West African College of Morphologists

African Society of Morphology

Anatomical Society of Ghana

2nd WACM International Congress | 4th ASOG National Conference

INTERNATIONAL CONFERENCE of MORPHOLOGISTS

theme FROM THE WOMB TO THE TOMB:
THE ROLE OF MORPHOLOGISTS

Book of Abstracts

October 4 - 6, 2024
University of Ghana
Medical Centre, Accra

A Joint International

Scientific Conference.

2nd WACM International Congress

4th ASOG National Conference

Hosted by the

Anatomical Society of Ghana

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5:30 PM	CLOSING
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PROGRAMME OF ACTIVITIES

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Saturday, October 5, 2024

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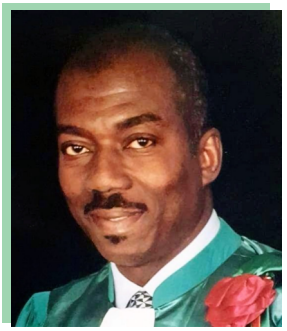
Plenary Speaker Profiles

01 *Speaker Profile*

Professor Alexandre KOKOUA

MD, FWACM, FWACS, FICS



Professor Alexandre KOKOUA, MD, FWACM, FWACS, FICS, is a distinguished medical professional with a notable academic and professional trajectory. He obtained his Medical Degree in 1985 from the University of Cocody in Abidjan, marking the initiation of an illustrious career in the medical field. Over the years, he has made substantial contributions to the domains of Anatomy and Urology. In 1995, Prof. Kokoua achieved the significant milestone of Associate Professorship in Anatomy and Urology, showcasing his depth of knowledge and expertise. His academic excellence and dedication culminated to his attainment of Full Professorship in Anatomy in 2006 while concurrently serving as a Consulting Urologist. His contributions and dedication to the field were further acknowledged in 2018 when he was awarded an Honorary Professorship by the University of Cocody.

Research has been a fundamental aspect of Prof. Kokoua's career, particularly in the realm of Anatomy. His research endeavours have yielded publications in high-impact journals, underscoring his commitment to advancing medical knowledge and practice. Notably, his research has delved into critical aspects of human anatomy, contributing significantly to the understanding of urinary sphincters and their development.

Prof. Kokoua's engagement extends beyond research and academia. He has been an active member of several professional organizations, highlighting his dedication to fostering a collaborative and informed medical community. In 1992, he was a member of the Canadian Urological Association and the Anatomical Society of Paris, showcasing his international involvement and recognition. As a leader and influencer in the medical arena, Prof. Kokoua has held pivotal positions. He served as the Head of the Department of Fundamental and Bioclinical Sciences from 2012 to

2018, contributing to the growth and development of academic institutions. Furthermore, he is a Fellow of the West African College of Surgeons (WACS), demonstrating his commitment to surgical excellence and knowledge sharing within the West African medical community. In 2017, Prof. Kokoua took on the role of Founder and Chairman of the International College of Surgeons/Ivorian Section, showcasing his leadership and initiative in professional organizations. He has also been instrumental in the African Federation, serving as the Associate Secretary in 2019 and later as the Executive Secretary in 2020 of the International College of Surgeons. Prof. Kokoua's dedication extends to being one of the Founding Fathers and Chairman of the African Society of Morphology (ASMO) since 2005, reflecting his influence and contribution to the field. Additionally, he played a significant role in founding the West African College of Morphologists (WACM). Engaging with broader medical communities, Prof. Kokoua is a member of the Scientific Committee of the Pan African Urological Surgeons' Association (PAUSA) and the Ivorian Urological Association. His memberships underline his commitment to collaborative efforts and knowledge exchange at both national and international levels. Furthermore, he is currently dedicated to elevating the Pan African Cancer Research Institute's Ivorian Chapter and actively engaging with colleagues in Ghana to expand PACRI's influence across the West African region.

Intriguingly, Prof. Kokoua balances his demanding professional commitments with personal interests. He actively engages in martial arts, particularly enjoying karate, showcasing his commitment to physical well-being and discipline. Additionally, he finds solace and passion in the world of music, particularly jazz guitar. Overall, Professor Alexandre Kokoua's biography mirrors a life dedicated to the advancement of medical science, collaborative partnerships, and a multifaceted approach to life that encompasses both professional excellence and personal passion.

At this conference, Prof. Kokoua will speak on the topic:

“MORPHOLOGY: A Vast Notion, Deeper Than We Think.”

02 *Speaker Profile*

Professor Frederick Kwaku ADDAI

PhD., FWACM

Frederick Kwaku Addai, PhD., FWACM is an Associate Professor of Anatomy at the University of Ghana, Legon, Accra. He is the current President of the West African College of Morphologists.

A Human Morphology Educator who has since 1985 instructed various undergraduate and postgraduate Health Sciences students in Cell Biology, Cytogenetics, Embryology, Histology, and Neuroanatomy in Ghana, England, and the USA. Prof. Addai has published on the human placenta and the morphological anthropology of indigenous Ghanaians. Over three decades, he studied morphological evidence for the nutraceutical benefits of natural cocoa powder (NCP).

He was the first in the world to report a diet-mediated antimalarial benefit of NCP. He has directly supervised over forty M.Phil./PhD research and over fifty indirectly.

At this conference, he will present the uniquely Negroid quintessential human morphological features that debunk the overblown fallacy that Blacks bear the closest resemblance to apes/monkeys.

MORPHOLOGICAL FEATURES THAT DISTINGUISH HUMANS FROM NONHUMAN PRIMATES ARE EXQUISITELY AND UNIQUELY DEVELOPED IN THE NEGROID PEOPLE

SYNOPSIS

We Negroids have imbricate and wooly hair that naturally curls, the thickest (inside-out lips), the biggest buttock muscles (the quintessence of an upright gait),

a sparse body (non-scalp) hair on skin that is the most melanized among humans, and relatively flat but bigger nose/face ratio. Taken together these morphological features mean that Negroids bear the least ape/monkey resemblances among humans. As Negroid Black morphologists, we have a responsibility to disseminate these facts to debunk social-cultural constructs of race and early pseudo-science biases that fallaciously labelled us as bearing the most resemblances to nonhuman primates. This presentation seeks to arm Black Negroid people with the facts to reject and denounce historical and nuanced self-perception as inferior humans by presenting the morphological features that show why compared to other humans, we bear exquisitely human features distinct from apes/monkeys. Biblical evidence suggests that wooly hair that naturally grows into locks (NOT CULT-ASSOCIATED misnomer DREADLOCKS!) and dark skin may be characteristics of celestial beings including "the ancient of days". For this reason, our wooly Negroid hair should be celebrated and cherished. It is a crying shame that in 2022 reports indicate that Ghana imported USD173 million in fake hair and was the world's 5th largest importer of fake hair. As Negroid Morphologists, we must research better ways to improve traditional grooming of our "bouncy" hair and not subject it to a variety of chemicals and other treatments meant to straighten and alter its colour to look like non-Negroid hair. Ultimately, as people with wooly hair and deeply melanized skin, it is time for Negroid Blacks to appreciate our distinctly unique and quintessential human features and stop responding to sophism and ape/monkey taunts by people who rather have more morphological resemblances to nonhuman primates than us.

