

# Dedication

*to;*

*my parents...*

*my husband...*

*my brothers ...*

*my son and my daughters...*

# **Acknowledgment**

First of all so many thanks to Allah  
almighty who help me to write this study .

I would like to express gratitude to  
Dr.Caroline Edward Ayad ,whose  
professionalism and tenacity enabled me  
to arrange my thought ,words and data  
together for the completion of this study .

Finally my thanks to my family ,doctors  
and all my friends

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## Abstract

Characterization of the posterior cranial fossa (PCF) and supratentorial cranial cavity (SCC) plays an important role in the diagnosis of many disorders.

Quantitative assessment of any morphological changes requires normative data for these anatomical areas. This study was obtained in order to achieve local reference morphometric analysis data for Sudanese (PCF) and (SCC). This is a descriptive study of 200 consecutive normal computerized tomography (CT) scans of (PCF) and (SCC) without any bony abnormality. All of the patients were Sudanese and Khartoum residents, of North Sudan origin, 97 were males and 103 were females.

The sample mean age was  $49.76 \pm 17.2$  years old, ranged between (20-80) years old. The (PCF) and (SCC) height, anteroposterior, and transverse dimensions were calculated in advanced work station of (CT) scan.

The data were analyzed as mean and standard deviation according to age and gender.

Results showed that the males have larger measurements than females; these differences were statistically significant for all variables except (SCC) height. There was no difference in dimensions of the (SCC) in various age groups, but significant differences were detected in transverse dimension and height of the

(PCF). The measurements of Sudanese were greater than other populations in the literature .Normal values of (PCF) and (SCC) dimensions could serve as a normative local reference for Sudanese. More studies are needed as there could be variations in dimensions in different regions in Sudan.

## ملخص الدراسة

إن توصيف الحفرة الخلفية ومنطقة تجويف أعلى الخيمة يلعب دور هام جدا في تشخيص كثير من الامراض . التقييم الكمي لأي تغيرات يحتاج الى بيانات معيارية في المناطق المذكورة . الدراسة كانت عبارة عن دراسة وصفية لعدد مئتين (200) فرد سليم واجريت بواسطة الاشعة المقطعية لمنطقتي الحفرة الخلفية وتجويف اعلى الخيمة بدون وجود أى عيوب خلقية . جميع المرضى السودانيين من منطقة الخرطوم من اصل شمال السودان وهم عبارة عن (97) ذكر و (103) انثى بمتوسط عمري حوالي  $17.2 \pm 49.76$  عام لأعمار تتراوح من 20 - 80 عام . الأبعاد التي قيست هي امامي خلفي ، عرضي، وارتفاع . البيانات المحللة عبارة عن متوسط وانحراف معياري تبعا للعمر والجنس . النتائج وضحت أن جميع الذكور يمتلكون قياسات أكبر من الاناث وهذه الاختلافات ذات دلالة احصائية لجميع المتغيرات ماعدا الارتفاع في منطقة تجويف اعلى الخيمة . القياسات التي أجريت للسودانيين كانت ذات قيم أكبر من أي جنسية أخرى في الأبحاث السابقة. القيم الطبيعية لأبعاد الحفرة الخلفية ومنطقة تجويف أعلي الخيمة سوف تساعد كقياسات معيارية في البحوث المحلية للسودانيين . في المستقبل نحتاج لدراسات أكثر لتمكين الفروقات للأبعاد في مختلف المناطق السودانية .

## **List of abbreviations**

PCF	Posterior cranial fossa
SCC	Supratentorial cranial cavity
AP	Antroposterior
TRV	Transverse
CC	Cephalo caudal
CT	Cross sectional tomography
MRI	Magnetic resonace imaging



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