Scoliosis

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Oral presentation

The 3-DEMO (3-Dimensional Easy Morphological) classification of scoliosis

Stefano Negrini* and Alberto Negrini

Address: ISICO (Italian Scientific Spine Institute), Via Carlo Crivelli 20, 20122 Milan, Italy

Email: Stefano Negrini* - stefano.negrini@isico.it

* Corresponding author

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Objective

To present a new, simple and clinically oriented three-dimensional morphological (3-DEMO) classification of scoliosis.

Study design

We developed the classification from a large database of evaluations obtained through an optoelectronic system (AUSCAN) that gives a 3D reconstruction of the spine. The horizontal view was used, with a spinal reference system (Top View). Pathological data were compared with those of twenty normal volunteers. Repeatability was assessed as well as comparison with the existing classifications were performed. The classification has been obtained also from clinical and radiographic classical data.

Results

We found three classificatory parameters: Direction, the angle between spinal pathological and normal AP axis; Shift, the co-ordinates of the barycentre of the Top View; Phase, the parameter describing the spatial evolution of the curve. Using these parameters it was possible to distinguish normal and pathological spines, to classify our population and to differentiate scoliotic patients with identical AP classification but different 3D behaviors. The classification is repeatable, and not comparable with other 2D classifications, and it has obtained also from clinical and radiographic classical data. First results follow-up results on patients have been obtained.

Conclusion

The 3-DEMO classification offers a new and simple way of viewing the spine through an auxiliary plane using a spinal reference system.