THE ROLE OF HRCT IN EVALUATION OF THORACIC MANIFESTATIONS OF RHEUMATOID ARTHRITIS

Thesis
Submitted for the partial fulfillment of the Master degree in Diagnostic Radiology

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2014

Acknowledgment

First of all, I would like to express my deepest gratitude to my dear professor **Dr. Youssriah Yahia Sabri** (Professor of Radiodiagnosis, Cairo University) for all I have learned from her. I especially appreciate her guidance, attention to detail, continuous help and support in all stages of this thesis. This thesis would not have been possible without her patience, encouragement and valuable effort.

I would like also to acknowledge with much appreciation the role of **Dr. Takia Taymour** (Lecturer of Radiodiagnosis, Cairo University) and **Dr. Marwa Moaawad** (Lecturer of Pulmonology, Cairo University), their assistance has been invaluable to me during this process.

Last but not least, I would like to thank all my professors and colleagues in the Radiology department for their cooperation and support, and my family for their continuous encouragement.

Abstract

Keywords

GGO- LIP- NSIP-HRCT- ILD

Our study involved reviewing the HRCT results of 20 known RA patients which were referred to the radiology department of kasr Al-Aini. Using HRCT findings we were able to detect the forms of pulmonary involvement in these patients which mainly took 2 forms: either airway disease in the form of hyperinflation, bronchiectasis, mosaic perfusion, and bronchial wall thickening or ILD in the form of GGO, reticulations, and cysts We concluded that the role of HRCT imaging in the evaluation and diagnosis of patients with intra-thoracic manifestations of RA is central, being accurate and non-invasive.

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List Of Abbreviations

AH	Alveolar Hemorrhage
BOOP	Bronchiolitis Obliterans Organizing Pneumonia
DAD	Diffuses Alveolar Damage
DLCO	Diffusing Capacity of Lung for Carbon Monoxide
GGO	Ground Glass Opacity
HRCT	High-resolution Computed Tomography
ILD	Interstitial Lung Disease
LIP	Lymphocytic Interstitial Pneumonia
LLLB	Left Lower Lobe Bronchus
LMB	Left Main Bronchus
LULB	Left Upper Lobe Bronchus
MCP	Metacarpophalyngeal
MSCT	Multi-slice Computed Tomography
NSIP	Non-specific Interstitial Pneumonia
OP	Organizing Pneumonia
PFT	Pulmonary Function Test
PIP	Proximal Interphalyngeal
RA	Rheumatoid Arthritis
RMB	Right Main Bronchus
RMLB	Right Middle Lobe Bronchus
RULB	Right Upper Lobe Bronchus
UIP	Usual Interstitial Pneumonia

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INTRODUCTION

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Rheumatoid arthritis (RA) is a common collagen vascular disease that affects 1-2% of the general population. It occurs more often in women than in men (female-to-male ratio, 3:1), with the highest incidence occurring between the ages of 25 and 50 years. In nearly 50% of patients with RA, there is some form of extra-articular involvement in the disease process. Lung disease is the second most common cause of death (18% of patients with RA), after infection ***(Capobianco et al., 2012).***

Although RA is more common in women, respiratory disease more commonly develops in men. Respiratory symptoms are often absent, or non-specific such as dyspnoea and chronic cough ***(Mayberry et al., 2013).***

Although pulmonary infection and/or drug toxicity are frequent complications, lung disease directly associated with the underlying RA is the most common. RA associated lung disease includes: interstitial lung diseases (ILD) such as usual interstitial pneumonia (UIP), nonspecific interstitial pneumonia (NSIP), organising pneumonia (OP), and diffuse alveolar damage (DAD); airway diseases such as bronchiectasis and bronchiolitis; pleuritis; pulmonary vascular disease; and rheumatoid nodules ***(Brown, 2007).***

Knowledge of the main chest imaging findings and understanding of the major associated complications are crucial for adequate disease management ***(Capobianco et al., 2012).***

Chest radiography represents the imaging method most frequently utilized in the initial evaluation of intra-thoracic manifestations of RA. Chest radiography,

however, has low sensitivity and specificity. High-resolution computed tomography (HRCT) can provide additional information about lung involvement in RA and may be especially helpful for differentiating specific disease patterns in the lung ***(Gotway et al., 2005).***

HRCT is known to provide the best correlation with histologic findings and can provide a confident diagnosis without the need for surgical biopsy ***(Mayberry et al., 2013)***.

HRCT has become a valuable tool for the evaluation of patients with diffuse pulmonary diseases. HRCT is now widely recognized as more sensitive and specific than chest radiography for the assessment of such patients, and it has been integrated into the diagnostic algorithms for the assessment of a number of diffuse lung processes, most notably the interstitial pneumonias, and obstructive lung diseases. Furthermore, HRCT has become a front-line test for the evaluation of patients with a number of very common clinical complaints, including patients with chronic cough and dyspnea ***(Gotway et al., 2005).***

HRCT is the method of choice for assessment of pulmonary abnormalities in RA, offering the best correlation with histologic findings, disease severity, prognosis, evaluation of disease progression, and differential diagnosis ***(Capobianco et al., 2012).***

AIM OF WORK

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The aim of this study is to evaluate the HRCT findings in patients with pulmonary complications of RA.

Review of Literature