Francaise

LES CARACTÉRISTIQUES MORPHOLOGIQUES QUI DISTINGUENT LES HUMAINS DES PRIMATES NON HUMAINS SONT EXTRÊMEMENT UNIQUES AUX NÉGROÏDES

SYNOPSIS

Nous, les Négroïdes, avons des cheveux imbriqués et laineux qui s'enroulent naturellement, les plus épais (lèvres à l'envers), les plus gros muscles fessiers (la quintessence d'une démarche droite), un corps clairsemé (hors cuir chevelu) sur la peau qui est la plus mélanisée parmi les humains, et un rapport nez/visage

relativement plat mais plus grand. Prises ensemble, ces caractéristiques morphologiques signifient que les négroïdes ont le moins de ressemblances entre les singes et les singes parmi les humains. En tant que morphologues noirs négroïdes, nous avons la responsabilité de diffuser les faits pour démystifier les constructions socio-culturelles de la race et les premiers préjugés pseudo-scientifiques qui nous ont faussement étiquetés comme ayant le plus de ressemblances avec les primates non humains. Cette présentation cherche à armer les Noirs Négroïdes des faits nécessaires pour rejeter et dénoncer la perception de soi historique et nuancée en tant qu'humains inférieurs en présentant les caractéristiques morphologiques qui montrent pourquoi, par rapport à d'autres humains, nous portons des caractéristiques humaines exquisément distinctes des singes/singes. Les preuves bibliques suggèrent que les cheveux laineux qui poussent naturellement en mèches (NON ASSOCIÉS À UNE SECTE, nom impropre DREADLOCKS !) et la peau foncée peuvent être des caractéristiques d'êtres célestes, y compris « l'ancien des jours ». Pour cette raison, nos cheveux laineux négroïdes devraient être célébrés et chéris. Il est honteux qu'en 2022, des rapports indiquent que le Ghana a importé pour 173 millions de dollars de faux cheveux et était le 5e plus grand importateur mondial de faux cheveux. En tant que morphologues négroïdes, nous devons rechercher de meilleures façons d'améliorer le toilettage traditionnel de nos cheveux « rebondissants » et de ne pas les soumettre à une variété de produits chimiques et d'autres traitements destinés à lisser et à modifier leur couleur pour ressembler à des cheveux non négroïdes. En fin de compte, en tant que personnes aux cheveux laineux et à la peau profondément mélanisée, il est temps pour les Noirs Négroïdes d'apprécier nos caractéristiques humaines distinctement uniques et quintessentielles et d'arrêter de répondre aux railleries des singes et des singes de personnes qui ont plus de ressemblances morphologiques avec les primates non humains que nous.

03 *Speaker Profile*

Professor Mark Mawutor TETTEY

MBChB, FWACS

Professor Mark Mawutor Tettey is a Professor of Cardiothoracic Surgery in the Department of Surgery. He was the immediate past Head of Department of Surgery. UGMS and has served as the Acting Director of The National Cardiothoracic Centre from December 2022 to May 2024. He completed School of Medical Sciences, KNUST in 1992 and qualified as a Fellow of the West African College of Surgeons in 2002 as a cardiothoracic surgeon. His research interest is into outcomes of pathological conditions that required surgical intervention and has published over 70 articles in reputable peer reviewed journals.

OESOPHAGEAL DISEASES AND MANAGEMENT: KNOWLEDGE AND IMPACT OF MORPHOLOGY

SUMMARY

The oesophagus is a neuromuscular tube that connects the pharynx to the stomach. It is the only internal organ that traverses 3 body cavities. The normal function of the oesophagus depends on the neuromuscular and the barrier mechanisms.

Diseases of the oesophagus include congenital anomalies, functional abnormalities, tumours, diverticular diseases, and trauma. Infections of the oesophagus occur in immunocompromised individuals. The symptoms of oesophagial disease and the approach to surgery to partially or totally remove or repair the oesophagus is significantly linked to morphological knowledge.

The colon and the jejunum are oesophageal substitutes and could be used when

the oesophagus is partially or totally resected. The functions of these substitutes are satisfactory but not entirely like the original. The stomach is also used when it is mobilized and pulled to connect to the intrathoracic oesophagus or the pharynx after partial or total oesophagectomy. This is also generally regarded as a substitute but, it rather eliminates the function and the presence of the oesophagus by directly connecting it to the pharynx in the typical case of total oesophagectomy.

The oesophagus is a simple but important organ in the body. A disease or trauma affecting this organ to necessitate its repair or replacement employs a detailed morphological understanding.

04 *Speaker Profile*

Professor Samuel Antwi OPPONG

Bsc., MBChB, FWACS, FGCS, MPH

Prof Samuel Antwi Oppong is a former Head of Dept of Obstetrics and Gynaecology at University of Ghana Medical School and a Consultant Obstetrician and Gynaecologist at Korle Bu Teaching hospital, Accra. He has over 20 years' experience as a practicing obstetrician and gynaecologist. He research is focused on high risk pregnancy and its management and outcomes. He has led several large multi-country cohort studies and clinical trials in maternal and newborn health. He is the director of the multi-disciplinary sickle cell disease obstetric program in Korle-Bu with five satellite clinics across Ghana and a former co-director of the Perinatal Assessment Centre at Korle-bu. He is also the Editor in-Chief of the Ghana Postgraduate Medical Journal. Prof Oppong's research work is funded mainly by The Bill and Melinda Gate Foundation (BMGF) and The National Institute of Health (NIH).

FETAL GROWTH RESTRICTION: THE MORPHOLOGICAL ROOTS OF ADULT DISEASE

SYNOPSIS

Fetal Growth Restriction (FGR), occurs when the fetal weight is less than 10th centile on the growth chart, and such a fetus has failed to reach its genetically predetermined size due to various pathological processes. Obstetricians are concerned about FGR because of its associated increased perinatal morbidity and mortality and more importantly, emerging evidence suggesting that FGR may have long-term consequences, predisposing individuals to chronic diseases in adulthood. This concept is central to the "Developmental Origins of Health and Disease" (DOHaD) hypothesis, which posits that adverse conditions during fetal development can have lifelong health effects.

FGR may result from a combination of factors such as placental insufficiency, maternal malnutrition, infections, and genetic abnormalities. These adverse factors create a suboptimal intrauterine environment, which compels the fetus to adapt through various physiological and morphological changes, including altered organ development, reduced cell numbers, and changes in the vascular and metabolic systems. For example, the brain-sparing effect of chronic hypoxia from placental insufficiency may result in asymmetric growth patterns where the abdomen is disproportionately smaller than the head. These adaptations, while protective in the short term, can lead to structural and functional deficits in organs such as the heart, kidneys, and pancreas.

The morphological changes associated with FGR can be the precursor for various adult-onset diseases; eg, reduced nephron number in the kidneys can predispose to hypertension and chronic kidney disease in adulthood; alterations in pancreatic development may affect insulin production and increase the risk of Type 2 diabetes. Cardiovascular diseases, including coronary artery disease and stroke, are also more prevalent in individuals who experienced FGR, likely due to impaired vascular development and endothelial dysfunction that originates in utero.

The mechanistic pathway from FGR to adult disease involve a complex interplay

between genetic predisposition, epigenetic modifications, and environmental exposures. Epigenetic changes, such as DNA methylation and histone modification, can result from nutrient deficiencies or hypoxia during critical periods of development. These changes can have lasting effects on gene expression, influencing metabolic pathways, inflammatory responses, and cellular aging. Additionally, a "thrifty phenotype" is often observed in individuals with FGR, characterized by a metabolic profile adapted to nutrient scarcity in utero. However, when exposed to a nutrient-rich environment postnatally, this phenotype increases susceptibility to obesity, metabolic syndrome, and cardiovascular diseases.

The linkage between FGR and long-term adult health underscores the importance of prevention, early diagnosis and treatment. Interventions during pregnancy, such as improving maternal nutrition, managing maternal diseases, and monitoring fetal growth, are crucial for preventing FGR.

Additionally, understanding the epigenetic and molecular mechanisms underlying these linkages could open new avenues for preventive strategies and therapeutic interventions to mitigate a lifelong health risk associated with FGR.

05 *Speaker Profile*

Professor Ajediran Idowu BELLO

SBAHS, University of Ghana

Professor Ajediran Idowu, BELLO is the Coordinator of Postgraduate Programmes in the Department of Physiotherapy, University of Ghana. He is a Researcher and Clinical Educator with vast experience in the design, implementation, and evaluation of high quality academic and rehabilitation programmes. He serves

as a chairman/member of many statutory committees and boards in the University of Ghana. He is also an External Examiner, Reviewer and Academic Assessor for other universities and government parastatals. Professor Bello is a Foundation Fellow of the Postgraduate Physiotherapy College of Nigeria. He has contributed immensely to the national and international professional bodies. As a testament to his contributions, he received a prestigious Award on Service to Education in Africa, by the World Physiotherapy Body at Dubai, the United Arab Emirate in June 2023.

