with the same frequency. Patterns 1 and 2 have larger contact surface for the talus compared to pattern 3. Male bones have larger contact surface for the talus than female bones.

Conclusions. The sum of pattern 1 and pattern 3 frequencies in our study was high, so we concluded that our population is more prone to subtalar arthritis. Knowing how frequent are the different patterns of calcaneal facets for the talus in a certain population is important for orthopaedic surgeons when performing foot osteotomy.

THE PECULIARITIES OF HUMAN AND ANIMAL HUMERUS SYSTEMIC ORGANIZATION AT THE DISTAL EPIPHYSIS LEVEL

Yashina I. N., Ivanov A. V., Ivanov M. A.

Kursk State Medical University, Kursk, Russia

Key words: *system organization, humerus, human, osteometry, factor analysis*

Aim. The main purpose of research is to detect the general patterns and characteristics of the Humerus (H) systemic organization (SO) of the man's and animals with different volumes of movements in the elbow joint at the level of it's distal epiphysis (DE).

Material and Methods. The H Bos tautus Taurus (B) R40/L40, Orycolagus cuniculus (O) — R40/L40, Canis lupus familiaris (C) — 39R/39L, Homo sapiens (H) — R77/L77 were studied using osteometry. There are 23 homologous structures were measured on each bone. A group of angular structures of the DE: corner of torsion, tilt of the diaphysis, the angle of groove of the block up to the plane of condyles. All values were analyzed involved calculating confidence intervals at $\alpha \geq 0.05$ and multilevel Maximum likelihood factors Analysis (FA) with the rotation Equamax normalized and taking into account the lateralization of bones with the calculation of factor loads (FL).

Results and Discussion. There were no differences in the magnitude of the R/L angles. The value of the twist angle varies in the O-B-H-C series from 46 to 81°. The angle of inclination of the diaphysis increases in the series H-B-O-C is from 6 to 37°. Angle of the groove of the block, representing the rotation of the lower limb-O-C-B-H is in the range 46–59°.

Conclusions. The results of the study revealed the presence of a latent asymmetry of the SO of the H at the level of it's DE, which is caused by a change in the number and volume of movements in evolution.

STUDY OF MYOCARDIAL REMODELING MARKERS IN EXPERIMENTAL HISTOTOXIC HYPOXIA

Zadnipryany I. V., Sataeva T. P.

V. I. Vernadsky Crimean Federal University, Simferopol, Russia

tanzcool@mail.ru

Key words: *myocardium, rats, fibrogenesis, hypoxia*

Background. In modern works, there are isolated data concerning the problem of cardiac remodeling and fibrogenesis.

Aim. The available data are ambiguous, so the goal of the study is to study the processes of fibrogenesis and inflammation in the myocardium of sexually mature rats.

Material and Methods. The study was conducted on 25 mature male Wistar rats weighing 220–310 g. The control group was represented by 5 intact animals. A solution of cobalt chloride for the modeling of histoxic hypoxia was introduced through an atraumatic probe into the stomach at a dose of 4 mg/kg, daily once a day for 30 days.

Results and Discussion. The conducted study showed that changes in the myocardium developed, which, according to morpho-functional manifestations, could be attributed to varieties of toxic cardiomyopathy. Hydrophobic dystrophy was observed in the cytoplasm of cardiomyocytes, myocytolysis foci appeared. Masson's staining revealed an excessive amount of collagen fibers in the interstitium, and also in the perivascular space, which apparently made it more difficult to transport substrates and oxygen from the bloodstream to the working cells under hypoxic conditions. Perivascularly and in interstitium, intensely colored macrophages and fibroblasts appeared. Remodeling of the myocardium, which occurs during hypoxic damage, is accompanied by a reorganization of the connective tissue stroma. At the same time, the enzymatic cleavage of the previously existing connective tissue fibers develops and de novo synthesis of interstitial substance according to the new conditions of mechanical loads. The leading role in this process is assigned to the enzymes of the metalloproteinase group. Expression of MMP-9 metalloproteinase was characterized as weakly positive (+) and positive (++) in some parts of the myocardium. Increased expression

of MMP-9 indicated activation of a systemic inflammatory response in case of myocardial damage.

