THE ROLE OF MAGNETIC RESONANCE IMAGING IN THE EVALUATION OF EARLY RHEUMATOID ARTHRITIS OF THE HAND AND WRIST JOINTS

Thesis

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By

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1. INTRODUCTION AND AIM OF WORK

Introduction:

Magnetic resonance imaging (MRI) has important application in musculoskeletal medicine. It is now widely used by orthopedic surgeons in the diagnosis of bone and soft tissue pathology ***(McQueen, 1999).***

MRI is the only modality with the potential to show all the components of a synovial joint: bone marrow, cortical bone, hyaline cartilage, disc (when present), inflamed synovial membrane, joint capsule and ligaments ***(Smith, 1992).***

Rheumatoid arthritis (RA) is a chronic systemic inflammatory illness which affects approximately 1% of the world's population. In most patients, RA leads to joint erosions with progressive joint damage, functional limitations and work disability during the initial 5 years of the disease ***(Paget, 1997)*** Alarming results of long-term follow-up studies indicates that active RA

carries a poor long-term prognosis with considerable disability and moderate mortality ***(Gabriel S, 1999).***

Although there is no consensus on the definition of early RA, it is generally conceded that these terms refer to disease in patients who do not yet have clinical evidence of joint damage or radiologic signs of cartilage loss and/or bone erosion ***(Tac P et al, 1997).***

Treatment guidelines include early diagnosis, identification of prognostic factors and early aggressive treatment.

Diagnosing RA during its early stage is important, because substantial damage occurs to the joints in the first 2 years after onset ***(Brook and Corbett, 1997)*** and thus allowing the early start of aggressive treatment to alleviate or forestall RA joint damage and thus improving the disease morbidity and mortality rates ***(Douglas et al., 1999).***

The hand and wrist joints are the best anatomic MR imaging sites for diagnosing early RA ***(Hideharu Sugimoto et al., 2000)***

Aim of Work:

The aim of this study is to evaluate the role of magnetic resonance imaging (MRI) of the hand and wrist joints in early diagnosis of RA the disease before radiological changes appear and also to asses the effect of treatment during the course of the disease.

2. Anatomy

3. Pathological consideration

4. MRI techniques and normal findings

5. Patients and Methods:

In this study, 50 patients with clinical diagnosis of RA according to the 1987 revised ACR criteria for RA will be recruited with symptoms of 6 months or less duration.

All patients will be submitted to a full clinical examination by a rheumatologist including full drug history, standard laboratory tests (CBC, ESR, CRP and RF), conventional radiological evaluation (Plain radiography) and MRI examination of the hand and wrist joints.

6. Results

7. Illustrative cases

8. Discussion

9. Summary and Conclusion

10. References

11. Arabic Summary.

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