His talk at this conference is titled **'Gluteal Triangle as a Diagnostic Yardstick for Gluteal-related Low Back Pain: A proposed Patho-anatomical Approach for Physiotherapists.'**

06 *Speaker Profile*

Doctor Dickson MAWUSI

Bsc (Hons)., MSc., PhD

Dr. Dickson Mawusi started his career and worked as a full-time Clinical Embryologist and the head of the In Vitro Fertilization (IVF) Department and Laboratory at the first IVF and fertility Centre in Ghana (Provita Specialist Hospital, in Tema), founded by Dr. Joseph Mainoo of blessed memory. He has over twenty (20) years of clinical practice in Assisted Reproductive Technology (ART). Dickson graduated in 2012 from the School of Medicine at the University of Leeds, UK, where he studied for his Master's degree in Clinical Embryology under the supervision of Prof. Helen Picton, Dr. David Miller, Dr. John Huntriss, and Dr. Jan Hogg.

During his PhD studies at the School of Medicine and Dentistry (KSMD), Kwame Nkrumah University of Science and Technology (KNUST), he got involved in

research at the Anatomy Department and the IVF Unit of Airport Women's Hospital, under the supervision of Prof. (Mrs.) Chrissie Stansie Abaidoo (Head of Anatomy Department), KNUST, Kumasi, and Prof. Frederick Kwaku Addai (former head, Department of Anatomy) of the University of Ghana Medical School, Accra - Ghana. His research focussed on the association of Anti-Mullerian Hormone (AMH) with the quantity and quality of oocytes in IVF patients in Ghana. He currently serves as a Consultant Clinical Embryologist and Fertility Specialist, and Lecturer at the University of Health and Allied Science (UHAS), Ho.

INFERTILITY, ASSISTED REPRODUCTIVE TECHNOLOGIES (ART) AND GENETIC TESTING

SYNOPSIS

Infertility affects millions of people – and has an impact on their families and communities. Estimates suggest that approximately one in every six people of reproductive age worldwide experience infertility in their lifetime. Infertility may be caused by several different factors, in either the male or female reproductive systems. However, it is sometimes not possible to explain the causes of infertility (Idiopathic).

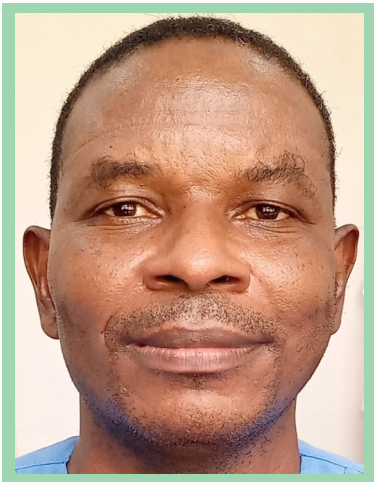
There are many reasons for individuals and couples to seek Assisted Reproductive Technology (ART) treatment., including female infertility, male factor infertility, unexplained infertility, secondary infertility (infertility after a previous successful pregnancy), and the use of a gestational carrier. Some who choose to use ART do not meet the traditional definition of infertility (i.e., not conceiving after 6 or 12 months of unprotected intercourse, depending on age); this includes individuals wishing to prevent genetic disease, same-sex couples, or single patients who require donor gametes, those pursuing sex selection, and those interested in fertility preservation. Fertility preservation may be used when health-related issues or medical treatments affect future fertility, such as gonadotoxic treatments for cancer or delayed childbearing. The reasons for seeking treatment will likely continue to change over time.

ART is not synonymous with In Vitro Fertilization (IVF) and less-invasive treatments may be an appropriate first step in many instances. For some individuals and couples, initial approaches may include timed intercourse or intrauterine insemination (IUI). Reasons to consider IVF as a first-line therapy include the need for any of the following: preimplantation genetic testing (PGT), a gestational carrier, donor oocytes, or intracytoplasmic sperm injection (ICSI) for patients with significant male factor infertility. Regardless of the indication, it is important to note that the IVF process can be physically, emotionally, and financially demanding.

07 *Speaker Profile*

Doctor Paul Matutezulwa MATONDO

MGCS, MPhil., DMD



Dr. Paul M. Matondo is an orthodontist with over a decade of experience in both clinical practice and teaching & learning, currently serving as the Acting Head of the Department of Oral Biology at the University of Ghana Dental School, College of Health Sciences, Korle-Bu Campus.

Born and raised in the Democratic Republic of Congo, he studied Dental Surgery in Rabat, Morocco, which laid the foundation for his career in dentistry. After completing his studies, he practiced general dental surgery in Sogakope, Ghana, for six years before specializing in Dentofacial Orthopedics and Orthodontics with a particular interest in Human Anatomy.

His work focuses on advancing research in craniofacial development and the biomechanics of tooth movement, with a commitment to bridging the gap between basic sciences and clinical applications. In his current role, he is actively engaged in shaping the strategic direction of the department to foster more collaborative research efforts.

At this conference, Dr. Matondo looks forward to exchanging ideas with fellow morphologists and exploring new ways to integrate morphological research into oral health advancements.

EVOLUTION OF HUMAN DENTITION: INSIGHTS INTO CRANIOFACIAL DEVELOPMENT AND ORTHODONTIC IMPLICATIONS

SUMMARY

This presentation explores the evolutionary trajectory of human dentition, focusing on the anatomical and functional changes over time and their implications for modern dentistry and orthodontics. It covers:

1. Early Human Dentition: Overview of prehistoric dentition and its adaptations to diet and environment.
2. Evolutionary Changes: Examination of significant changes in tooth morphology and dental arches from early hominins to contemporary humans.
3. Impact on Craniofacial Structure: How changes in dentition have influenced overall craniofacial development and skeletal morphology.
4. Clinical Relevance: Insights into how understanding the evolution of dentition can inform orthodontic treatment strategies and dental care.
5. Research Implications: Discussion on how evolutionary perspectives can enhance research in dentofacial biology and improve clinical outcomes.

The talk aims to provide a glimpse into the understanding of how the evolution of human dentition impacts both clinical practice and ongoing research in orthodontics and dentistry.

08 *Speaker Profile*

Doctor Teddy TOTIMEH

MBChB, MPhil, FWACS, FGCS

Teddy Totimeh trained at the University of Ghana Medical School, and completed his training in Neurosurgery at he Korle Bu Teaching Hospital under the West African College of Surgeons Programme. He sub specializes in Paediatric neurosurgery having completed a fellowship in Liverpool at the Alderhey Children's Hospital. He is a fellow of the Ghana College of Surgeons.

He is active in neurosurgery advocacy and leadership across the continent and holds executive committee membership of (International Society of Paediatric Neurosurgery, the Society for NeuroOncology SubSaharan Africa, Africa Partners

Medical, the Science History Institute and Ghana Spina Bifida Foundation. He currently runs a private neurosurgery practice at Lucca Health Medical Specialty Center where he is Medical Director, and Accra Medical Center. He is a Senior Lecturer in Neuroanatomy and Neurosurgery at the Accra College of Medicine.
He loves music, swimming and scrabble and is a struggling student golfer. He is Chairman of Eisenhower Fellowships Ghana Chapter.

NEUROENDOSCOPY: NEUROANATOMY KNOWLEDGE AND NEUROTECHNOLOGY SYNERGISING FOR PATIENT CARE

Introduction

For a long time approaching targets in the deeper recesses of the brain required long surgery that put a lot of normal brain at risk, collateral damage was a foregone conclusion. In the last 30 years the invention of the neuroendoscope, with associated adapted instruments and Neuronavigation has made deep targets hitherto unreachable by surgical lighting and therefore unsafe to operate on, visualisable.

Case Presentation

In this rare case a young baby presents with a quadrigeminal arachnoid cyst situated posterior to the brainstem and compressing it forward against the clivus. Associated hydrocephalus had resulted in slowed development and strabismus. With preoperative imaging and trajectory planning it was possible to plan a safe access to this deeply seated arachnoid cyst, create a window in its wall and make a hole in the floor of the third ventricle to bypass the intra ventricular obstruction. Postoperative imaging confirms the reversal of the brainstem anterior displacement and reduction in periventricular transusation. Child remains well, and will be followed up with frequent out patient consults.

