



6th International Anthropological Congress of Dr. Ales Hrdlicka 150TH anniversary of birth.

"All mankind is of one origin"

Ultrasound diagnosis of paravertebral muscles in children with AIS before and after treatment

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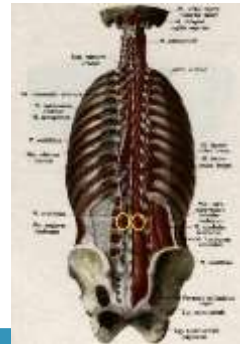
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Abstract

A feature of the paravertebral muscles is multifunctional and organic connection with the spine.

Our previous studies (2016-2018) of the ultrasound characteristics of the paravertebral muscles of children with scoliosis revealed an increase in density and a decrease in the cross-sectional area on the side of the scoliotic arch.



Patients	Level L4	Imm. multifidi			
		left		right	
		Cross-sectional area (sm ²)	Echo-density %	Cross-sectional area (sm ²)	Echo-density %
9 years n=10	lying	2,552 ±3	17,9 ±4	2,482 ±0,4	16,8 ±4
	standing	2,679 ±3,5	17,3 ±3	2,617 ±0,4	19,4 ±4
10 years n=10	lying	2,432 ±3,5	16,2 ±3	2,391 ±0,4	16,6 ±4
	standing	2,541 ±3,5	16,7 ±3	2,981 ±0,4	17,4 ±4
11 years n=10	lying	2,543 ±3,5	17,1 ±3	2,634 ±0,4	18,1 ±4
	standing	2,154 ±3,5	17,8 ±3	2,989 ±0,4	17,1 ±4

Aim

- to conduct an ultrasound examination of the paravertebral muscles in children diagnosed with AIS, receiving complex conservative treatment on the basis of our Center
- identify correlations between the data before and after treatment



Material and methods

58 children with AIS aged from 9 up to 14 years (30 girls, 28 boys):

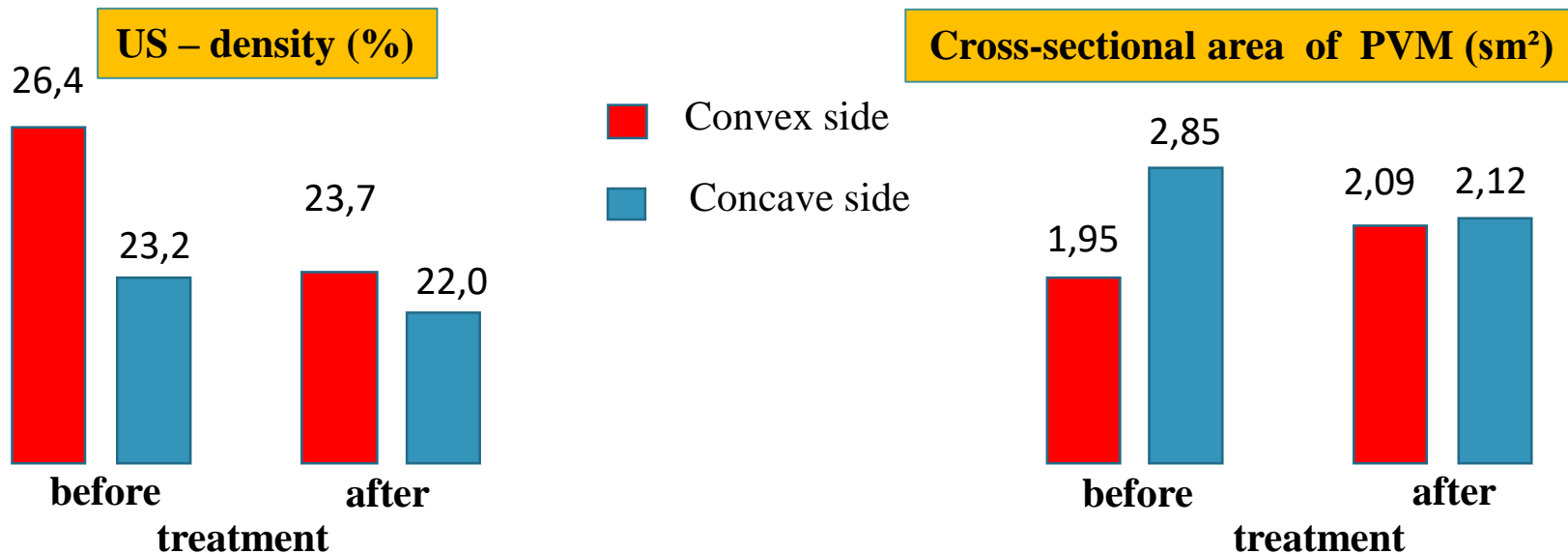
- deformation 1° - 10° by Cobb (29 children)
- deformation 11° - 25° by Cobb (29 children)

Patients were on conservative treatment in «Ogonek» within 42 days and received the complex treatment developed in establishment.



RESULTS

As a result of the ultrasound in children after treatment on the background of positive dynamics there was revealed reduction of density of paravertebral muscles on the convex party of an arch for 10% and increase in cross-sectional area by 26% was revealed. This parameters lead to relative restoration of symmetry of characteristics of paravertebral muscles between two parties up to 7% and 1.4% respectively.



Conclusions

1. As a result of complex treatment of children with AIS, the density of paravertebral muscles on the convex side of the arc decreases and the cross-sectional area increases.

This leads to a relative symmetry of the ultrasound parameters of paravertebral muscles on both sides.

2. The obtained data allow us to use the ultrasound method in assessing the dynamics of treatment of AIS in children. The obtained data allow us to use the ultrasound method in assessing the dynamics of treatment of AIS in children.



Thank you for attention !

