The pangonogram allowed us to measure the hip-knee-ankle (HKA) angle, the internal mechanic alpha-femur angle, the Calton index – kneecap height, the beta – internal mechanic tibial angle and the gamma angle – tibial chute. Based on the imaging technique, there were highlighted changes in the bone structure of the left femural head, with a suspicious aspect of an aseptic necrosis, an internally curved tibia and peroneum on the left and secondary left gonarthrosis. The patient was admitted to the Orthopedics Department and underwent the necessary measurements for receiving a personalized knee prosthesis.

Conclusions: This presentation highlights the challenging presentations of gonarthrosis and the modern techniques of diagnosis and treatment.

Key words: gonarthrosis, osteo-articular system, motoric disability, imaging investigations.

SPECT myocardial perfusion imaging for the assessment of the quantity of viable myocardium

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Background: Assessment of viable myocardium (VM) is one of the most important indications in examination of patients with ischemic heart disease and systolic dysfunction of the left ventricle (LV) before planned surgical revascularization. There is a clear dependence of survival of patients with ischemic cardiomyopathy (ICMP) on the quantity of VM. One of the main methods for the assessment of VM is SPECT/SPECT-CT myocardial perfusion imaging. The study aimed to evaluate the role of diagnostic capabilities of SPECT/SPECT-CT myocardial perfusion imaging in the assessment of VM in patients with ICMP and LV ejection fraction (LVEF) <35%.

Material and methods: 48 patients with ICMP and LVEF <35% were examined. The age of the patients varied between 39 – 72 years, with an average of 52.5 ± 7.2 years. SPECT/SPECT CT myocardial perfusion imaging was performed on GE's gamma camera "Infinia Hawkeye" at rest with ECG synchronization. A radiopharmaceutical (RFP) of 99mTc-MIBI with an activity of 7.5 MBq / kg was used. The results of the SPECT/SPECT-CT myocardial perfusion imaging were assessed using a quantitative approach, polar maps, and a 17-segment myocardium model. VM was considered at levels of accumulation of RFP more than 50%. The software ECToolBox and Myovation were used for assessment.

Results: In right coronary artery – stenosis between 90-100%, the RFP absorption was 45.4 ± 12.7% ($p < 0.001$), while the VM was 66.2 ± 6.9%. In 90-100% stenosis in the basin of the right interventricular branch of the left coronary artery, the RFP absorption was 57.2 ± 13.6% ($p < 0.05$), VM – 54.8 ± 7.5%. In 90-100% stenosis in the basin of the envelope of the branch of the left coronary artery, the RFP absorption was 65.1 ± 9.7% ($p < 0.05$), VM – 58.9 ± 5.6%. In patients with lesions of two or three coronary arteries, the RFP absorption was 42.6 ± 9.4% ($p < 0.001$), while the VM was 35.3 ± 8.2%.

Conclusions: SPECT/SPECT-CT myocardial perfusion imaging is a highly informative, noninvasive technique for the assessment of the quantity of viable myocardium in patients with ICMP and low LVEF.

Key words: SPECT myocardial perfusion imaging, viable myocardium, ischemic cardiomyopathy.

Ultrasound assessment of normal adnexa torsion

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Background: Adnexal torsion is a common gynecologic emergency. The evolution of torsion is unpredictable from complete spontaneous detorsion (rarely) to rapid progression and necrosis. Persistence at the stage of edema for several days is also possible. Prompt diagnosis and surgery are important, particularly in young fertile patients to preserve ovarian viability. The purpose of this study was to evaluate the ultrasound features of normal adnexa torsion.

Material and methods: The study included 7 women of reproductive age (including 2 pregnant), referred for ultrasound assessment of clinically suspected adnexal torsion. Out of 7 patients, 6 underwent subsequent laparoscopy. Absence of any additional ovarian pathology was confirmed by both ultrasound and intraoperative inspection. The ultrasound description included ovarian volume, vascularization, ovarian stroma and parenchyma aspect, "whirlpool sign" and tubal edema.

Results: Out of 7 cases, 6 were operated on and the diagnosis was confirmed, including 2 detorsions. In one case spontaneous detorsion has occurred with complete regression of edema within 1 month. Two sonographic patterns of twisted ovaries were noted: (1) unilaterally enlarged ovary with peripherally displaced follicles – noted in 4 cases, including in 2 patients with over 48 hrs after onset of symptoms, and (2) solid-appearing heterogeneous mass with echogenic and/or hypoechoic areas – noted in 3 cases. The "whirlpool sign" was present in 3 patients and tubal edema was present in 1 patient with normal adnexa torsion. Blood flow in the affected ovary was completely absent in only 3 patients.

Conclusions: Ultrasound appearance of normal adnexa torsion may vary according to the duration of the condition. Recognition of different sonographic features of twisted normal adnexa may improve the diagnosis.

Key words: Adnexal torsion, ultrasound, spontaneous detorsion