the Pelvic Crossed Syndrome as an underlying factor in the genesis and perpetuation of many low back pain syndromes. A 'crossed pattern' of imbalanced myofascial activity disturbs sagittal lumbo-pelvic posturo-movement alignment and control. While evident in back pain populations, it is not a universal finding.

- Clinical practice delineates another group who display a different, almost opposite 'cross pattern' of altered myofascial activity also affecting sagittal lumbo-pelvic alignment and control.

2. HYPOTHESIS:

- The 'pure' PXS picture may not always be apparent: often a Mixed Syndrome with some features of both PXSs, yet an underlying dominant tendency.

- Importantly, underlying the PXSs is a related deficit in the integrated and balanced control provided from the deep innermost myo-fascial sleeve collectively termed the Lower Pelvic Unit (LPU). This includes the diaphragm, iliacus, psoas, transversus, obductors, pelvic floor muscles and the lumbar intrinsics. Research has begun to demonstrate defective activity of some muscles within this complex of muscles.

- In Janda's Pelvic Crossed Syndrome the pelvis is more posterior and anteriorly rotated: associated with more dominant activity in the axial extensors and hip flexors: here re-termed the Posterior Pelvic Crossed Syndrome (PPXS).

- Conversely, in the other group, the pelvis is more anteriorly in posterior rotation: associated with a predominant tendency to axial flexor and hip extensor activity: the Anterior Pelvic Crossed Syndrome (APXS). This subgroup may be more common.

3. CLINICAL IMPLICATIONS OF THE PELVIC CROSSED SYNDROMES

- The PXSs and related LPU dysfunction
  - both an over reliance on the 'outer' myo-fascial systems & the passive tissues
  - predictable compromise numerous functional mechanisms as follows:
  - Patterns of intrapelvic pelvic control
    - compromised internal stability of the pelvis limiting its 'sway & swivel' on the femoral heads necessary in weight shift, load transfer and in controlling equilibrium
    - Spatial pelvic control = effective weight shift - multiplanar acetabular rotations involve movement force couples highly dependent upon LPU activity
    - Role of the pelvis as an effective & adaptable base of support for the spine
    - Imbalanced patterns of axial flexor/extensor activity with coactvation & compensatory axial 'holding patterns'
    - Variance in posturo-movement (P/M) strategies - 1º move in sagittal plane with more predictable P/M strategies
    - Blocks more vertical pelvic control
    - Lumbopelvic control & initiation of movements from the base of the spine
    - Hip function as the axis of triplanar weight shift & movement initiation - (open and closed chain)
    - Compensations higher up in the spine
    - Deep anterior support to lower half of the spinal column & stability for the diaphragm - postural & respiratory role
    - Quality in generation of IAP & control of continence and respiration.

4. EFFECTIVE WEIGHT SHIFT THROUGH THE PELVIC BASE OF SUPPORT IS IMPORTANT IN PATTERNS OF SPINAL CONTROL

- Sagittal weight shift: fundamental to bending forward, lifting; sitting; standing
- Sagittal weight shift: fundamental to walking, weight shift in sitting
- Sagittal weight shift: fundamental to walking, weight shift in sitting

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