



بسم الله الرحمن الرحيم

(إنما يخشى الله من عباده العلماء إن الله
عزيز غفور)

صدق الله العظيم ،،،

فاطر 28

Dedication

To my parents,

My wife,

My children,

and friends

For giving me never-endless gifts of encouragement, love and
patience

Acknowledgement

Acknowledgement

I would like to express my sincere gratitude to

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Abstract

This study was carried out to estimate normal linear dimensions and volume of spleen in Sudanese using ultrasonography, to correlate splenic volume with age and body parameters (height, weight) and in order to keep it as standards reference for diagnostic purposes.

This prospective study was done at Radiology Department, National Ribat University Hospital, Khartoum, Sudan, between September 2016 to February 2017, conducted on 108 volunteers (72 males and 36 females) not known to have any conditions likely to be associated with splenomegaly.

All linear dimensions of spleen were measured, and splenic volume was calculated using ultrasonography.

The splenic volume was then analyzed with age and body parameters using the Pearson's correlation coefficient.

Results of this study revealed that the mean values of the age, height, weight of subjects, spleen length (SL), spleen width (SW), spleen thickness (ST) and spleen volume were calculated. These measurements were found to be 38.74 ± 18.898 years, 163.11 ± 17.747 mm, 65.33 ± 15.431 kg, 91.07 ± 11.330 mm, 37.59 ± 7.440 mm, 37.78 ± 8.085 mm and 70.63 ± 31.924 cm³ respectively.

Age had no significant effect on spleen volume ($p=0.684$). There was a significant positive correlation, using Pearson's correlation coefficient, between the spleen volume, and other parameters (height $p=0.000$, and weight $p=0.002$).

The observations presented in this report have defined anatomic parameters about spleen size that need to be taken into consideration for reference data to determine population discrepancies and helpful for radiologists and clinicians.

The present study concluded that a local reference of spleen dimensions was established with a different range of values reported previously

مستخلص الدراسة

اجريت هذه الدراسة لتحديد الأبعاد الخطية الطبيعية للطحال باستخدام التصوير بالموجات فوق الصوتية وذلك لدى السودانيين الاصحاء، ودراسة مدى علاقة هذه الأبعاد بالعمر وبنية الجسم (الطول، والوزن) أجريت هذه الدراسة الاستطلاعية في قسم الأشعة، مستشفى الرباط الجامعي، الخرطوم، السودان وذلك خلال الفترة من سبتمبر 2016 م إلى فبراير 2017 م. وقد شملت الدراسة 108 متطوعاً (72 ذكراً، 32 أنثى) خالين من الأمراض التي قد تسبب تضخم الطحال. واحتسبت الأبعاد الخطية للطحال (الطول والعرض والعمق)، ثم احتسب حجم الطحال باستخدام الموجات الصوتية وتم مقارنة الناتج بالعمر والطول. اوضحت نتائج الدراسة بان المتوسط \pm الانحراف المعياري لكل من عمر وطول ووزن المرضى و طول وعرض وعمق وحجم الطحال كان كالآتي 38.74 ± 18.898 سنة، 163.11 ± 17.747 سم، 65.33 ± 15.43

91.07 ± 11.33 ملى، 37.59 ± 7.44 ملى، 37.78 ± 8.085 ملى، 70.63 ± 31.924 ملى مكعب

ولم يكن للعمر أي تأثير ذو دلالة إحصائية على حجم الطحال ($p=0.684$) ولكن هنالك دلالة متوسطة الإيجابية عند استعمال مؤشر بيرسون بين حجم الطحال والمتغيرات الأخرى مثل طول المرضى ($p=0.000$) ووزن المرضى ($p=0.002$)،

خلصت الدراسة الي ان تحديد أبعاداً مرجعية عن الطحال قد تكون ذات أهمية عند دراسته باستخدام الموجات فوق الصوتية وأظهرت العلاقة بين حجمه ومتغيرات أخرى لدى السودانيين و تعزز هذه الدراسة الحاجة إلى وجود قيم مرجعية لأبعاد الطحال لكل شعب على حدا.

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List of abbreviations

BMI	Body Mass Index
BSA	Body Surface Area
CEUS	Contrast Enhanced Ultrasound
CT	Computerized Tomography
FOV	Field of View
kg	Kilo Gram
SL	Splenic Length
LUQ	Left Upper Quadrant
MR	Magnetic Resonance
RLD	Right Lateral Decubitus
SW	Splenic Width
ST	Splenic Thickness
US	Ultrasound
W	Width
SS	Splenic Size
SV	Splenic Volume
SD	standard deviations
cm	Centimeter
WT	weight

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