
Abstract
During routine anatomical dissection in the right volar wrist region of a 43-year-old female cadaver, we discovered a unique flexor digiti minimi brevis (manus) muscle. The aberrant muscle arose from the medial edge of the flexor carpi radialis tendon and passed obliquely, distally and ulnarward, crossing over the median nerve and then the ulnar artery and nerve at the Guyon canal. The aberrant muscle inserted to the anteromedial surface of the base of the fifth proximal phalanx. The deep branch of the ulnar nerve innervated this muscle. The potential clinical implications of the variant flexor digiti minimi brevis muscle are briefly described.

52. Георгиев ГП, Димитрова ИН, Желев Л / Georgiev GP, Dimitrova IN, Jelev L. Рядък случай на вариация на a. brachialis и нейното клинично значение / A rare case of a brachial artery variation and its clinical significance. Здраве и Наука / Health and Science 2011; 3: 14-16.

Резюме
В настоящата работа ние съобщаваме едив случай на необичайна a. brachialis superficialis установен у дисециран горен крайник. Тази артерия започваше от средната трета на обичайната a. brachialis и в началната си част беше разположена пред и медиално от n. medianus, като дистално преминаваше от латералната му страна. В областта на fossa cubiti, обичайната a. brachialis (a. brachialis profunda) отделяше a. ulnaris и латерално образуваше дъга, към която се присъединяваше a. brachialis superficialis и продължаваше в a. radialis. Представено е обяснение за възможното ембрионално развитие на a. brachialis superficialis, като е посочено и нейното клинично значение.


Abstract
During routine anatomical dissection of the left anterior forearm of an elderly female cadaver, two separate muscles having characteristics of palmaris longus have been observed. The lateral of the muscles had a typical palmaris longus composition - small proximal muscular belly and a long
distal tendon continuing into the palmar aponeurosis. The second, medial muscle started with a thick tendon from the medial epicondyle of the humerus. Its muscular belly occupied the middle third of the forearm; in the lower third it turned into a short, broad tendon attached to the flexor retinaculum and to the proximal attachment sites of the thenar and hypothenar muscles. The clinical importance of this variation is due to the close relations of the distal tendons with the neurovascular structures in the anterior wrist.


Abstract
During routine student dissections two cases with unusual composition of the rhomboid muscles were observed. In the first case, the rhomboid major layers on both sides of a 65-y-old male cadaver were extremely well developed with increased spinal attachment from T1-T7 spinous processes. In the second case, an additional to the rhomboids muscle was described bilaterally in a 72-year-old male cadaver. This aberrant muscle arose by a thin aponeurosis from the spinous processes of the mid-thoracic vertebrae and was attached laterally to the lowest part of the medial border of the scapula. The reported in the literature variations of the rhomboids are summarized and their possible clinical importance is discussed as well.


Abstract
In this report the authors described an interesting variation in the insertion of the pectoralis minor muscle. It was found during routine anatomical dissections of the upper limbs and shoulder joints. In one left upper limb and one dissected left shoulder joint the pectoralis minor tendon was divided into a lateral portion attached as usual to the coracoid process and a small medial portion attached to the capsule of the shoulder joint and the glenoid labrum. The possible clinical implications of the abnormal pectoralis minor tendon is discussed.


Abstract
We describe a rare case of unusual development of the cerebral cortex in a 2-year-old boy, who died in status epilepticus. The brain regions, corresponding to the normal superior and middle frontal
gyri, were covered with numerous unusually small gyri, a condition consisting with a case of polymicrogyria.


Abstract
Introduction: Retention of surgical instruments in a patient’s body after surgery is a rare but potentially dangerous error. Case Report: A case of a nearly 27 year long history of a patient with a large metal retractor in the abdominal cavity left accidentally after colorectal surgery is discussed here. Conclusion: In the modern surgical era, reports of surgical instruments left accidentally in the body are rare. A radiographic screening of the high risk patients at the end of operation is still a valuable tool in the search for possibly retained surgical instruments.


Abstract
Ansa cervicalis (ansa hypoglossi) is a peripheral nerve structure – the primary choice for laryngeal reinnervation. Because the ansa formation is quite variable in humans, it is an object of a number of proposed classifications. Two interesting cases of formation of the ansa cervicalis were found during routine anatomical dissections. In the first case the unusual ansa had three basic roots – a superior one from the hypoglossal nerve, an aberrant middle root from the vagus nerve and an inferior root, coming from the cervical ventral branches. In the second case an ansa was described having roots from the vagus and hypoglossal nerves. Based on the reported variations and extensive review of the pertinent literature, a new morphological classification of the ansa cervicalis formation in human is proposed here.


