

ORAL PRESENTATION

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Prospective 100 first results of immediate scoliosis correction with the new Lyon brace: ARTbrace

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Background

The immediate reducibility of the Cobb angle in brace is the fundamental parameter of success of non-surgical orthopedic treatment of scoliosis.

Aim

The objective of this work is to present the first results of the new Lyon brace (Asymmetrical Rigid Torsion brace) with immediate realization of the brace without plaster cast.

Design

The new Lyon brace is constructed with two asymmetrical lateral polycarbonate pieces connected posteriorly at the midline by a vertical incurved bar. The brace reproduce a twisted column in the opposite direction of scoliosis. The shape is obtained by superposition of three segmental electronic moldings which will be superimposed by a new software: OrtenShape.

Results

The results of a prospective series of the first 100 consecutive patients were studied using EOS X-ray and compared with results obtained by other braces.

Radiologically, in the frontal plane, the immediate in brace reduction is on average (0.72) (0.63 +/- 0.19 for thoracic curves & 0.76 +/- 0.26 for lumbar curves. These results can be classified:

- Depending on the type of curvature:
 - thoracolumbar (0.98),
 - lumbar (0.71),
 - double major (0.67)
 - lumbar (0.67),
 - thoracic (0.64)

- According to the criteria of the SRS (40 cases):
thoracic curves (0.66),
lumbar (0.83)

- According to the initial angulation:
20 -29° = (0.80)
30-39° = (0.65)
> 40° = (0.45)

In 51 cases with initial kyphosis <30°, improving the flat back is 9.25° from 19° to 28.25°.

Clinically, the push-up effect is : 1.64 cm.

After at least 1 month of continuous wearing, for thoracic rib hump improvement is (0.50) and for lumbar (0.85).

The improvement is 40% compared to the old plaster cast and Lyon brace and 60% compared to the Chêneau-Münster brace.

All radiological and clinical parameters improved significantly.

Conclusion

The new Lyon brace (ARTbrace) allows a better immediate in-brace reduction than the old Lyon brace. without need for a preliminary plaster cast.

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