Abstract

Measurement of Cobb angle is the standard technique used for scoliosis assessment. The challenging task in computerized method lies in totally automating the method of curvature measurement from digital X-ray images. In this paper we presented a method which automatically measures the Cobb angle from radiographs after selection of the end vertebrae of the curve. The image processing methods used shows an appreciable measurement of scoliosis curvature in digital X-ray image, reducing user intervention. The proposed method detects the inclination of the vertebra by identifying the lines of the endplate from edge image, helping in calculating the Cobb angle in the direction of the endplates automatically. An
intra-observer and inter-observer assessment was performed over the radiographs using the manual and the proposed digital method. A level of improvement for Cobb angle measurement is achieved in the proposed computerized image processing technique in terms of estimating the vertebral slope and limiting user intervention.

References

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