Ultrasonographic Evaluation of Selected Tendons in Patients with Rheumatoid Arthritis

Thesis

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بسم الله الرحمن الرحيم

{قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا
مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ
الْحَكِيمُ} (البقرة ٣٢)

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Content

- **Abstract……** i
- **List of Abbreviations……..** iii
- **List of Figures……..** vii
- **List of Tables…….....** ix
- **Introduction & aim of work…….....** 1
- **Ultrasound imaging of Tendons: Normal anatomy and commonly encountered pathology……...** 4
  - Introduction…….. 4
  - Technical Requirements……. 4
  - Drawbacks & limitations…… 5
  - Normal Ultrasound Tendon Anatomy and Scanning Technique… 6
  - Tendons Diseases……. 11
- **Rheumatoid Arthritis……..** 22
  - Introduction…… 22
  - Epidemiology……... 22
  - Pathogenesis …… 22
  - Clinical Picture…… 32
  - Laboratory Findings…… 54

- Radiological Findings……. 56
- Classification Criteria…… 61
- Predictors of disease severity in RA…….. 63

- **Measuring Disease Activity, function and Damage in Rheumatoid Arthritis……...** 65
  - Core set variables…… 65
  - Composite measures…… 76
  - Response & improving criteria……... 77
  - Remission, low disease activity……... 79
- **Patients and Methods……** 83
- **Results……** 90
- **Discussion……** 108
- **Summary……** 122
- **References……** 125
- **Arabic summary……** 144

Abstract

Title:

Ultrasonographic Evaluation of Selected Tendons in Patients with Rheumatoid Arthritis.

Background:

The physical examination provides only limited information on the presence and extent of tendon pathology in RA patients and tenosynovitis is often misinterpreted as joint inflammation.

Objectives:

To evaluate the prevalence of tendon involvement in rheumatoid arthritis patients, compare the ultrasound finding with clinical examination and determine the factors that potentially associated with a more frequent tendon involvement in RA patients.

Methods:

30 patients with RA and 20 healthy controls matched by age, sex and body mass index (BMI) are subjected to; history and clinical examination, ultrasonography examination of shoulder, elbow, wrist, hand & knee joints. The RA patient are subjected to; measurement of the disease activity, laboratory measurement of serum rheumatoid factor & ESR, and X-ray wrist, hand & feet.

Results:

In this study, nearly 20 (66.7%) of the 30 recruited patients showed at least one inflamed tendon, in 12 (40%) of them damage was detected in at least one tendon, while in only one patient tendon enthesitis was detected.

Conclusion:

The present study provides prevalence of ultrasound detected tendon abnormalities in RA patients, and being the US can be time-consuming, the identification of the most commonly affected sites may facilitate US examination that can be focused on the target tendons in RA.

Key wards:

Ultrasound (US), Power Doppler Sonography (PDS), rheumatoid arthritis (RA), Tendons.

List of Abbreviation

ACPA	Anti citrulline protein antibodies
ACR	American College of Rheumatology
Anti-CCP	Anti‑cyclic citrullinated peptide
Anti-MCV	Anti-mutated citrullinated vimentin
APCs	Antigen presenting cells
APL	Abductor pollicis longus
AS	Ankylosing spondylitis
A-SAA	Serum amyloid A protein
BMI	Body mass index
CD	Color Doppler
CDAI	Clinical disease activity index
CE	Clinical examination
CET	Compartment extensor tendon
CMC	Carpometacarpal joint
CRP	C-reactive protein
CT	Computed tomography
DAS	Disease activity score
DCs	Dendritic cells
DIP	Distal interphalangeal joint
DMARD	Disease modifying antirheumatic drug
ECRB	Extensor carpi radialis brevis
ECRL	Extensor carpi radialis longus
ECU	Extensor carpi ulnaris tendon
ED	Extensor digitorum tendons
EPB	Extensor pollicis brevis tendons

EPL	Extensor pollicis longus tendon
ERA	Early RA
ESR	Erythrocyte sedimentation rate
EULAR	European League Against Rheumatism
FCR	Flexor carpi radialis
FCU	Flexor carpi ulnaris
FD	Flexor digitorum
FDP	Flexor digitorum profundus
FDS	Flexor digitorum superficialis
FET	Finger extensor tendon
FFT	Finger flexor tendon
FLS	Fibroblast-like synoviocytes
FPL	Flexor pollicis longus
GC	Germinal center
GS	Gray-scale
HAQ	Health-Assessment Questionnaire
HLA	Human leucocyte antigen
IL	Interleukin
JSN	Joint space narrowing
MCP	Metacarpophalangeal joints
MHAQ	Modified health assessment questionnaire
MMPs	Matrix metalloproteinases
MRI	Magnetic resonance imaging
MTJ	Myotendinous junction
MTP	Metatarsophalangeal joints
NLR	NOD like receptors

NOD	Nucleotide binding oligomerization domain
NSAIDs	Non steroidal anti-inflammatory drugs
OA	Osteoarthritis
OMERACT	Outcome measures in rheumatoid arthritis trials
OTJ	Osteotendinous junction
PADI4	Peptidyl arginine deiminase, mainly of type IV
PD	Power Doppler
PDS	Power Doppler sonography
PIN	posterior interosseous nerve
PIP	Proximal interphalangeal
PRF	Pulse repetition frequency
PsA	Psoriatic arthritis
PTPN22	Protein tyrosine phosphates N22
RA	Rheumatoid arthritis
RAMRIS	RA-MRI scoring system
RANKL	Receptor activator of nuclear factor kappa B ligand
RF	Rheumatoid factor
SDAI	Simplified Disease Activity Index
SDD	Smallest detectable difference
SF	Synovial fluid
SH	Synovial hypertrophy
Th	T helper cells
TIMPs	Tissue inhibitors of metalloproteinases
TLRs	Toll like receptors
TNF-α	Tumor necrosis factor α
US	Ultrasound

VAS	Visual analogue scale
VEGF	Vascular endothelial growth factor

List of Figures

Number	Title	Page
Figure (1)	Tendon Structure	8
Figure (2)	Normal Ultrasound Biceps Tendon	11
Figure (3)	Supraspinatus Tendinopathy	13
Figure (4)	Supraspinatus Tear	15
Figure (5)	Exudative Tenosynovitis	17
Figure (6)	Mixed Tenosynovitis	18
Figure (7)	Multistep Progression to the Development of Rheumatoid Arthritis.	24
Figure (8)	Clinical Assessment of Finger Flexor Tenosynovitis.	41
Figure (9)	Jobe's (Empty Can) Test	47
Figure (10)	Test for Infraspinatus tendon	48
Figure (11)	Gerber lift off test	49
Figure (12)	Belly Press–Abdominal Compression Test	50
Figure (13)	Erosion Score	71
Figure (14)	Joint space narrowing score.	72
Figure (15)	Prevalence and Distribution of US Findings Indicative of Tendon Inflammation	95
Figure (16)	Prevalence and Distribution of US Findings Indicative of Tendon Damage.	96
Figure (17)	Prevalence and Distribution of US Findings Indicative of Tendon Inflammation	97
Figure (18)	Prevalence and Distribution of Shoulder US findings Indicative of Tendon Inflammation.	98

Figure (19)	Prevalence and Distribution of Shoulder US Findings Indicative of Tendon Damage.	98
Figure (20)	Comparison between Individual Tendon Test and US Finding Indicating Tendon Involvement at the Level of Shoulder.	100
Figure (21)	Comparison between Individual Tendon Test and US Finding Indicating Tendon Involvement at the Level of Finger and Wrist.	101