Conclusion

A combination of neuroanatomical knowledge, neuroradiological and neuroendoscope makes it possible to aim for a deeply seated target, visualise and deal with it.

Abstracts

for Scientific Presentations

A0 ABSTRACT TITLES AND AUTHORS

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A1

Screening for CEA, SCC-Ag and CA 125 in cervical cancer patients in Ghana

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ABSTRACT

Background: Innovative screening techniques like tumour markers could help address barriers to cervical cancer prevention, particularly in resource-deprived areas.
Aim: This study aimed to estimate the concentrations of serum biomarkers for cervical cancer (Cancer Antigen 125 - CA 125, Carcinoma Embryonic Antigen - CEA, and Squamous Cell Carcinoma - SCC Antigen) in Ghanaian patients with cervical cancer and healthy individuals while analysing the correlation between these biomarkers and cytologic findings.
Methodology: Blood samples from 72 participants were utilized, and different testing methods, like ELISA was used for testing SCC Antigen and CLIA was used for CA 125 and CEA, employed to evaluate serum biomarkers. Pap smear results were obtained from hospital records for cervical cancer patients.
Results: The study revealed that individuals diagnosed with cervical cancer had a mean age of 48 years, with late-stage diagnoses impacting a significant portion. Higher levels of biomarkers were found in cancer patients compared to healthy individuals, with varying relationships between biomarker concentrations and histologic types observed.
Discussion and conclusion: Although elevated levels of SCC-Ag, CEA, and CA125 were noted in cervical cancer patients, no direct correlation with disease stages was evident in the Ghanaian population. This pilot study emphasizes the potential of serum biomarkers in cervical cancer diagnosis but underscores the complexity of correlating biomarker levels with disease progression, highlighting the need for further research in this area.

A2

Influence of Pesticides Exposure During Pregnancy on Placenta Biomarkers and Birth Outcomes in Tomatoes Growing Communities in the Offinso North District

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ABSTRACT

Background: The components of synthetic pesticides are known to influence placental nutrients transfer and variation in adenyl cyclase signaling activity leading to cell development disruptions. Placenta, an important transport organ, mediates in transfer activities between the pregnant woman and the foetus. **Objective**: The objective of this study is to determine influence of pesticides exposure during pregnancy on placental protein – and DNA-based biomarkers and birth outcomes in tomatoes growing communities. **Methods:** The study will include 384 pregnant women in the attending antenatal care service and agree to deliver at Akomadan, Nkenkasu and Afrancho Government Hospitals. A semi-structured questionnaire will be used to take information from mothers on pesticides use during pregnancy, Gross placental indices will be measured. Histological sectioning of thickness of 5µm will be stained and observe under light microscope at different magnifications. Placental protein-based and DNA-based biomarkers as well as exposure levels of pesticides will be extracted from maternal serum. Odds ratios of exposure to pesticides during pregnancy will be estimated. Multiple linear regression models will be developed to establish relationship between levels of pesticides exposure during pregnancy and placental biomarkers expressions as well as birth indices outcomes. **Expected outcomes:** Findings of the study will include to establish a strong relationship between pesticides exposure during pregnancy and adverse placental biomarkers and neonatal outcomes., This placento-ecological study will be the first of its kind among vulnerable women whose socioeconomic livelihoods depend on the tomatoes value chain in Ghana. Also the outcome of this study will have global responsibility whereby countries with low resources can replicate to inform policy directions on pesticides use on maternal and neonatal health. This study will provide strong empirical evidence to inform large population-base study in the Ashanti region and across the country.

A3

Chemical Composition Of A Fresh Latent Fingerprint On The Surface Of A Non-Porous Microscopic Slide

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ABSTRACT

INTRODUCTION: Law enforcement agencies use fingerprints for identification because the print pattern contains fine ridge details which is individualistic based on the assumption that, it is characteristic for each individual and each finger for the same individual and it is unique, infallible and does not change over time. Currently, fingermarks found at the crime scene are used for identification, verification and mark-to-mark comparison using the pattern that is left behind. Fingermarks contain additional information than just the pattern of the ridges. Crime scene investigators can use the chemical knowledge of the chemical composition of the fingerprint to increase the evidential value and obtain additional information about the donor. In cases or situations where the donor of a fingermark is unknown, information such as drug usage or handling of certain items such as explosives may leave exogenous contaminate and its residues in the fingermark, this may help in the verification of testimonies. In cases where a fingermark retrieved from a crime scene is distorted or badly developed such that, individualizing it is not possible, the chemical composition of the fingermark and its residues can be used to obtain a tactical calculated donor profiling information which can be tended in as evidence. **AIM:** To determine the detailed chemical composition of a fresh latent fingerprint on the surface of a non-porous microscopic slide. **METHOD:** A total of thirty-six (36) latent fingerprints (18 sebaceous and 18 eccrine) from 6 donors (3 males and 3 females) from the Department of Anatomy, School of Medical Sciences, KNUST were extracted using dichloromethane. The fingerprint extracts were then subjected to gas chromatography mass spectrometry (GC-MS) analysis. The obtained mass spectra were further evaluated to identify the compounds using the National Institute of Standard and Technology (NIST) database. **RESULTS:** Ten sebaceous compounds were identified in the 18 sebaceous latent fingerprints whilst two compounds were identified in the eccrine fingerprintns. **CONCLUSION:** The present study has provided some baseline data on the chemical components of latent fingerprints which can be used for intra-donor and inter-donor variability as well as age-dating of latent fingerprints.

Keywords: Fingerprint, Compound, Gas Chromatography Mass Spectrometry (GC-MS)

A4

Digitopalmar dermatoglyphic patterns are associated with children living with cerebral palsy and their mothers

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ABSTRACT

Introduction: Dermatoglyphics describes the frequency and configuration of epidermal ridges on the soles, digits, and palms. The patterns develop under genetic influence during embryogenesis and remain unchanged after birth. Some dermatoglyphics have been shown to associated with some health conditions.
Aim: To investigate the digital-palmar dermatoglyphic patterns associated with cerebral palsy (CP).
Method: One hundred and thirty-two individuals made up of 33 children living with cerebral palsy, and their mothers, and 33 children without CP and their mothers were recruited by convenient sampling. Seven dermatoglyphic variables were analysed under direct visualization by two independent observers on Palmar prints of both hands obtained with a biometric scanner. Pearson's Chi-square test was used to compare the frequencies of the variables between the study groups.
Results: Loop is the predominant pattern in the two hands among all the study groups. Right thumb, left thumb, left index and middle fingers showed increased whorl and arch patterns and decreased loop among CP children compared to those without. The right index finger, left thumb, and index finger of the mothers with CP children had lesser loop but increase whorl and arches than mothers without CP children. The average a-b ridge count for CP children in the left palm (34.55 (SD=4.2) was significantly less than in the left palm for the normal children (36.33, SD = 2.7; p = 0.044).
Conclusion: Some digito-palmar patterns are associated with children living with cerebral palsy and mothers of children living CP.

A5

Anatomical variations of the termination of the portal vein and its left branch

Ndoye JM, *Alhussien N, Ndiaye Ab*

ABSTRACT

Introduction
The most posterior vessel of the hepatic pedicle, the portal vein must be dissected into the hepatic hilum during liver surgery.

Aim
To study the anatomical variations and biometry of the mode of termination of the portal vein (PV) and its left branch.

Method
From October 2023 to January 2024 we exploit twenty-four vascular molds of the hepatic venous network obtained by the injection-corrosion method. This involved revisiting the pieces of anatomical work carried out on the portal vein at the Laboratory of Anatomy and Organogenesis of the Faculty of Medicine of Dakar at Cheikh Anta Diop University. These were pieces from fresh adult subjects of both sexes free from any hepato-bilio-pancreatic pathology or trauma.

Results
We observe three types of ending of the PV on all 24 specimen. It was a type A (91.66%), type B1 (4.16%) and type B3 (4.16%). We observe an "Y" division (79.16%), a "T" division (16.66%) and a trifurcation (4.16%). The angle of division varied from 85 degrees to 180 degrees with an average angle of 133.7. The average diameter of the VP at its termination was 14.52 mm. The average length of the left branch of the VP was 33.91 mm, its diameter was 10.56 mm. The left lateral vein was single in 58.33% of cases. The average length of the left paramedian vein was 16.83 mm, its diameter was 11.06 mm.