Abstract
During routine anatomical dissection of the anterior thoracic wall of a 65-year-old male cadaver, an unusual, well-developed sternalis muscle was observed. This variant muscle started on the right side, nearly at the level of the second rib cartilage. Then it crossed obliquely downwards the midline at the third rib level, and continued into a triangular muscular body that finally inserted to the left sixth costal cartilage.

Abstract
During superficial back dissection of a 72-year-old male cadaver, an interesting aberrant muscle was observed bilaterally below the lower border of the rhomboideus major. The unusual muscle arose by a thin aponeurosis from the spinous processes of the mid-thoracic vertebrae and was attached laterally to the lowest part of the medial border of the scapula. Because of its characteristics the authors proposed the term – the third rhomboid (m. rhomboideus tertius).


Abstract
Two cases of intriguing variations of the iliacus muscle were observed during routine student dissections. In the first case, a partial agenesis of the iliacus muscle was found on the left side of a 58-year-old male cadaver. There were missing slips from the anterior and middle parts of the muscle; additionally, some slips of the posterior part of the iliacus started unusually high from the iliolumbar ligament, thus springing over the posterior iliac crest. In the second case, on the right side of a 64-year-old female cadaver, an unusual small muscular slip from the iliacus was identified, that followed an unusual course through the fibers of the femoral nerve. From the extensive literature review provided, it seems that the variations of the iliacus muscle are not common findings. When occur, however, they might be associated with some variations of the corresponding femoral nerve and thus have clinical significance.


Abstract
The synaptic proteins synaptobrevin/VAMP, SNAP-25, Syntaxin1, NSF and α-SNAP were revealed by means of immunocytochemistry. Materials from the cerebral cortex of adult, newborn and postnatal rats (P6 and P11) were used. Immunostaining for synaptobrevin/VAMP was mainly around the synaptic vesicles, whereas the immunolabeling for SNAP-25 and syntaxin1 was revealed in most cases on the cytoplasmic surface of the presynaptic membrane and to a lesser extend - on synaptic vesicles. Immunostaning for NSF and α-SNAP was found out not only on the axoplasm of
axon endings and varicosities, but also in perikarya and dendrites. In the cerebral cortex of newborn rats, a small number of immunopositive presynaptic parts could be observed. The number of these immunolabeled structures increases evidently with increasing age of rats.


Abstract
This study aimed to investigate on en face preparations the morphological changes in the rat aorta endothelium at the clamping sites while performing surgical anastomosis. Adult male Wistar rats (14-18-month-old, 390-420g) were used for the experiments. Under surgical anesthesia, the postrenal part of the abdominal aorta was dissected, clamped proximally and distally, cut and restored microsurgically using 10-0 suture. The clamping time was 30-40 min. At different days after surgery the animals were sacrificed, their aortas fixed and removed from the body and preparations for en face observation were made. En face preparations, obtained at the first postoperative day, showed complete denudation of the clamping sites. The most interesting endothelial cell population was noted at the borders of the clamping sites on the 3rd day after surgery – a large number of small endothelial cells and also few endothelial cells having very large size. At the later stages, the endothelial cell layer advanced rapidly to the denuded areas, as the complete restoration was observed after day 14.


Abstract
Radiofrequency ablation (RFA) is a relatively new method for endoluminal thermal occlusion of the incompetent saphenous veins. The aim of the present study was to investigate microscopically the changes in the venous wall after routine RFA procedures. Short pieces (n=7) from the knee segment of the great saphenous vein were taken during RFA procedures. The removed vein segments were immersion fixed in 10% formalin and proceed to routine histology examination. Microscopically, the venous wall after RFA showed circular disintegration of the intimal layer. In addition, cylindrical medial lesions with disintegration and intercellular splits and gaps were observed. No transmural thermal lesions were seen. The present results highlight the mechanism of predetermined tissue damage after RFA procedures of the great saphenous vein.

Abstract
An unusual fibrous band in the medial brachial region was found during routine anatomical dissection of the left upper limb of a 67-y-old female cadaver. This interesting structure started from the posterior layer of the pectoral major fascia. The fibrous band emerged from the lower border of the pectoralis major close to its humeral attachment, it then crossed obliquely downwards and posteriorly the medial brachial region and finally it was attached to the medial epicondyle of the humerus. Most probably, this fibrous structure represents a remnant from the chondroepitrochlearis - a variant muscle that is rarely observed in man. Because this fibrous band has very close relations to the brachial vessels and the median and ulnar nerves in the arm, in certain circumstances it may probably cause neurovascular compression.


