Editorial

Let us not just work at the spinal level

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Einstein's lasting rue against the modern times was – a profusion of means, and a confusion of ends. The scenario holds good for the human spine. Modern medicine has an arsenal of imaging techniques that seem to refine themselves everyday. To complement the imaging efficiency, operative instruments are now made of the best of material- for operating and inlaying. Yet, the net outcome for the ailing spine is not very reassuring. No wonder, given the same case, diagnosis, treatment and outcome differ from one clinician to another.

A sea-change has descended on the spinal scene. A detailed consideration of the epigenetic sequence in embryology led the senior author (M.K.) to research upon and demonstrate that in the musculoskeletal system, the soft tissue is the boss, and the bones a mere inlay. The spinal bones are formed initially as a gel-like tissue, much akin to the Wharton's jelly in the umbilical cord. The jelly is replaced by vascular tissue which then spawns the bony lamellae to fashion the vertebrae that seem so prominent grossly and radiologically. The bony vertebrae are discrete islands in an uninterrupted ocean of soft tissues, of which the discs are an integral part. The foregoing may be illustrated by two epigenetically correct statements: 'The spinal cord does not pass though the foramen magnum, but the foramen gets fashioned a round the cord'. 'The spinal nerves do not pass through the intervertebral foramina. It is the foramen that develops around the preexisting nerves'. The disc is the central dorsal point of the embryonic somites, having the spinal nerves emerge in line with the disc, thus rendering, and so rightly, the vertebrae as interdiscal or interneural. The entire soft tissue architecture of the body including blood vessels and nerves are formed much earlier in the embryonic life before even a spicule of bone is formed. Likewise, the disc is much stronger than the vertebral body, which is the 'weakest' part of the spine.

The epigenetic, anatomic and physiologic primacy of the soft tissues- meaning the periosteum that forms the os case and all the soft tissues that terminate into it- makes it the mother membrane that, in health and disease, tension and trauma- fashions, begets, sustains and repairs the enclosed bone. The strength of the soft tissue, thus, becomes the strength of the spine. No wonder, that a well-toned back with radiologically 'weak' looking spine has no symptoms whereas a burgoise back, looking good, has all the problems for want of rightfully trained and toned soft tissues. In the coming years, a better understanding of the genesis, structures and function of soft tissues of the vertebral column will pave way for greater clinical dividends, conservatively and operatively.

There is another sea-change in the spinal scene, and the credit for this goes to man, the *Homo technicus*. Progressive refinement of material has offered to modern medicine non-reactive material that is light, of high tensile/compressive strength, and capable of replacing a lost vertebra or lost intervertebral disc. To add to this material bonanza the varied instruments and endascopes have made spinal surgery minimally invasive to provide maximal beneficial outcome. The future, to say the least, is materially and manually quite bright.

The cytological miracle called the spinal cord and all the nerves that go into it or emanate therefrom comprise a living God where, as Sherrington showed and said, a million shuttles weave a pattern to subserve Sania's serve at the Wimbeldon or Amitabh's antics on the screen. The 3 maters, and the spinal vertebral column comprise a multilayered temple that has the honor of housing an important deity, Suffice to say, the contents of the spine - the cord and co. - are supremely important, the vertebral bony column playing a subsidiary role.

Ralph Waldo Emersen aphorized that what is NOT seen is always far more beautiful and important than what is obvious to your eyes. Roentgenian radiology naturally brought the relatively inert and unimportant bones to the fore to the neglect of soft tissues. MRI, CT and the likes have changed the scene but not our approach to the primacy that the soft tissues must be accorded. The word God is traceable to *goodh* (Sanskrit) meaning *'subtle'*. The spinal soft tissues are subtle, therefore like God not readily seen, and thus given a short shrift. A time for a revised *weltanshuaang* on the spine has arrived.

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