# INTRODUCTION

# INTRODUCTION AND AIM OF THE STUDY

The orientation of the presence of a viscid fluid within the joint cavity, dates from the 16th century when it was first noted by Paracelsus (1453–1541).

The synovial fluid has mainly two biological functions:

**First:** is to provide a system that absorbe mechanical stress, therby protecting the synovial membrane and articular cartilage from mechanical shock, impact, and vibration.

**Secondaly:** is a nourshing media for articular cartilage.

Ropes and Bauer (1953) describe it as a protein containing dialysate of blood plasma with addition of glycosamineglycan. Few changes in synovial fluid have been known for many years since the publications of Kling (1938).

Unfortunately, these excellent works and their implications in the diagnosis of the joint disease were largely ignored and neglected by clinicians for a long time (Hollander, (1960).

The biochemical composition of the synovial fluid is affected in different types of arthritis, and as Hollander Jessal and Mc.Carty (1961) pointed out that routine examination of the synovial fluid should be carried out as the information obtained is of undoubted value.

The rheumatic diseases have been recognized for long times very difficult and no laboratory test has become available which can be relied upon confirm the diagnosis of arthritis. The diagnosis of rheumatoid arthritis presents the difficulty, especially in the early stages where a high proportion of patients are seronegative (tests for rheumatic factor are negative).

Osteoarthrosis is a cause of great disability and sometime it is very difficult to differentiate between generalised osteoarthrosis and rheumatoid arthritis.

Trauma is sometimes very mild and the diagnosis of traumatic effusion is missed.

For all these causes, synovial analysis is as useful and important in diagnosis of joint diseases as urine analysis in genito-urinary tract disease.

The aim of this essay is to clarify the physical, biochemical and cytological changes occuring in synovial fluid in some of common types of arthritis and comparison with the normal synovial fluid composition which may be of value in the proper diagnosis and management of the joint diseases.