Abstract
During routine autopsy of a 62-y-old female cadaver, an unusually enlarged frontal sinus was observed. The sinus was abnormally over-developed in both width and height, as the sinus cavity spreads deeply into the frontal tubera. Numerous septa divided the sinus cavity. Because of the obvious dilation of the frontal sinus and the lack of localized bone destruction and hyperostosis, a rare condition called “pneumosinus dilatans” probably occurs in this interesting case.


Abstract
The thalamic reticular nucleus is a thin layer of GABAergic cells located between the external medullary lamina and the internal capsule surrounding the rostolateral surface of the thalamus. It has functionally distinct afferent and efferent connections with thalamic nuclei, the neocortex, the basal forebrain and the brainstem. Parvalbumin is a calcium-binding protein, which is regarded to be a marker for GABAergic neurons. The thalamic reticular neurons are GABAergic, and parvalbumin is always colocalized with GABA in these cells. We have demonstrated the parvalbumin immunoreactivity in the thalamic reticular nucleus at different stages of postnatal
development of rats, as well at 1-year-old rats. It was established that the maturation of immunopositive patterns varies in different parts of the nucleus. The intensity of immunostaining decreases with age.


Abstract
We report a rare case of an aberrant occipital artery found during routine dissection of the right posterior neck and the occipital region of an embalmed 67-year-old Caucasian male cadaver. The right occipital artery, having considerable size (diameter 4 mm), arose from the postero-lateral side of the external carotid artery just above the posterior belly of the digastric muscle. Consequently, the aberrant occipital artery turned laterally around the posterior belly of the digastric and the stylohyoid muscles, reaching the subcutaneous layer as it passed transversely over the upper attachment of the sternocleidomastoid muscle. Distally, the artery showed typical branching pattern. Detailed knowledge about the basic anatomy of the occipital artery, as well as its variations, are highly important in preventing complications during extra-to-intracranial bypass surgery and therapeutic embolization via this vessel. A careful preoperative examination of the artery is necessary to reveal some of its rarest anatomical variation.


Abstract
Ulnar nerve variations in the wrist are rare but still have clinical importance. In the course of a routine dissection of the right hand of a 67-y-old Caucasian male cadaver an aberrant ulnar nerve at the wrist was found. Its superficial branch bifurcated and formed a complete loop around the hook of the hamate bone. The sensory digital nerves arose from the different parts of this loop. The presence of such a variant neural loop predisposes the nerve to compression neuropathy and accidental injury during surgical interventions.


Abstract
Introduction: The brachial artery coiling is an unusual condition with a suggested frequency of less than 1%. This paper reports a case of brachial artery coiling. Case report: Herewith we present an interesting dissectional case of a superficial brachial artery making a full circle (a 360º coil) in the distal part of the brachium closer to the elbow crease. A second, deep brachial artery was also observed in this case. Conclusion: Reviewing the pertinent literature we suggest two main types of arterial sources for the coil formation both of which present some diagnostic and therapeutic challenges.


**Abstract**

The internal jugular phlebectasia is a rare vascular disorder. It is well known in children but infrequently reported in adults. This condition is characterized by an abnormally dilated internal jugular vein that is usually asymptomatic or may cause moderate symptoms of compression. Herewith, we report a case of an asymptomatic right-sided internal jugular phlebectasia in a 37-y-old male patient. During contrast CT angiography of the neck and upper thorax, we accidentally came across an enlarged fusiform segment (maximal diameter 22 mm) of the internal jugular vein. The clinical presentation of this interesting condition and the possible treatment options are discussed.