Conclusions. The leading trigger mechanism of fibrogenesis processes is necrosis of cardiomyocytes, leading to the launch of biochemical intracellular signaling processes that initiate a partial change in reparative processes. It is obvious that the development of interstitial fibrogenesis plays an important role in the pathophysiology of myocardial remodeling under conditions of hypoxia and may contribute to the progression of its dysfunction.

THE INTERHEMISPHERIC ASYMMETRY IN GIRLS: VARIABILITY AND CONNECTIONS OF MOTOR AND VISUAL SAMPLES

Zaichenko A. A., Fomkina O. A., Muzurova L. V., Syrova O. V.

V. I. Razumovsky Saratov State Medical University, Saratov, Russia
oafomkina@mail.ru

Key words: *interhemispheric asymmetry, female, motor test, visual tests*

Aim. Identification of variability and connections of the motor and visual tests determined by left or right hemispheres of the brain.

Material and Methods. 129 girls of 18.2±0.6 years considering themselves right-handed persons. The examinee suggested to perform tests: «an interlacing of fingers of hands», «crossing of hands» («Napoleon's pose»), «applauding», «casting leg on a leg» («a leg on a leg»), «visual test» (to look on subject through an opening, alternately closing eyes). Assessment of appeal of photos of the male and female persons made of the left and right half («preference of the photo») was carried out.

Results and Discussion. Noted reliable right-hand domination when performing tests «applauding», «a leg on a leg» and «vision of a subject by the right eye» whereas domination of the left hand in tests «an interlacing of fingers of hands» and «Napoleon's pose» isn't significant is noted. The test «applauding» showing weak, but reliable positive connections with other motor tests is the most informative in diagnostics of domination of the right or left extremity. In images both men, and women, girls attract the photos made of the right half of the persons reflecting «abstract logic» of the left hemisphere. At the same time in a men's image girls attract «the abstract logic», in a female image — «emotional figurativeness» of thinking more attracts.

Conclusions. Motor tests, visual test and test «preference of the photo» represent independent complexes that are explained by difference of the systems which are responsible for their performance.

THE ANATOMICAL OVERVIEW OF A TUNNEL SYNDROME OF A PUDENDAL NEUROVASCULAR FASCICLE

Zhandarov K. A., Laptina V. I., Dydykin S. S.

Sechenov First Moscow State Medical University (Sechenov University), Moscow, Russia
kirill-zhandarov@mail.ru

Key words: *tunnel syndrome, nerves, anatomy, overview*

Aim. During our study we decided to allocate a projection and topographic-anatomic features of a pudendal neurovascular fascicle from foramen infrapiriforme, to define its projection in the gluteal region in order to improve diagnostics and treatment.

Material and Methods. Anatomical research performed on 15 corpses. Each of them included 30 internal pudendal spinal nerve fascicle (SNF).

Results and Discussion. As a result of the study was defined that pudendal vessels and a nerve are defined in a small gap at the entrance of Alcock channel, formed by sacrotuberous ligament sacrospinal ligament, and ischial tuberosity. The gap is defined as the threshold of the Alcock channel in the gluteal region. We have defined the walls limiting it: the forward wall is a sacrospinalligament, the back wall is a sacrotuberous ligament, the lower wall — a ischial tuberosity. The threshold was divided into 2 segments. The first segment — from an exit of foramen infrapiriforme to the upper edge of a sacrotuberous ligament. The second- from the upper edge ofa sacrotuberous ligament. To determine a projection of apudendal SNF there was calculated an average distance from the median body line to foramen infrapiriforme. In the entrance between a sacrotuberous ligament and a sacrospinal ligament the nerve is fixed.

Conclusions. In all cases the epineurium of trunks of sciatic, posterior femoral and pudental nerves was bound in the field of a sacral plexus that can possibly have the reflected character and clinical implications such as syndrome of a piriform muscle and tunnel syndrome of a sexual nerve.