Conclusion
Our study confirms the large number of interesting variations in the mode of termination of the portal vein and its left branch on the morphological and biometric levels, thus highlighting its surgical interest.

A6

MORPHOLOGIE DE L'AURICULE GAUCHE CHEZ LE SENEGALAIS : A PROPOS DE 36 PIECES ANATOMIQUES

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RESUME

Introduction :
L'auricule gauche, vestige embryonnaire dormant, jouerait un rôle majeur dans les modifications hémodynamiques cardiaques, l'homéostasie volumique et la formation de thrombi. Elle constitue dès lors une cible thérapeutique. Sa morphologie est extrêmement variable.

Objectif :
Il consistait à déterminer ses variations morphologiques ainsi que leur intérêt dans la prévention des thrombi chez le sénégalais.

Matériel et méthode :
Il s'agissait d'une étude par dissection de 36 cœurs frais avec prélèvement de l'auricule gauche chez des sujets anatomiques sénégalais ayant inclus les auricules d'aspect morphologique normal. La morphométrie de l'auricule a été étudiée par la méthode de moulage au plâtre frais et congélation. Les données obtenues ont été analysées statistiquement.

Résultats :
L'âge moyen des patients était de 33 ans avec un *sex ratio* de 1,06, la forme en choux fleur était dominante avec 57 % des cas et celle en cactus (4 %) était moins fréquente. La forme en choux fleur présentait une angulation nette par rapport aux autres sans différences significatives en fonction de l'âge.

Conclusion :
Ce travail a montré une grande variabilité morphologique de l'auricule gauche. Il peut constituer une mise au point sur la spécificité du sénégalais. La prise en compte de ces variations est importante dans la gestion des affections hémodynamiques et l'amélioration de la prise en charge des récidives d'AVC.
Une étude par injection corrosion serait un plus pour une meilleure garantie d'une chirurgie sûre et sécurisée.

Mots clés : auricule gauche - morphologie - variations anatomiques - AVC.

A7

Estimation Of Height From Armspan And Foot Length Measurements Among Medical Students Of The University For Development Studies

Mohammed Abdul Kadil, *Eric Faakuu, Emmanuel Osabutey.*

ABSTRACT

Introduction: The scientific literature emphasizes the significance of stature in assessing human health and forensic identification. Measuring stature is essential for evaluating growth, development, nutrition, physiology, and drug management. In cases where direct stature is not feasible, alternative measurements like arm span and foot length are used to estimate height.
Therefore, the current study aims to add to the body of knowledge in anthropometry using arm span and foot length as means of height estimation.

Methods: A cross-sectional study was carried out on 220 medical students at the School of Medicine, University for Development Studies, 134 (60.9%) were males and 86 (39.1%) were females with age ranged from 19 to 43 years. Height was measured using a stadiometer. The arm span was measured using a stainless-steel measuring tape. The foot length was measured using vernier caliper. Data was analyzed using Microsoft Excel and SPSS version 25. Correlation analyses was done to determine the relation between standing height and arm span and foot length. Linear regression was used to derive equations for predicting height from foot and arm span measurements. Independent t-test was used to determine the means between male and female arm span and foot length and the right and left arm span and foot length measurements.

Results: The mean age of the participants was 23.89 ± 4. 54(range: 19-43) years There was a strong positive correlation between height and arm span (r=0.680) and foot length(r=0.692). Male participants were significantly taller than female participants($P<0.05$). Arm span and foot length measurements were significantly higher in males than females ($p<0.05$). The equation for predicting height from female arm span has the highest coefficient of determination (R^2) value (57.80%).

Conclusion: The study has established a strong correlation between height and arms span and foot length measurement. The study findings serve to add to the limited knowledge on the use of arm span and foot length in height estimation.

A8

ETUDE MORPHOLOGIQUE DE LA PYRAMIDE NASALE CHEZ LA POPULATION NIGERIENNE : Etude Prospective sur 4 mois à propos de 334 cas colligés au service d'ORL de l'Hôpital Général de Référence de Niamey du 28 janvier au 28 Mai 2024

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RESUME

Introduction : La pyramide nasale, comprenant peau, cartilage et muqueuse, est essentielle pour la respiration et l'esthétique. Ses caractéristiques varient selon les groupes ethniques et ont des implications lors des interventions chirurgicales comme la reconstruction faciale. Au Niger, il existe un manque de données spécifiques sur les caractéristiques nasales.
Objectifs : Ainsi cette étude vise à fournir une analyse détaillée des variations anatomiques de la pyramide nasale dans cette population, en tenant compte de la race, du sexe et des morphologies faciales.
Méthodes : Cette étude prospective a été menée du 28 janvier au 28 mai 2024 à la consultation ORL de l'Hôpital Général de Référence de Niamey. Les participants ont été mesurés pour diverses caractéristiques nasales.
Résultats : L'étude a inclus une majorité de femmes (57,19%). L'âge moyen était de 35 ans. En termes de race, 98,20% des participants étaient mélanodermes. Les types bréviligne (44,61%) et longiligne (38,62%) étaient prédominants. La forme du visage la plus courante était ovale (22,75%), suivie de rectangulaire (17,37%) et ronde (12,87%). Les mesures de la pyramide nasale ont montré une hauteur moyenne de 39,6 mm, une largeur alaire moyenne de 39,61 mm, et une distance pli alaire - pointe du nez de 19,57 mm.
Conclusion : L'étude a fourni des informations sur les caractéristiques anatomiques de la pyramide nasale chez les mélanodermes nigériens. Ces informations permettent d'adapter les traitements médicaux et esthétiques aux caractéristiques locales, et prendre en compte les spécificités géographiques et démographiques dans les études anthropométriques pour obtenir des résultats optimaux.
MOTS CLÉS : Pyramide nasale – Morphologie – Variation - Nigerienne

A8

MORPHOLOGICAL STUDY OF THE NASAL PYRAMID IN THE NIGERIEN POPULATION: Prospective study over 4 months about 334 cases collected at the ENT department of the General Reference Hospital of Niamey from 28 January to 28 May 2024

KARIM YACOUBA GARBA [1,2], *NDEYE BIGUE MAR* [4], *DJAFAROU ABARCHI BOUBE* [3], *ASMAOU MOUMOUNI SIFAOUA* [1], *KADRE ALIO KADRE OUSMANE* [5], *ASSANE NDIAYE* [2]

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ABSTRACT

Introduction: The nasal pyramid, comprising skin, cartilage and mucosa, is essential for respiration and aesthetics. Its characteristics vary according to ethnic groups and have implications during surgical procedures such as facial reconstruction. In Niger, there is a lack of specific data on nasal characteristics.
Objectives: Thus, this study aims to provide a detailed analysis of the anatomical variations of the nasal pyramid in this population, taking into account race, sex and facial morphologies.
Methods: This prospective study was conducted from 28 January to 28 May 2024 at the ENT clinic of the General Reference Hospital of Niamey. Participants were measured for various nasal characteristics.
Results: The majority of women were included in the study (57.19%). The average age was 35 years old. In terms of race, 98.20% of the participants were melanoderms. The types bréviligne (44.61%) and longiligne (38.62%) were predominant. The most common face shape was oval (22.75%), followed by rectangular (17.37%) and round (12.87%). The nasal pyramid measurements showed an average height of 39.6 mm, an average wing width of 39.61 mm, and a distance fold-wing - nose tip of 19.57 mm.
Conclusion: The study provided information on the anatomical characteristics of the nasal pyramid in Nigerian melanoderms. This information allows the adaptation of medical and aesthetic treatments to local characteristics, and takes into account geographical and demographic specificities in anthropometric studies to obtain optimal results.
KEYWORDS: Nasal pyramid – Morphology – Variation - Nigerien

A9

Prandial Cocoa and Wound Healing in Experimentally Induced Type 2 Diabetic Rats

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ABSTRACT

Background: Diabetes-related wounds (DW) are of major medical and societal concerns as they take longer time to heal, resulting in a higher risk of infections and limb amputation. Hyperglycemia, a major factor for delay in DW healing inhibits angiogenesis and growth factors release necessary for wound healing. Insulin-like growth factor (IGF)-1 protein is crucial for wound healing but hyperglycemia in diabetes influences its expression.

