

How often is pelvic obliquity correspond to convexity of the scoliotic curve?



Michele Romano ISICO - Italian Scientific Spine Institute – Milan

Background

Leg Length Discrepancy (LLD) is a common orthopaedic condition. The cause of asymmetric growth of the lower limbs has not yet been clearly defined.

The correlation between LLD and scoliosis has attracted the attention of researchers and clinicians who have produced several studies that have investigated the role of pelvic obliquity in inducing adequate compensations, creating a scoliosis curve to ensure the maintenance of the verticality of the trunk.

Aim

Verify the correlation between pelvic obliquity and the convexity of the scoliotic curve.

Study design - Descriptive study

Methods

During medical visits at a facility specialized in the treatment of spinal misalignments, patients with idiopathic scoliosis and a lower limb discrepancy of at least 5 mm were identified.

Inclusion criteria:

- Patients with idiopathic scoliosis - Age 8-15 years - Single curve - Both gender - Leg length discrepancy of at least 5 mm
- 1791 patients with these characteristics were identified.
- 1017 with a left shorter leg and 774 with a right shorter leg.
- Since it is assumed that leg length discrepancy can influence a scoliotic curve near the oblique pelvis more, this group of patients was divided into two subgroups that differentiated them, considering the segment of the spine affected by scoliosis.

1791 Lower limb discrepancy greater than 5 mm			
1017 left short leg		774 right short leg	
767 L o TL curves	250 T curves	476 L o TL curves	298 T curves

Results

Considering 767 curves with apex between T12 and L5 in patients who showed a left shorter leg, only 99 had convexity on the right (12.9%)

Considering 476 curves with apex between T12 and L5 in patients who showed a shorter right leg, only 145 had convexity on the left (30.5%)

Conclusion

The data of this descriptive study show a clear percentage of correspondence between the leg length discrepancy and the convexity of the Lumbar or Thoraco-lumbar curves (87% in case of left shorter leg and 70% in case of right shorter leg)

Clinical significance and implication for practice

In absence of etiological evidence of the scoliosis curve appearance and considering this clear coherence between the convexity of the curve and the obliquity of the pelvis, the realignment of the length of the lower limbs thanks to supports to be placed under the shorter leg should be performed more regularly.