**Резюме**

Основна причина за аортоилиачната оклузивна болест е атеросклерозата. Метод на избор при усложнената с тежък коморбидитет аортоилиачна оклузия е реваскуларизацията чрез извършването на екстраанатомични байпас операции. Разгледан е пет годишен период 2008-2013 г. на извършените екстраанатомични байпас операции (ЕАБО) в клиниката по съдова хирургия на ВМА. Оперирани са 21 пациента, 18 мъже и 3 жени, при средна възраст 65,5 год. На 16 от тях е конструиран феморо-феморален байпас (ФФБ), а аортофеморален (АФБ) е направен при 4 пациенти, като при трима байпасът е десностранен, а при един двустранен. Конструиран е 1 илиофеморален байпас (ИФБ). Основния е използван протезен материал, но
Summary
The main cause of aortoiliac occlusive disease is atherosclerotic disease. Method of choice in complicated with severe comorbidity aortoiliac occlusive disease is revascularization by extra-anatomical bypass operations (EABO). Five years long period is presented, including 2006-2011 years, when the EABO interventions were performed in the Clinic of Vascular surgery in Military Medical Academy in Sofia. A total of 21 patients were operated, 18 men and 3 women, at average age of 65 years. For 16 patients femorofemoral baypass (FFB) were performed. Aortofemoral baypasses (AFB) were performed on 4 patients, while three of them on right-side and the other one - bypass on both sides. One iliofemoral (IFB) was constructed as well. Prosthesis is the main material used for conduit at reconstructions. In two patients the infected graft was the indication for performing crossover extra-anatomic bypass using greater saphenous vein. The data from short-term and long-term follow-up were analyzed and a summary of the main indications for extra-anatomical bypass operations is presented.


Abstract
In this study we describe a rare case of an aberrant fourth head of the triceps brachii muscle found during a routine anatomical dissection of the left upper limb of an adult European cadaver from the autopsy material, available at the Department of Anatomy, histology and Embryology, Medical university of Sofia. The length of tendon and the fourth muscle belly was 7.5 cm and 3.5 cm, respectively. Like the other three heads, it was also innervated by a branch from the radial nerve. We consider our finding to be of didactic and clinical importance. Though the anatomical variations of the triceps brachii muscle are fairly rare they can be of importance for clinicians who perform surgical interventions on the upper limb. Thus, surgeons, traumatologists, anaesthetists and also anatomists should have knowledge about the incidence of such variations.

Резюме
Подробните познания върху артериалната анатомията в областта на бедрения триъгълник имат основно значение за провеждането на различни хирургични и ендоваскуларни процедури. Сред клоновете на централната артерия в областта – а. femoralis, с най-голямо хирургично значение е дълбоката бедрена артерия - a. profunda femoris (APF), която е основния хранещ съд за бедрената мускулатура както и при необходимост осигурява колатерална мрежа за дисталната част на крайника. В литературата са описани различни анатомични вариации на APF, като най важни сред тях от хирургична гледна точка са вариациите в нивото на отделяне. В настоящата работа се представят данни от нашето проучване върху необичайно високо начало на APF на 200 артериографии и 100 дисецирани долни крайници. Подробно са обсъдени анатомичните особености в нивото на отделяне на APF, съобщаваните честоти, възможните причини за установените анатомични различия, както и потенциалното значение на тези вариации в клиничната практика.

Summary
Detailed knowledges of the femoral triangle’s arterial anatomy are essential for various surgical and endovascular procedures. Among the branches of the central artery in this area - the femoral artery, the greatest surgical importance has the deep femoral artery - profunda femoris artery (PFA). It is the main supplying artery for the hip muscles and, if necessary, provides a collateral network to the distal limb. The literature describes different anatomical variations of PFA, as the most important among them from a surgical point of view is the variations in the level of origin. In this study we present data from our study of the unusually high origin of PFA based on 200 arteriography and 100 dissected lower limbs. Detailed anatomical features in the level of origin of PFA are discussed as well as reported frequencies, possible causes of the anatomical differences and the potential importance of these variations in clinical practice.


Abstract
Teaching heart anatomy for the medical students is a difficult task even for the most experienced professors. A practical approach of teaching complicated structure of the cardiac chambers and their space relations is presented here. It is based on a simple and easily understandable hand-finger model of the human heart showing in once the position of the cardiac chambers and the respective heart valves.

**Abstract**

In addition to the normal textbook description, the hepatobiliary arterial system in man shows many anatomical variations that have definite clinical importance. The presence of aberrant hepatic and cystic arteries may lead to a number of iatrogenic injuries during some open surgical or endoscopic procedures. In the course of routine students’ dissection of a 62-year-old Caucasian female cadaver, an interesting pattern of the arterial supply to the liver and gallbladder was described. In the case reported, an unusually small proper hepatic artery was identified supplying the left liver lobe. In addition, an accessory left hepatic artery was also observed arising from the left gastric artery. Another large variant artery to the liver was also dissected that started from the first portion of the superior mesenteric artery – known as replaced right hepatic artery. The gallbladder, in this case, had two supplying arteries of different origin arising from the small proper hepatic artery and replaced right hepatic artery. This rare and complicated arterial variation might be of considerable importance for liver and gallbladder resections, liver transplants and laparoscopic procedures in this area.