Significance: Cocoa is well known to contain flavonoids, which are beneficial for vascular health, anti-inflammatory, and antioxidant capacities. Cocoa is therefore beyond basic nutrition and has potential therapeutic use, specifically in relation to diabetic wound healing.

Methods: Type 2 diabetes was induced in male Sprague Dawley rats (15 - 17 weeks old). One diabetic group obtained (DC) was treated with voluntary ingestion of natural cocoa suspension for four weeks while the second group (DU) was untreated. Dorsal open wound was created on all animals. Four time points (days 0, 3, 7, and 14) biopsies were taken. Hematoxylin and Eosin staining and immunohistochemistry were done. ANOVA and Kruskal-Wallis tests were employed to evaluate the rate of wound healing.

Results: Percentage wound contraction within the diabetic treated group (DC) was significantly higher between days 7 to 14 (86.187 %; p= 0.0066) compared to diabetic untreated (DU) (80.572%; p = 0.0124). Epidermis thickness, dermal cell count and IGF-1 protein expression within the diabetic cocoa treated group were equally significant compared to the untreated group.

A10 Contributions of novel microRNA genes and inflammation in schizophrenia and bipolar disorder and the impact of antipsychotics

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ABSTRACT

Background: MicroRNAs (miRNAs) are a subcategory of small non-coding RNA that control protein coding-mRNA expression at the posttranscriptional level. Inflammation is observed in multiple psychiatric disorders including schizophrenia (SCZ) and bipolar disorder (BP). The effects of psychosis-associated miRNAs on their targets in incorporating antipsychotics has not been significantly investigated, and this is the focus of this study.
Method: Using Nanostring mature miRNA profiling and quantitative real time PCR (qRT-PCR) in the orbitofrontal cortex (OFC) of SCZ ($N = 29$), BD ($N = 26$), and unaffected control ($N = 25$) subjects. Also, we explored the effects of antipsychotics on neurons and astrocytes. Immunocytochemistry was performed on the neuronal cell cultures.
Results: The miRNA, miR-223 was increased in the OFC of SCZ and BD patients with positive history of psychosis at the time of death but was inversely associated with deficits in the expression of its targets glutamate ionotropic receptor NMDA-type subunit 2B (*GRIN2B*) and glutamate ionotropic receptor AMPA-type subunit 2 (*GRIA2*). Also, miR-223 levels in the OFC were positively and negatively correlated with inflammatory and GABAergic gene expression, respectively. Interestingly, antipsychotics reduces miR-223 levels in neurons and astrocytes.
Conclusion: Taken together, our results demonstrate that miR-223 and inflammation were elevated in the brain of psychosis patients with SCZ and BP. Antipsychotics attenuated miR-223 levels in neurons and astrocytes, which suggests a role of the miRNA, miR-223 therapeutic management of psychosis.

A11

Histomorphological Evidence Shows Balb C Mice Are Suitable Animal Models For Swine Hepatitis E Virus Infection Studies

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ABSTRACT

Introduction: Hepatitis E Virus (HEV) is responsible for 20million cases and 50,000 deaths annually around the globe. Swine (sHEV) from pigs have been successfully isolated in Ghana. Given the relative difficulty of keeping pigs as laboratory animals, it is desirous to create pathogenicity of the virus in relatively easier-to-keep laboratory animals such as mice to promote research studies.
Aim of Study: This study sought to determine whether inoculation of Balb C Mice with sHEV would result in typical liver pathogenicity consistent with Acute Viral Hepatitis. **Methods**: Approval for the study was obtained from University of Ghana Institutional Animal Care and Use Committee (UG-IACUC). A total of 10 Balb C Mice, aged 4-6 weeks, weighing 18-20g were left to acclimatize in the Infectious Animal Experimentation Laboratory (Noguchi Memorial Institute for Medical Research) for a week. Animals were subsequently placed in 2 groups; Group A was pre-treated with intraperitoneal (ip) dexamethasone 2 mg/kg body weight followed by ip inoculation with 0.2 mls of high dose (1.9×10^5 Genome Equivalent copies) of sHEV while Group B (negative control) received ip PBS. Animals were euthanised 2 weeks post-inoculation and their livers were harvested and routinely processed with Haematoxylin and Eiosin for stereological assessment of volume density of immune cells and necrotic tissues. Alanine Transaminase (ALT) was measured as a gauge of liver function. The data was analysed using Graph Pad Prism 5 with a level of significance less than 0.05.
Results: Immune cells and necrotic tissues were present predominantly in the periportal and perivenular regions of infected animals with relative volume densities 50% and 74% higher than that of the controls respectively. Connective tissue trabecular was also apparent along the interlobular spaces of infected mice serving as precursors of scarring. ALT levels in sHEV-inoculated animals were more than two times higher than controls indicating ongoing hepatocellular injury. **Conclusion**: The Balb C mouse demonstrated histopathological changes consistent with Acute Viral Hepatitis following inoculation with sHEV, hence can be recommended as a suitable model for HEV studies.

A12

Assessment of femoral neck-shaft angle on plain radiographs among adult population in the Volta region of Ghana

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ABSTRACT

Surgeries on the proximal femur are among the commonest in orthopaedic surgical practice to restore the femoral anatomy to normal as far as possible. Variations of femoral neck-shaft angle have been reported among different populations. All angled orthopaedic implants and aiming devices are designed according to the values of femoral neck-shaft angle obtained from the Western literature which differs from the Ghanaian population. This research aimed to generate baseline data on the femoral neck shaft angle among the adult population in the Volta region. A retrospective study was conducted using 214 (90 males and 124 females) selected anteroposterior pelvic radiographs that were obtained between 2016 to 2021 at the St. Anthony Hospital, Dzodze, Volta Region, Ghana. The femoral neck-shaft angle was measured using an in-built calibrated protractor of the DICOM software to the nearest 0.1 degree. The study found the femoral neck-shaft angle in males to be 126.9 ± 5.7° and 127.4 ± 5.2° for the right and left side, respectively. In females, the femoral neck shaft angles for the left and right were recorded as 126.7 ± 5.9° and 126.7 ± 5.3°, respectively. The study concludes that the femoral neck shaft angle (FNSA) among the study population was recorded to be between 126.7^0 to 127.4^0. There was no significant difference in FNSA between males and females and between the right and left sides. The femoral neck-shaft angle can be helpful to orthopaedic surgeons performing hip replacement surgery in cases of femoral neck fractures or avascular necrosis.

Keywords: Femoral neck-shaft angle (FNSA); Radiographic; femur; Volta; laterality.

A13

CARACTERISTIQUES ANATOMIQUES DE L'EXTREMITE PROXIMALE DU FEMUR CHEZ L´ADULTE : ETUDE RADIO-ANATOMIQUE II

Ba Abdoulaye

ABSTRACT

Introduction :
La maitrise de l´informations contenues dans ce squelette permet de résoudre des énigmes, d´anticiper sur des problèmes de santé. L'extrémité proximale du fémur a été exploré sous plusieurs angles et recèle d'informations capitales. Le but de notre travail est de relevé les caractéristiques anatomiques de extrémités proximales du fémur dans la population Sénégalaise.

Matériels et méthodes :
Nous avons réalisé au service d´orthopédie traumatologie de l´hôpital Général Idrissa POUYE des mesures de 180 fémurs sur des radiographies bassin de face stricte le diamètre de la tête, le diamètre du col, la longueur du col, l´angle cervico-diaphysaire et le diamètre de la diaphyse fémorale. Les données ont été analysées avec le logiciel Spss 25.

