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EARLY ULTRASOUND SIGNS OF COXARTHROSIS IN CHILDREN AND ADOLESCENTS

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Summary

Delay of the start of adequate treatment of coxarthrosis early stages in children and adolescents in most cases is associated with late diagnosis, caused by ulterior radiological signs and smooth clinical manifestation. Currently there are used such traditional diagnostic methods as X-ray, magnetic resonance imaging, computed tomography and ultrasound diagnostics.

Keywords: coxarthrosis, clinical manifestation, diagnostic methods, ultrasound diagnostic, hyaline cartilage, epiphyseal-metaphyseal area of femur.

Introduction

The most common and affordable during the past 100 years X-ray method has its negative effect - radiation exposure. In comparison with it Ultrasound diagnosis has such advantages as safety, noninvasiveness, high informational content, access to a wide practical application, no need for special preparation for study of the musculoskeletal system, the possibility of multiple studies in the same patient over time.

However, ultrasound semiotics of coxarthrosis isn't yet finalized. It focuses mainly the height of hyaline cartilage.

Material and methods

To improve the efficiency of diagnosis and treatment we performed in our clinic since 01/10/14 to 05/25/15 this study using ultrasound diagnosis in children with suspected hip joint pathology (based on anamnestic data, complaints and clinical features). The study was performed with the ultrasonic apparatus Aloka SSD-1100 using a 5 MHz sector transducer. The following parameters were estimated: the height and density of the hyaline cartilage, the contour of proximal epiphyseal-metaphyseal area of femur, the shape and structure of the femoral head, the contours and the structure of the femoral neck.

There were examined 84 patients total. The study group included 49 patients with certain indirect signs of hip joints pathology (fatigue of the lower limbs at the end of the day, pain in the hip joints and knee joints when walking or at rest, moderate painfulness in the hip joints during maximal pronation of femur, slight painful palpation of back and outer surface of the hip joints, hip joints dysplasia in anamnesis, active sports). The control group included 35 children with other orthopaedic disorders.

Results

- reducing the height of hyaline cartilage in 13 patients (27%);
- rough contours of the proximal epiphyseal-metaphyseal area of femur in 26 patients (53%);
- changes in the contours of the head and neck of the femur in 2 patients (4%);
- absence of ultrasound changes of hip joints in 8 patients (16%).

Discussion

Thus, the initial signs of coxarthrosis in children and adolescents (such as hyaline cartilage height and contour of proximal epiphyseal-metaphyseal area of femur) can be identified by ultrasound in combination with its clinical manifestations and anamnestic data much earlier than by X-ray method.

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