Puhachova K. A.

ULTRASONIC CHANGES OF JOINTS IN CHILDREN WITH JUVENILE RHEUMATOID ARTHRITIS

Supervisor: prof. Senatorova G. S.
Department of Pediatrics№1 and Neonatology
Kharkiv National Medical University, Kharkiv, Ukraine

Introduction. Juvenile rheumatoid arthritis (JRA) is an important problem in pediatrics, associated with increasing of disability and reducing quality of life in children population.

An important role in JRA course has detecting of morphological changes in joints. It is becoming increasingly important to provide ultrasound investigation of joins due to diagnostic capabilities of assessing changes in joints.

Aim: to improve diagnosis juvenile rheumatoid arthritis and disease course monitoring in children.

Materials and methods. 20 children with juvenile rheumatoid arthritis and 20 healthy children of control group aged 2 - 16 years were observed. Investigation implied clinical, laboratory, radiological and ultrasonound examination of joints.

Results. The average age of examined children was 9,8 ± 3,7 years. Female were prevailed 80,0%. Rheumatoid arthritis incidence in different age groups was different. Complaints included fever, morning stiffness, pain and swelling of joints, gait disorder. Polyarthritis registered in 12 (60,0 ± 17,3%) children, oligoarthritis in 8 (40,0 ± 14,1%), monoarthritis wasn't registered. Average mean of involved joints was 5 joints. Prevailed (70 ± 18,7%) symmetric involvement of joints. Wrist joints were affected in 11 (65,0 ± 16,5%) children, small joints of hands – in 9 (45,0 ± 15,0%), elbow joints – in 3 (15,0 ± 8,7%). Knee jonts were involved in 13 (65,0 ± 18,0%) children, coxal joint - in 6 (30,0 ± 12,2%) patients, ankle - in 10 (50,0 ± 15,8%), small feet joints – in 3 (15,0 ± 8,7%) children. A single was involvement in inflammatory process of temporomandibular joint and shoulder joint. Radiological changes were registered only in 11 (55,0 ± 16,5%) patients. Osteoporosis detected in 20,0 ± 10,0% children, joint space narrowing registered in 15,0 ± 8,7%, increasing of volume and compaction of periarticular soft tissues in 35,0 ± 13,2%. Joint ulceration and joint subluxations of the affected joint were detected in the single cases. Ultrasound investigation detected changes of jonts in juvenile rheumatoid arthritis patients in all case, that show 100% sensivity of this method. Pathological changes were represented synovitis (95,0 ± 21,8%), thickening of the synovial membrane (65,0 ± 16,5%), vascular sprouting in the synovium (25,0± 11,1%), narrowing of joint gaps (15,0 ± 8,7%), increasing of intraarticular vascularization (45,0 ± 15,0%), tendinitis (40,0 ± 14,1%), bursitis (15,0 ± 8,7%) and joint subluxations (5,0 ± 5,0%).

Conclusion. Radiological method isn't such sensitive in visualization of jont changes in children with juvenile rheumatoid arthritis, as ultrasound investigation, especially in early stages of the disease and can't be reused multiple for disease monitoring. Ultrasound visualizes early changes of joints in patients with juvenile rheumatoid arthritis, has 100% sensitivity and is significantly ($p < 0,05$) more sensitive method of detecting changes compared to the X-ray investigation of joints.