Résultats :
La médiane du diamètre du col était de 43mm au fémur droit et 42mm au fémur gauche.La médiane du diamètre du col était de 29mm des deux côtés tous sujets confondus. La médiane de la longueur du col 90mm des deux côtés. La médiane de l´angle cervicodiaphysaire était de 130 degrés á droite et de 132 á gauche. La médiane du diamètre du canal diaphysaire était de 14mm des deux côtés. La comparaison montre que les données sont identiques entre deux fémurs chez la même personne et qu´elles étaient supérieures chez l´homme par rapport á la femme.

Conclusion :
Nos résultats sont intermédiaires entre plusieurs résultats dans le monde, cela montre que la population Sénégalaise est assez spécifique.

A14

Rapports entre la veine circonflexe fémorale latérale et l'artère profonde de la cuisse : Étude cadavérique dans une série malienne

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Résumé :

Introduction : La veine circonflexe fémorale latérale est une affluente de la veine fémorale profonde. Elle passe en avant de l'artère profonde de la cuisse. Les études sur les rapports entre la veine circonflexe fémorale latérale et l'artère profonde de la cuisse sont rares.

Objectif : de cette étude était d'étudier les rapports entre la veine circonflexe fémorale latérale et l'artère profonde de la cuisse par la dissection cadavérique dans une série malienne.

Méthodologie : Il s'agissait d'une étude transversale, réalisée au Laboratoire d'Anatomie de Bamako. La veine circonflexe fémorale latérale et l'artère profonde de la cuisse ont été disséquées 124 fois.

Résultats : Le plus fréquent des rapports entre la veine circonflexe fémorale latérale et l'artère profonde de la cuisse était la modalité classique (la présence d'une seule veine circonflexe fémorale latérale qui passait en avant de l'artère profonde de la cuisse) avec une prévalence de 58,9% (n=73). Les variations ont été observées dans les 51 autres cas (41,1%). La plus fréquente de ces variations était la présence de 2 veines circonflexes fémorales latérales qui passaient en avant de l'artère profonde de la cuisse (n=17 cas soit 13,7%). La présence d'une seule veine circonflexe fémorale latérale qui passait en arrière de l'artère profonde de la cuisse a été observée dans 16 cas (12,9%).

Conclusion : Les variations des rapports entre la veine circonflexe fémorale latérale et l'artère profonde de la cuisse sont fréquentes. La connaissance de ces variations est importante dans les interventions chirurgicales sur le trigone fémoral.

A14

Relationships between the lateral femoral circumflex vein and the deep artery of the thigh: Cadaveric study in a Malian series.

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ABSTRACT:

Introduction: The lateral femoral circumflex vein is a tributary of the deep femoral vein. It passes in front of the deep artery of the thigh. Studies on the relationships between the lateral femoral circumflex vein and the deep artery of the thigh are rare.

Objective: of this study was to study the relationships between the lateral femoral circumflex vein and the deep artery of the thigh by cadaveric dissection in a Malian series.

Methodology: This was a cross-sectional study, carried out at the Bamako Anatomy Laboratory. The lateral femoral circumflex vein and the deep artery of the thigh were dissected 124 times.

Results: The most common relationship between the lateral femoral circumflex vein and the deep thigh artery was the classic modality (the presence of a single lateral femoral circumflex vein that passed in front of the deep thigh artery) with a prevalence of 58.9% (n=73). Variations were observed in the other 51 cases (41.1%). The most common of these variations was the presence of 2 lateral femoral circumflex veins that passed in front of the deep thigh artery (n=17 cases or 13.7%). The presence of a single lateral femoral circumflex vein that passed behind the deep thigh artery was observed in 16 cases (12.9%).

Conclusion: Variations in the relationships between the lateral femoral circumflex vein and the deep thigh artery are common. Knowledge of these variations is important in surgical interventions on the femoral trigone.

A15 Canine Index: A Tool For Sex Determination In Ghana

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ABSTRACT

Introduction:
Dental records play a significant role in identifying a person. Canines are the most stable teeth, which exhibit the greatest degree of sexual dimorphism.

Aim:
The study aimed to generate detailed baseline data on the use of the canine for sexual dimorphism and identification of young adults.

Method:
A convenience sampling technique was employed to sample a total of 100 participants (35 males and 65 females) aged18-42 years. Ethical approval was sought from the Committee on Human Research, Publications and Ethics, Kwame Nkrumah University of Science and Technology. Informed consent was sought from participants. Dental impressions were made using alginate powder and study models were prepared using dental stone.

Results:
Measurements of right and left mesiodistal width of the mandibular and maxillary canine, and Intercanine distances were taken using Digital Vernier Calipers. The mandibular and maxillary canine indices were estimated from these measurements. The means of the right and left mandibular and maxillary mesiodistal widths, as well as the mandibular and maxillary intercanine distances, were sexually dimorphic. Binary logistic regression analyses showed that models employing the right mandibular mesiodistal width, left mandibular mesiodistal width, right maxillary mesiodistal width and maxillary intercanine distance were good and statistically significant in predicting sex. The best model was the left mandibular mesiodistal width, which correctly predicted 31.4% males and 92.3% females, with an overall prediction accuracy of 71.0%.

Conclusion:
The results of the present study suggests sexual dimorphism and is a useful tool for biological profiling and provides baseline data for further studies.

A16

Histomorphological evidence shows probiotics protect against brain cell and volume density loss in stress-induced depressed mice

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ABSTRACT

Introduction: Gut microbiota influences the gut-brain axis, affecting mental disorders like depression. Probiotics alleviate depressive symptoms by modulating neurotransmitters. However, probiotic effects on brain histomorphology remain unclear.
Aim: This study investigated the effects of probiotics on stress-induced depression in a murine model.
Methodology: An experimental study design was employed, in which 36 female Imprinting Control Region (ICR) mice (6-8 weeks old; 19-25g) were randomly put into nine groups. 10^8 CFU/ml and10^4 CFU/ml as respective high and low doses of lactobacillus, bifidobacterium, and mixed formulation were administered to the different groups. Fluoxetine (10mg per Kg body weight) was used as the standard control. Unpredictable chronic mild stress (UCMS) model was used to induce depression in mice. Weekly weight of animals and sucrose preference were captured as indicators of depression. Stereological techniques were used for cell count and volume density. Serum brain-derived neuropathic factor (BDNF) was measured with ELISA as a marker of depression. Ordinary one-way ANOVA was used to compare the means in the treatment and control groups, followed by Tukey's multiple comparison test.
Findings: Increased anhedonia and decreased weight loss from the UCMS were reversed in all probiotic-treated groups. Neuronal cell count and volume density of cells in both the PFC and CA1 hippocampal regions were higher in treated groups compared to the stressed group without treatment (especially in high-dose-treated groups). Serum BDNF levels were however not significantly different in treatment and control groups.
Conclusion: Probiotics significantly increased nerve cell count and volume density in both PFC and CA1 regions. Probiotic action appears to be dose-dependent. Probiotics did not significantly alter serum BDNF levels.

A17

Effect Of Cocoa On The Liver In Rats Exposed To Formalin Fumes

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ABSTRACT

Background: Formalin (FA), a concentrated form of formaldehyde used to preserve deceased bodies, is a colorless gas in aqueous solutions with a strong odor. It poses health risks, including liver damage, skin irritation, and respiratory issues. Given cocoa's rich content of flavonoids and other nutrients with known antioxidant and anti-inflammatory benefits, this study aimed to test the hypothesis that cocoa could mitigate the harmful effects associated with formalin exposure. **Aim:** This study determined the effects of natural cocoa intake on liver in rats exposed to formalin fumes. **Methodology:** This was an experimental animal study carried out in the department of animal experimentation, Noguchi memorial institute for medical research. Fifteen male Sprague-Dawley rats (8-10 weeks old) were randomly assigned to three groups of five each: Control (G1), Formalin exposed (G2), and Formalin plus Cocoa treated (G3). The rats' weights were recorded before the experiment and weekly thereafter. At the end of the study, all rats were euthanized. Blood samples were collected for biochemical analysis, and liver tissues were processed histologically to assess the damage to hepatocytes and the central vein. **Results:** The results indicated significant differences in total bilirubin, ALT, AST, and ALP levels between the formalin-exposed group and the control group, suggesting that natural cocoa drink might have beneficial effects on liver health. Histological analysis showed that formalin exposure led to degeneration and densely stained (pyknotic) hepatocytes, while the cocoa-treated group exhibited less liver damage compared to the formalin group. However, analysis of the mean volume density of the central vein was not statistically significant when compared with controls ($p>0.05$). **Conclusion:** In conclusion, natural cocoa drink appears to have a protective effect on liver hepatocytes but does not impact the central veins.

