

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

فليُنظر الإنسان مِمَّ خُلِقَ ، خُلِقَ مِنْ مَاءٍ دَافِقٍ ، يَخْرُجُ
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Dedication

*I dedicate the following humble work and its
benefits to my lovely parents:*

(Ghalia & Hamed)

To my sweet and beloved wife

(Reem)

To my kids

(Rahgda, Obay, Rawia, Almigdad, Namaa)

To my sincere friends

**

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Abstract

This study was undertaken to develop knowledge of ultrasound characteristics of testicular tumors, associate these characteristics with histopathologic tumor types, and lay a foundation for study of ultrasound findings in benign versus malignant testicular lesions. Ultrasound is the mainstay for imaging of the scrotum. Scrotal US is characterized by high sensitivity in the detection of intrascrotal abnormalities and is a very good mode for differentiating testicular from paratesticular lesions. This study was to determine whether the clinical history and sonographic appearance of testicular masses could aid in distinguishing benign and malignant disease. The medical records and ultrasound images of 315 patients with testicular diseases were reviewed. Epididymal masses 88 (27.9%), (inguinal hernias) 14 (4.4%). simple cysts 18 (5.7%), tubular ectasia 9 (2.8%), tunica- albuginea & vaginalis 5 (1.6%), intratesticular varicocele 11 (3.5%).

Undescended testis occurred in 32 (10.1%), spermatocele 17 (5.4%), encysted hydrocele 11 (3.5%), testicular torsion 12 (3.8%), abscess 6 (1.9%), usually secondary to epididymo-orchitis 14 (4.4%) , epididymitis 12 (3.8%) , orchitis 4 (1.2%) and hematoma 15 (4.7%). Clinical characteristics and ultrasound findings of patients with seminoma were compared to those of patients with non-seminoma. 23 (7.3 %) patients had seminoma, non-seminoma 7 (2.2%). Images of non-seminoma were more often heterogeneous and cystic. Microlithiasis & calcification 12 (3.8%), and Lymphoma 5 (1.6%), testicular masses (solid or cystic) evaluated by scrotal sonography. Careful analysis of ultrasound images can permit an educated assessment of testicular tumor. Histological features and tumor markers, HCG, AFP and LDH levels of 35 testicular tumors were analyzed and correlated. Scrotal swelling was the commonest clinical presentation. Tumor marker studies in testicular cancer help in diagnosing

and planning the treatment of the tumors, however, the diagnosis of testicular cancer cannot be made based on elevated tumor markers alone. The sonograms were reviewed for the echogenicity and size of the lesions, presence of cystic areas or calcifications, and distribution pattern of detectable blood flow on color or power Doppler imaging.

