

ANATOMICAL VARIATIONS OF THE AORTIC ARCH BRANCHING PATTERN

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Key words: aortic arch, variations, anatomy

Background. Anatomical variations of the aortic arch and its branches are fairly common and can have important implications on prognosis and management of surgical interventions, as well as on radiological diagnostics and interventional radiology.

Aim. The aim of this study was to present the anatomical variations in branching pattern of the aortic arch in a large group of patients using CTA and consequently to determine their prevalence in our population.

Material and Methods. The study population included 1000 patients with referral diagnoses requiring CTA chest radiography, which visualizes the aortic arch. The course of the aortic arch was clearly observed in all of the 1000 patients. The anatomic features of the aortic arch itself and supra-aortic vessels were analyzed, and anatomical variations were recorded on each CT image.

Results and Discussion. The results showed that 89.3% of the cases had the usual branching pattern of the aortic arch. The most common variation was aortic arch with two branches, with left common carotid artery arising from brachiocephalic trunk (7.9%). Separate origin of the left vertebral artery between the left common carotid artery and the left subclavian artery was present in 2.8% of cases.

Conclusions. The knowledge of the anatomy of the aortic arch and its branches and the awareness of vascular variations is an imperative in diagnostic procedures and in planning surgical interventions during clinical practice.

THE CHANGES OF THE EPITHELIUM OF THE MUCOUS MEMBRANE OF THE MOUTH AND TONGUE AFTER EXPOSURE TO BROAD-BAND RED LIGHT (AN EXPERIMENTAL STUDY)

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Aim, Material and Methods. The aim of the study was to study the nature of the structural and functional features of the epithelium of the oral

mucosa and the tongue of laboratory animals as a result of exposure to broadband red light.

Results and Discussion. As a result of morphological and electron microscopic analysis of the structural changes of the oral mucosa and tongue of 10 rabbits and 120 Wistar rats after exposure to broad-band red light, the absence of severe, irreversible changes in the epithelium, submucous layer and its components, mild and reversible hemodynamic and hemoreological disorders, manifested mainly by the full blood vessels of the microcirculatory bed, in three cases was seen the sludge and stasis of blood in the capillaries, as well as small ones diapedetic hemorrhages with localization in the subepithelial zone.

Conclusions. The data obtained allow recommending the method of photoneuromodulation for wider use in practice when treating patients with the burning mouth syndrome.

MAGNETIC RESONANCE MORPHOMETRY OF THE ADULT NORMAL LUMBAR INTERVERTEBRAL SPACE

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Key words: magnetic resonance morphometry, intervertebral space

Aim. This study aims to a) quantify and evaluate normal relationships between neighboring spinal units by using MR imaging indices, b) propose an easy to apply and reproduce method of estimating the correct amount of distraction when surgically restoring a collapsed intervertebral disc, based on individualized measurements.

Material and Methods. This is a retrospective cross-sectional MR imaging study of 119 adult subjects, aged 18 to 54, asymptomatic for low back pain. Each of the examinees should demonstrate two or more consecutive intervertebral discs classified as Pfirrmann grade I or II in order to be included. We measured and studied the relationships of disc height index, Dabbs index, Farfan index, disc convexity index and mean and posterior disc height per spinal level by using multiple regression analysis. All measurements were tested for intra- and interobserver agreement by two raters.

Results and Discussion. DHI, Dabbs, Farfan, and mean disc height had a statistically significant correlation with the spinal level and age. Our results

were highly reproducible. Furthermore, we expressed each intervertebral space as a percentage of its adjacent space, introducing the coefficient α factor for every intervertebral space.

Conclusions. The results suggest that a normal values' database to refer to during preoperative planning of correction of a degenerated intervertebral disc, is feasible. Our study offers new anatomical and radiological insight in terms of spinal measurements and their potential correlation with current surgical techniques. A new approach for calculating disc space as an expression of its adjacent disc has been introduced, with various potential applications.

EXPRESSION OF THE O-LINKED N-ACETYLGLUCOSAMINE CONTAINING EPIOTOPE H (O-GLCNACH) IN BENIGN PROSTATE HYPERPLASIA (BPH)

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Background. Epitope H contains an O-linked N-Acetylglucosamine residue (O-GlcNAcH) in a specific conformation and/or environment recognized by the site specific mouse monoclonal IgM antibody H (mabH). Epitope H is present in several types of cells and in several polypeptides including keratin 8 and vimentin in the latter in cells under stress. The post-translational modification of the hydroxyl groups of serine and threonine residues of polypeptides by the addition of the sugar moiety N-Acetylglucosamine occurs in many proteins, which are engaged in cell processes such as transcription, translation, protein compartmentalization, proteasomal degradation, which influence cell division, differentiation, development, apoptosis, resistance to stress, and are involved in major diseases such as cancer.

Aim. In the present work we examined the expression of the O-GlcNAcH in the cells of fifty cases of BPH.

Material and Methods. Indirect immunoperoxidase using the mabH. **RESULTS:** A) The luminal epithelial cells of the acini showed low expression of the epitope as the great majority of the cells remained unstained. The minority of stained cells showed the following patterns: Stained coarse gran-

ules in the cytoplasm and/or diffuse stain of the lateral, apical and subnuclear cytoplasmic regions. B) The basal acini cells showed low expression with the minority of stained cells with diffuse cytoplasmic stain. C) Practically all smooth muscle cells showed strong diffuse cytoplasmic stain. D) The inactive fibrocytes remained unstained.

Conclusions. The (O-GlcNAcH) is expressed in a different pattern among the cellular elements of BPH. The (O-GlcNAcH) expression in the luminal epithelial cells of the acini can be served as a base reference in order to compare the (O-GlcNAcH) expression of prostatic carcinoma cells in future studies.

THE INCIDENCE OF ANATOMICAL VARIANTS OF THE BRACHIAL ARTERY

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Key words: upper limb, brachial artery, variants

Background. Nowadays the individual anatomical variability is studied using various classical and modern methods that have become a contemporary direction of morphology.

Aim. The purpose of our study was to highlight the anatomical variants of the brachial artery.

Material and Methods. The brachial artery and its branches were studied on 60 samples (34 angiographs and 26 cadaveric upper limbs). The anatomical dissection marked out: the origin, trajectory, variants and relations of the brachial artery with the neighboring anatomical elements. Anatomical variants were highlighted on 25 upper limbs (UL): 16-male UL (9 right and 7 left) and 9 female UL (6 right and 3 left).

Results and Discussion. A single arterial variant was detected in 6 male UL (4 left and 2 right), and multiple arterial variants — on 19 UL: 10 male UL (6 right and 4 left) and 9 female UL (6 right and 3 left). Bilateral variants were found in 8 cases (5 male and 3 female) and unilateral — in 9 cases: 6 male UL (4 right and 2 left) and 3 female UL (2 right and 1 left). The highest number of numerical variations have been marked out in 13 cases; the variants of origin and trajectory — in 11 cases; various common arterial trunks — in 8 cases.

Conclusions. A wide range of variants is characteristic of the brachial artery and the knowledge of those variations is of clinical significance.