

AGE-SPECIFIC MORPHOMETRIC CHARACTERISTICS OF LUMBAR VERTEBRAL ARTICULAR PROCESSES IN WOMEN ACCORDING TO CONSTITUTIONAL BODY TYPES

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Abstract: The structural and functional state of the vertebral column is closely related to constitutional body types in women. The lumbar vertebrae, particularly their articular processes, undergo significant age-related changes that influence spinal biomechanics and predisposition to degenerative diseases. This study aimed to analyze the morphometric characteristics of the articular processes of the lumbar vertebrae in women, depending on their constitutional body type and age.

Methods

Morphometric measurements of the articular processes of lumbar vertebrae were performed on anatomical specimens and imaging materials obtained from women of different age groups and constitutional types (asthenic, normosthenic, hypersthenic). Parameters such as height, width, and angle of orientation of the articular processes were assessed. Comparative analysis was conducted between age categories (20–35 years, 36–50 years, and over 50 years).

Results

The study revealed that in hypersthenic women, the articular processes are generally broader and more robust, providing relative stability of the lumbar spine but predisposing to hypertrophic changes with age. In asthenic women, the articular processes are narrower and more elongated, leading to increased mobility but also higher susceptibility to spondylolysis and degenerative instability. Normosthenic women demonstrated intermediate morphometric indicators. Age-related changes included a gradual thickening and remodeling of articular processes, most pronounced after 50 years, with a higher frequency of osteophytic growth in hypersthenic types.

Conclusion

Morphometric characteristics of lumbar vertebral articular processes in women show significant dependence on constitutional body type and age. Recognition of these anatomical variations has practical importance in early diagnosis of degenerative spinal diseases, development of preventive strategies, and planning of personalized therapeutic interventions.