**Abstract**

Accessory fissures that separate aberrant lung lobes are not only interesting anatomical observations, but also have a definite importance as they may cause diagnostic confusion in radiological and pathological evaluations. In the case reported here, a rare type of separation of the left lung by an unusual fissure is described. The left lung of a 67-year-old Caucasian female cadaver showed an accessory fissure that crossed the mediastinal, apical and anterior costal surfaces. The aberrant fissure separated the organ into a small upper-medial-anterior lung lobe (lobus minimus) and a much larger aberrant lobe (lobus magnus). At the pulmonary hilum, the artery, vein and bronchus of the small aberrant lobe were clearly identifiable. During analysis of radiological images such as X-ray and computed tomography, the existence of such aberrant fissures and lobes have to be known in detail in order to separate between simple anatomic variation of the lungs and a number of lung pathologies including scar, pulmonary bulla, atelectasis or even mediastinal mass.
78. Илиев А, Желев Л, Ланджов Б, Котов Г, Палов А, Хинова-Палова Д. Роля на невроналната азотен-оксид синтазата за нормалните физиологичните функции на сърцето. MD 2015; 90(6): 106-109.

Резюме
Скоро след като е идентифициран като „мистериозният”, произлизащ от ендотела релаксиращ фактор за кръвоносните съдове през 80-те години на ХХ век, азотният оксид бързо придобива статута на една от най-важните сигнални молекули в сърдечносъдовата система. Днес, повечето автори считат азотния оксид за медиатор на кардиопротекцията. Откриването (през 1999) на ензима невронална азотен-оксид синтаза, участващ в конститутивната продукция на азотен оксид в миокарда, води до изясняване на ролята на този медиатор в наблюдаваните промени в сърдечната морфология при нормални и патологични условия и в различни периоди от развитието.


Резюме
През последните години с безспорни доказателства бе установено наличието на невронална азотен-оксид синтаза (nNOS) в кардиомиоцитите. Много множество проучвания са проведени по отношение на факторите, които повлияват активността на ензима като например възраст, пол, концентрация, наличие на апостерични модулатори. Все по-голямо значение се отделя и на факта, че активността на nNOS се изменя под действието на свободни радикали генериранi под действието на стресови състояния в човешкия организъм и най-вече по време на оксидативен стрес. Той стои в основата на социално-значимите сърдечно-съдови заболявания като миокарден инфаркт, сърдечна недостатъчност, хипертонична болест на сърцето. При тези заболявания се променя и активността на nNOS в миокарда и кардиомиоцитите.


Abstract
In our study, we investigated the postnatal changes in the myocardium of 15 adult male Wistar rats, distributed in the following age groups: 2 weeks, 1, 3, 6 and 12 months old. We used routine haematoxylin and eosin staining in order to examine the changes that occur in the myocardium of
the rat with aging and immunohistochemical staining for nNOS in order to visualise the location of enzyme expression and activity. During the early postnatal period (1-3 months) we observed normal morphology of the cardiac muscle cells and the interstitial space. As aging progressed (6-12) we described hypertrophy of the cardiomyocytes and more pronounced subendocardial and interstitial fibrosis. The cross section of cardiomyocytes increased, while there was also a less pronounced increase in the cross section of cardiomyocytic nuclei. The immunohistochemical study for nNOS showed that the enzyme spread heterogenously.


Abstract
Nitric oxide (NO) plays a key role in cardiac function by modulating myocardial contractility, oxygen consumption and apoptosis. The ability to produce NO is assessed on the basis of the expression or activity of the nitric oxide synthase (NOS) enzyme. The calcium-dependent neuronal NOS (nNOS) participates in the constitutive production of NO. In the present study, we performed immunohistochemical staining with monoclonal anti-nNOS antibody on nine adult male Wistar rats, distributed in the following age groups: 2 weeks, 1 and 12 months old. In 2-week-old animals, we observed high enzymatic activity along the full width of the myocardial wall in both ventricles. As aging progressed, the intensity of enzymatic activity increased and was observed predominantly in the middle layer in the free left ventricular wall and in subepicardial and subendocardial layers in the wall of the right ventricle. These results are consistent with scientific data for the role of NO in maintaining the function of the aging myocardium, as well as stimulating the growth and proliferation of cardiomyocytes during the foetal and early postnatal period. We also noted a tendency for nNOS localisation along the periphery of the cell as aging progressed, which can be interpreted as hypolemmal localisation. In conclusion, our data show that the levels of enzyme expression are higher under the conditions of age-related hypertrophy induced by high levels of oxidative stress, which most probably has a protective effect with regard to the process of remodelling and fibrosis.