

the head of the fibula and the PTA, FA and NFA origins, the mean PA diameter at the highest point of the fibular head, the mean PTA and FA diameters at their point of origin and the mean NFA diameter at the entrance point to the fibula were measured.

**Results and Discussion.** The mean length of the fibula was 37.05 cm and the mean PA diameter was 6.06 mm. The PTA originated at a distance 8.03 cm from the fibular head with a mean diameter of 3.67 mm. The FA originated at a distance 8.03 cm from the fibular head with a mean diameter of 3.54 mm. The NFA originated at a distance 15.7 cm from the fibular head with a mean diameter 1.3 mm, at its entrance point to the fibula. In 95% of the cases, the PTA entered at the middle third of the fibula. In cases where the NFA was given off from a muscular branch of the FA, the mean distance of the artery's origin from the fibular head was 15.7 cm. Twenty-eight cases of a single FA (93.3%), 1 case of a duplicated FA and 1 case of absence (3.33%) were detected. The PA bifurcated in a PTA and a FA, at the level of the fibular head in 3.3%. In 6.6%, the PTA was hypoplastic, while the FA diameter was 3.8 mm.

**Conclusions.** The position of FA and NFA insertion and particularly the entrance point of the NFA to the fibula have clinical implications for the harvest of osteocutaneous vascularized flaps.

#### SELLA TURCICA MORPHOMETRY AND ITS FLOOR MORPHOLOGY: AN ANATOMICAL STUDY IN DRY SKULLS

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**Key words:** skulls, sella turcica, floor, length, depth

**Background.** Sella turcica (ST) is a concavity in the body of the sphenoid bone situated in the middle cranial fossa and typically contains the pituitary gland. ST shape or size abnormalities can be associated with pituitary gland pathologies and several syndromes.

**Aim.** The aim of the current study is to identify the ST morphometry (length and depth), the morphology of its floor (possible depression or well-formed fossa) and calculating the frequency of each fossa, as well as any possible correlation between them.

**Material and Methods.** ST length and depth and the presence of an indentation (a depression or

a well-formed fossa) on ST floor were evaluated in 122 (60 male and 62 female) Greek adult dry skulls. The indentations were carefully assessed, by using a magnifying loop.

**Results and Discussion.** The mean ST length and depth were  $1.0 \pm 0.2$  and  $0.9 \pm 0.1$  cm. An anterior fossa was observed in 34 skulls (27.9%), a posterior fossa in 58 skulls (47.5%), both anterior and posterior fossae in 19 skulls (15.6%) and no fossa in 11 skulls (9%). Male skulls with anterior or both an anterior and posterior fossae had longer ST than male skulls with posterior fossa or no fossa.

**Conclusions.** ST morphometry and the incidence of each type of ST floor are in accordance with previous studies. This is the first study identifying a correlation between fossa type and ST length in skulls. These findings should be taken into consideration in diagnostic and therapeutic procedures relevant with ST.

#### A SIMPLE METHOD TO ESTIMATE THE ORBITAL FLOOR LINEAR LENGTH IN ADULTS

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**Key words:** orbital floor, infraorbital rim, orbit, formula, reconstruction, repair

**Background.** The orbital floor (OrF) and infraorbital rim (IOR) repair in cases of complete destruction is challenging mainly due to the fact that the defect length cannot be measured.

**Aim.** The aim of the current study is to develop a method of calculating the OrF linear length by using the gender and the linear lengths of the medial, superior and lateral orbital walls (OrW) of the same orbit.

**Material and Methods.** Ninety-seven (59 male and 38 female) European adult dry skulls were classified according to age: 20–39, 40–59 and 60 years and above. The linear length of each OrW was measured by using the direct distance between the optic foramen and a landmark in each orbital rim.

**Results and Discussion.** A side asymmetry was detected for the linear lengths of the inferior, superior and medial OrW. A gender dimorphism was detected, but no correlation with the age was found. Using the Stepwise multiple regression analysis two formulas were developed, one for the right and one for the left OrF with coefficient of determination  $R^2$  0.43 and 0.57, respectively.

**Conclusions.** The proposed formulas represent a simple, applicable and individualized method to calculate the OrF linear length in cases of complete destruction of the IOR and OrF, with accuracy and without the use of expertise material.

#### PEDAGOGICAL MATERIAL CREATED BY AND FOR THE STUDENTS

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**Key words:** education, neuroanatomy, observation, dissection

**Background.** The classic anatomy lessons based on the observation/dissection of cadavers and anatomical pieces do not represent the experience of our students. Especially for head/neck and central nervous system the study is based on books or plastic/wax models. The few dissection sessions are hampered by the high number of students per class and restrictions on contact hours.

**Aim.** In an attempt to improve the quality and quantity of our teaching/learning models in Neuroanatomy, a multidisciplinary team composed of lab technicians, anatomy teachers and students was formed, which has developed several integrated projects. The objective is to promote and foster the research activity for students and simultaneously create pedagogical material for the pre and post-graduate phases.

**Material and Methods.** Between 2013–2018 five projects were developed in order to create anatomical models at the Institute of Anatomy of Lisbon Medical School (FMUL), involving 3–4 pre-graduate students per project. Laboratory techniques such as simple dissection, Klingler's dissection, 2D/3D plastinization, 3D skull and vascular printing, complemented by CT/MRI imaging were developed. The models created are currently in use for Anatomy classes.

**Results and Discussion.** With these integrated projects it was possible to increase and diversify different pedagogical models in Neuroanatomy. It enabled the integration of dozens of students into research work, giving them access to various laboratory, anatomical and imaging techniques.

**Conclusions.** Some of the models can be used in clinical practice, allowing for the planning and training of surgical procedures and also be used for commercialization.

#### RE-DEFINITION OF MINIMAL INVASIVE SURGICAL INCISIONS USED IN ARTHROPLASTIC HIP SURGERY

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**Key words:** hip region, anatomical landmarks, arthroplastic hip surgery

Minimally invasive approaches to the hip show promise for less muscle trauma compared to conventional approaches. However, the surgical incisions used for such approaches are not well defined. Since the surgical window of minimal invasive surgeries are narrow, the risk of damaging the neurovascular structures around the hip is more likely when compared to alternative approaches.

**Aim.** The aim of this presentation is to review the anatomic course of the nerves around the hip region and to define alternative surgical incisions under guidance of standard anatomical landmarks during minimally invasive approaches to the hip to prevent iatrogenic injuries.

**Materials and Methods.** The courses of the superior gluteal nerve (SGN) and inferior gluteal nerve (IGN) and their branches documented on 28 gluteal regions of 14 formalin-fixed cadavers.

**Results and Discussion.** The surgical incisions were suggested by taking the posterior inferior iliac spine, greater trochanter and a line connecting these two points as reference. Based on the results of this review, the safe zone for the SGN and IGN can be suggested to be smaller than previously reported. Use of a minimally invasive direct posterior or lateral approach to this region puts the branches to the gluteus medius at risk. Moreover, a minimally invasive anterolateral approach to the hip may compromise branches to the tensor fasciae latae muscle.

**Conclusions.** Using the surgical incisions defined in this review may decrease surgical morbidity during minimal invasive arthroplastic hip surgery.

#### OLIVE LEAF EXTRACT POLYPHENOLS AND DIABETES MELLITUS

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**Key words:** type 1 diabetes mellitus, olive leaf polyphenols, oleuropein, liver, glutamate

**Background.** Diabetes mellitus (DM) is one of the most common diseases worldwide, affecting 415 million people.

**Aim.** Abnormal glutamate homeostasis may contribute to the pathogenesis of diabetes with its direct