A18

Anatomical variations of the aortic arch: a descriptive cross-sectional study of autopsy specimen

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ABSTRACT

Background: Anatomical variations of the aortic arch branching are common due to its complex embryonic development. While most variations are asymptomatic, some, like the bovine arch (Type II), are associated with an increased risk of surgical complications or vascular diseases. The prevalence of these variations differs among populations.

Aim: To document variations in the aortic arch branching in the study population in Ghana.

Method: The aortic arch and its branches were examined in 31 adult post-mortem bodies at Korle-Bu Teaching Hospital's Pathology Department. The frequencies of the various branching patterns were categorized. Differences in the branching patterns between sex and the association between branching type and the cause of death were compared using Chi-square tests. One-way ANOVA comparison of the external and internal diameters at the beginning, midpoint, and end of the arches among the different patterns was done. Statistical significance was set at p-value <0.05.

Results: Four aortic branching variants (types I, II, III, and VI) were identified. Type II (bovine) arch was the predominant (15, 48.4%) pattern followed by Type I (41.9%). No significant association was found between sex and aortic arch variant. Atrial contribution to left ventricular failure (ACLVF) due to hypertensive heart diseases (HHD) was the cause of death in 7 out of 15 individuals with Type II arch.

Conclusion: Type II is the most common aortic arch branching pattern, unlike most reports. While sex has no influence on the aortic type, type II arch appears to be a high risk of developing ACLVF and HHD.

A19

Une artère circonflexe fémorale médiale passant en avant la veine fémorale : Rapport d'un cas bilatéral

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Résumé

Introduction : Le passage de l'artère circonflexe fémorale médiale en avant de la veine fémorale est une variation anatomique extrêmement rare. Il peut conduire à une fistule artéio-veineuse iatrogène après un cathétérisme cardiaque. Nous rapportons ici le premier cas bilatéral de passage de l'artère circonflexe fémorale médiale en avant de la veine fémorale.

Rapport de cas : Lors d'une dissection sur le trigone fémoral chez un sujet cadavérique de sexe masculin, âgé de 73 ans, une ACFM passant en avant de la veine fémorale a été observée au niveau des deux côtés. Des deux côtés, elle prenait origine de la face antéro-médiale de l'artère fémorale. Elle se dirigeait en bas et en dedans. Elle a passé en avant de la veine fémorale et du muscle pectiné avant de passer entre ce dernier et le muscle long adducteur. Du côté gauche, elle passait au-dessus de l'arc de la grande veine saphène, du côté droit, elle passait au-dessus de l'abouchement de la veine circonflexe iliaque superficielle dans la veine fémorale.

Conclusion : L'artère circonflexe fémorale médiale passant en avant de la fémorale est extrêmement rare. La connaissance de cette variation est importante pour les chirurgiens cardiovasculaires lors des interventions endovasculaires telles que le cathétérisme cardiaque ainsi que pour les radiologues lors la réalisation de l'échodoppler ou de l'angioscanner.

A19

A medial circumflex femoral artery passing anteriorly to the femoral vein: Report of a bilateral case

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ABSTRACT

Introduction: The passage of the medial circumflex femoral artery anterior to the femoral vein is an extremely rare anatomical variation. It can lead to an iatrogenic arteriovenous fistula after cardiac catheterization. We report here the first bilateral case of passage of the medial circumflex femoral artery anterior to the femoral vein.

Case report: During a dissection on the femoral trigone in a 73-year-old male cadaver, a medial circumflex femoral artery passing anterior to the femoral vein was observed on both sides. On both sides, it originated from the anteromedial aspect of the femoral artery. She was traveling downwards and inwards. It passed in front of the femoral vein and the pectineus muscle before passing between the latter and the adductor longus muscle. On the left side, it passed above the arc of the great saphenous vein, on the right side, it passed above the junction of the superficial circumflex iliac vein into the femoral vein.

Conclusion: The medial femoral circumflex femoral artery passing in front of the femoral is extremely rare. Knowledge of this variation is important for cardiovascular surgeons during endovascular interventions such as cardiac catheterization as well as for radiologists when performing Doppler ultrasound or CT angiography.

A20 Serum phosphoinositide 3-kinase (PI3K) levels as a predictor of obesity-induced breast cancer

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ABSTRACT

Background: Female breast cancer is the most frequently diagnosed cancer and the leading cause of cancer-related deaths among women globally. Obesity promotes the incidence and progression of numerous cancer types including breast cancer. Obesity induces chronic low-grade inflammation in adipocytes, which promotes immune dysfunction characterized by elevated pro-inflammatory cytokine production. These consequently disrupt several signalling pathways including the activation of the phosphoinositide 3-kinase (PI3K) pathway involved in cell proliferation and angiogenesis. PI3K dysregulation has been implicated in obesity-related adipogenesis and breast carcinogenesis resulting in aberrant cell growth and proliferation, and survival of mammary epithelial cells. and thus, has become a candidate marker for screening
Aim: To assess serum PI3K levels in women to explore its association with breast cancer development. **Method:** Thirty-two breast cancer patients and age-matched healthy controls were recruited. Anthropometric measurements (height, weight, waist-to-hip ratio, breast size) and clinicopathological data were collected from participants. Additionally, 5 ml of peripheral blood was drawn from each participant, and serum PI3K levels were quantified using an ELISA assay. **Result:** There was positive correlation between PI3K concentrations and overweight, and obesity in breast cancer women but no significant difference in serum PI3K concentrations between breast cancer patients and healthy controls (p-value 0.193). However, significant differences were observed between triple-negative breast cancer and HER2+ enriched-like breast cancer subtypes (p-value .005). **Conclusion:** Serum PI3K levels may have the potential as a biomarker to differentiate between triple-negative breast cancer and HER2+ enriched subtypes, though further research is required to validate these findings

A21

Fingerprints and Monozygotic Twin Identification: a study in two Public Universities in Ghana.

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Background
Fingerprints is used as reliable biometric identifiers for over a century due to their uniqueness and permanence. Ridge patterns are formed within 3 months in-utero and remain constant throughout one's life. This makes fingerprint analysis a key tool in criminal investigations, security systems, and human identification. However, the challenge arises when dealing with monozygotic twins, who share nearly identical genetic material, posing difficulties in distinguishing them through genetic analysis alone. While monozygotic twins may have striking similarities in their physical and genetic traits, their fingerprints are not monozygotic due to the influence of both genetic and environmental factors during foetal development.

Aims and objectives
This proposal seeks to investigate the distinctiveness of fingerprints between identical twins, examining their variations, and exploring the forensic applications of fingerprint analysis in differentiating monozygotic twins.

Methodology
Fingerprint samples will be collected from sets of monozygotic twins in Ghana from the University of Energy and Natural Resources and University of Health and Allied Sciences. An informed consent and ethical approval will be sought from the Committee on Human and Research Ethics from the University of Energy and Natural Resources, Sunyani. The fingerprints of both hands will be scan and analysed using advanced fingerprint recognition software to identify ridge pattern differences, ridge counts, total ridge count, minutiae and tri-radii and in accordance to USA federal Bureau of investigation. The data will be entered into MS Excel (365 Version) and analysed with SPSS. The obtained results of the monozygotic twins will be compared using Student's t-test and Chi-Square Analysis. The critical value for statistical significance will set at 0.05.

Expected outcomes
The results will have significant implications for forensic science, particularly in criminal investigations involving twins. Again, the results will show the reliability of using fingerprint analysis to differentiate twins, even in the most challenging forensic cases.

A22 Immune Crosstalk in HIV-Helminths Co-Infection: Linking Cytokine and Virome Profiles to Colorectal Cancer

A23 Revisiting Acute kidney injury models COPUM , CAKUT, POSTCARDS: concepts, limitations, functional versus morphological outcomes

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