

Oral presentation

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Evaluating the influence of patient positioning on the accuracy of Ortelius 800 measurements for scoliosis

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from 5th International Conference on Conservative Management of Spinal Deformities
Athens, Greece. 3–5 April 2008

Published: 15 January 2009

Scoliosis 2009, 4(Suppl 1):O18 doi:10.1186/1748-7161-4-S1-O18

This abstract is available from: <http://www.scoliosisjournal.com/content/4/S1/O18>

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Background

There are several methods available using surface topography to estimate the spinal curves in adolescent scoliosis patients. One new method, using the Ortelius 800 device, has been shown to be unreliable [1]. This study will analyze whether the reliability of measurements can be improved with simple positioning techniques.

Procedure

A volunteer patient with scoliosis had standing radiographs taken to document the actual curve dimensions. The Ortelius was used to take repeated measurements of the spine with the patient standing in the usual position. The patient was then positioned using a wide-based stance, with hands forward on the wall to brace themselves in a stable position. In addition, the spinous processes were marked to allow the examiner to more reliably find them each time. Measurements were repeated using these new methods.

Analysis

For each set of measurements, the Ortelius Cobb angles were compared to the x-ray Cobb angles. The amount of variance from x-ray was calculated for each series. The standard technique of measurement produced the most variability. Each of the two new procedures improved the measurements. However, when these procedures were used together, the smallest amount of variability was pro-

duced, making the Ortelius measurements and the x-ray measurements different by an average of only 1.5 degrees.

Conclusion

Although the reliability of the Ortelius 800 device for measurement of scoliosis was not reliable in earlier research, these two methods to improve the stability and evaluation techniques of the patient during measurement have resulted in a marked improvement in the reliability.

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