ملخص

أجريت هذه الدراسة إلى تطوير معرفة خصائص الموجات فوق الصوتية من أورام الخصية ، ربط هذه الخصائص مع أنواع الأورام النسيجية ، ووضع الأساس لدراسة نتائج الموجات فوق الصوتية في الاورام الحميدة مقابل اورام الخصيه الخبيثة. الموجات فوق الصوتية هي الدعامة الأساسية للتصوير في الصفن . تتميز الموجات فوق الصوتية للصفن بحساسية عالية في الكشف عن حالات الشذوذ داخل الصفن ، وهي وضع جيد جدا للتمييز بين اورام الخصية و الأورام المجاورة للخصية. هذه الدراسة لتحديد ما إذا كان التاريخ الطبي ومظهر صور الموجات فوق الصوتية لأورام الخصيه يمكن ان يميز بين الامراض الحميدة والخبيثة. وكانت السجلات و الصور الطبية للموجات فوق الصوتية من 315 مريض الذين يعانون من امراض الخصية تمت مراجعتها ، اورام البربخ 88 (27.9%) (الفتق الاربي) 14 (4.4%) الاكياس البسيطة في الخصية 18 (5.7%) توسع وعائي أنبوبي tubular ectasia 9 (2.8%) الغللة البيضاء tunica- (1.6%) (albuginea&vaginals55) ، توسع الوريد داخل الخصية 11 (3.5%) .الخصية غير النازلة 32 (10.1%) ، قيلة منوية 17 (5.4%) ، القيلة منكيسة 11 (3.5%) ، التواء الخصية 12 (3.8%) ، والخراج 6 (1.9%) دائما ثانوي الى التهاب البربخ والخصية 14 (4%) ،التهاب البربخ 12 (3.8%) والتهاب الخصية 4 (1.3%) والحوادث الدموية 15 (4.8%) . وتمت مقارنة الخصائص السريرية ونتائج الموجات فوق الصوتية من المرضى الذين يعانون من ورم منوي لأولئك المرضى الذين يعانون من ورم غير منوي. 23 (7.3%) الغير منوية 7 (2.2%) صور الموجات فوق الصوتية للأورام الغير منوية غير متجانسة وكيسييه . الحصوات الصغيرة والتكلس 12 (3.8%) وسرطان الغدد للمفاوية 5 (1.6%) ، اورام الخصية (صلب او كيسي) يتم تقييمها من قبل الموجات فوق الصوتية .تم جمع المرضى وعمل التقرير للمرضى من قبل اخصائي الاشعة والموجات فوق الصوتية. وتم تحليل الميزات النسيجية وترابط علامات الورم مع مستوى (HCG, AFP and LDH) الى 35 مريض بأورام سرطانية للخصية. الورم المنوي 23 (65.7%) الاكثر شيوعا في ورم الخلايا الجرثومية يليه السرطان الجنيني 3 (8.6%) والمسخي 2 (5.7%) والكيس المحي 2 (5.7%) وغيرها من الاورام للمفاوية الرئيسية 5 (14.3%) وهي اكثر شيوعا في الفئة العمرية من 20-39 سنة وكان تورم الصفن هو العلامة السريرية الاكثر شيوعا .الميزات النسيجية ومستوى علامات الورم مثل: HCG, AFP and LDH وترابطها مع اورام كيس الصفن الى 35 مريض تم تحليلها. تورم كيس الصفن الاكثر شيوعا بالنسبة للعلامات الاكلينيكية ،علامات الورم تساعد في التشخيص والتخطيط للعلاج، والتشخيص لا يعتمد على ارتفاع علامات الورم وحدها والمسح بالموجات فوق الصوتية يستعرض مظهر الورم وحجمه ووجود أماكن التكيس والتصلب ونمط توزيع تدفق الدم بتصوير اللون وقوة دبلر.

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List of Abbreviation

Abbreviation	Meaning
US	Ultrasonography
HCG	Human chorionic gonadotropin
AFP	Alpha fetal protein
LDH	Lactic dehydrogenises
GCTs	Germ cell tumors
TS	Testicular seminomas
NSTT	Non-seminomatous testicular tumors
HIV	Human immune deficiency virus
CDUS	Color Doppler ultrasound
CEUS	Contrast-Enhanced Ultrasound
TE	Tissue Elastography
Cryptorchidism	The medical term for undescended testis
B-mode images	Image of brightness dots in ultrasound
AVM	Arteriovenous malformation
MRI	Magnetic resonance image
CAH	Congenital adrenal hyperplasia
ACTH	An increase in adrenocorticotrophic hormone
T1	Relaxation result in the recovery of longitudinal magnetization due to energy dissipation to the surrounding lattice magnetizations between the magnetic fields of adjacent nuclei
T2	Relaxation result in the loss of transverse
TB	Tuberculosis
BCG	Bacillus Calmette- Guerin
JNMCH	Jawaharlal Nehru Medical College Hospital
MHz	Is a unit of alternating current AC or electromagnetic EM wave frequency equal to one million hertz 1000000 Hz The megaher
FNAC	Fine needle aspiration cytology.
CT	Computerized tomography
WHO	World Health Organization
TM	Testicular microlithiasis
STIs	Sexually transmitted infections