

بسم الله الرحمن الرحيم
بسم الله الرحمن الرحيم
بسم الله الرحمن الرحيم
بسم الله الرحمن الرحيم
بسم الله الرحمن الرحيم

[illegible]

Incidence Of Chondrocalcinosis In The Painful Knee In An Out Patient Clinic Of Rheumatology

Thesis
Submitted for Partial Fulfilment
of the Master Degree in
Internal Medicine

Represented by

Hassan Attia Abdel Rassoul

Supervised by

Prof. Dr. Mohamed Fathy Tamara
Prof. of Internal Medicine
Faculty of Medicine
Ain Shams University

Prof. Dr. Mohamed Samy El-Beblawy
Head & Professor of Diagnostic Radiology
Faculty of Medicine
Ain Shams University

Dr. Sayed Shalaby
Lecturer of Internal Medicine
Faculty of Medicine
Ain Shams University

Rheumatology Unit Faculty of Medicine
Ain Shams University

1990



Dedication

*To my wife and children Ahmed & Dina for
their love, devotion, patientce*

Acknowledgement

I would like to express my sincere feelings of gratitude to Professor Dr. Mohamed Fathy Tamara. Professor of Internal Medicine Faculty of Medicine. Ain Shams University. For his valuable advice, true encouragement, continuous guidance in the progress of this work.

I wish to express my deepest gratitude and appreciation to Professor Dr. Mohamed Samy El-Bebawy. Professor of diagnostic Radiology, Faculty of Medicine, Ain Shams University for his unlimited cooperation.

My sincere thanks to Dr. Abdel Ghany Shawkat Assistant Professor of Internal Medicine. Faculty of Medicine, Ain Shams University, for his remarkably meticulous marshalling of the manuscripts.

I am indebted to Dr Sayed Shalaby. Lecturer of Internal Medicine. Faculty of Medicine, Ain Shams University, for his supervision, sincere advice.

I would like to thank Dr. Mohamed Salah El-Dean Mostafa Head and Professor of preventive and Community Medicine Faculty of Medicine Al Menia University for his imaginative enthusiasm for this work.

CONTENTS

SUBJECTS	PAGE
• Introduction & Aim of the Work	1
• Review of Literature	
A) Causes of Knee Pain	3
B) Crystal Induced Arthropathies	17
C) Calcium Pyrophosphate Deposition Disease	19
D) Hydroxy Apatite Arthropathy	50
• Subjects and Methods	52
• Results	55
• Discussion	68
• Summary	78
• Conclusion	80
• References	81
• Arabic Summary	



INTRODUCTION



INTRODUCTION

Chondrocalcinosis is the calcified cartilage seen on radiographs found in the majority of pseudogout patients first recognized in (1958) by *Zitnan and Sitaj*.

McCarty & Hollander, 1961; Kohen 1962, discovered the intrasynovial crystal deposition of calcium pyrophosphate dihydrate with different character from urate crystal, they labelled the disease related to the new crystal pseudogout.

The crystals may cause no damage, but can trigger attacks of acute inflammation (synovitis) or contribute to chronic joint disease (*Dieppe, 1987*).

Chondrocalcinosis is thought to be uncommon in Egypt, to the best of our Knowledge, its incidence was not studied in this country.

AIM OF WORK

This study is carried out with the aim of determining the incidence of chondrocalcinosis among patients suffering from painful knee joint who attended the out patient clinic of rheumatology in Ain Shams University

REVIEW OF LITERATURE

CAUSES OF KNEE PAIN

Knee pain, may originate from disease process involving synovium, cartilage or structures around the joint (tendons, bursae). Figure (1) serve as guide to group of disorders which affect knee and causes painful knee (*Gilliland and Mannik, 1983*) Fig. (1).

KNEE PAIN OF PERIARTICULAR ORIGIN

This pain may arise from bursitis, tendinitis, fibrositis

Bursitis

Bursae are enclosed sacs lined by synovial tissue membrane, they facilitate movement, some are at frictional points between muscles groups or where a muscle overlies a bony prominence, deeply situated bursae may communicate with joints as result of trauma or infection or inflammatory arthritis (*Cailliet, 1984*).

Pre patellar Bursitis "house maid's knee"

This bursa lies between the skin and patellar tendon, bursa is prone to direct trauma from fall or kneeling and can be caused by infection or inflammatory arthritis Bursitis give rise to painful tense swelling over the anterior aspect of the knee and obliterates the margins of the patella, (*Nakano, 1978*).

Semimembranous and Semitendinosus Bursitis

Bursa lies between the medial head of the gastrocnemius and the semimembranosus and semitendinosus tendons, can become, inflamed as a result of trauma or synovitis in the knee joint with which the Bursa communicates.

Tenderness is elicited by deep palpation over the tibial condyle posteriorly, (*Cailliet, 1984*).

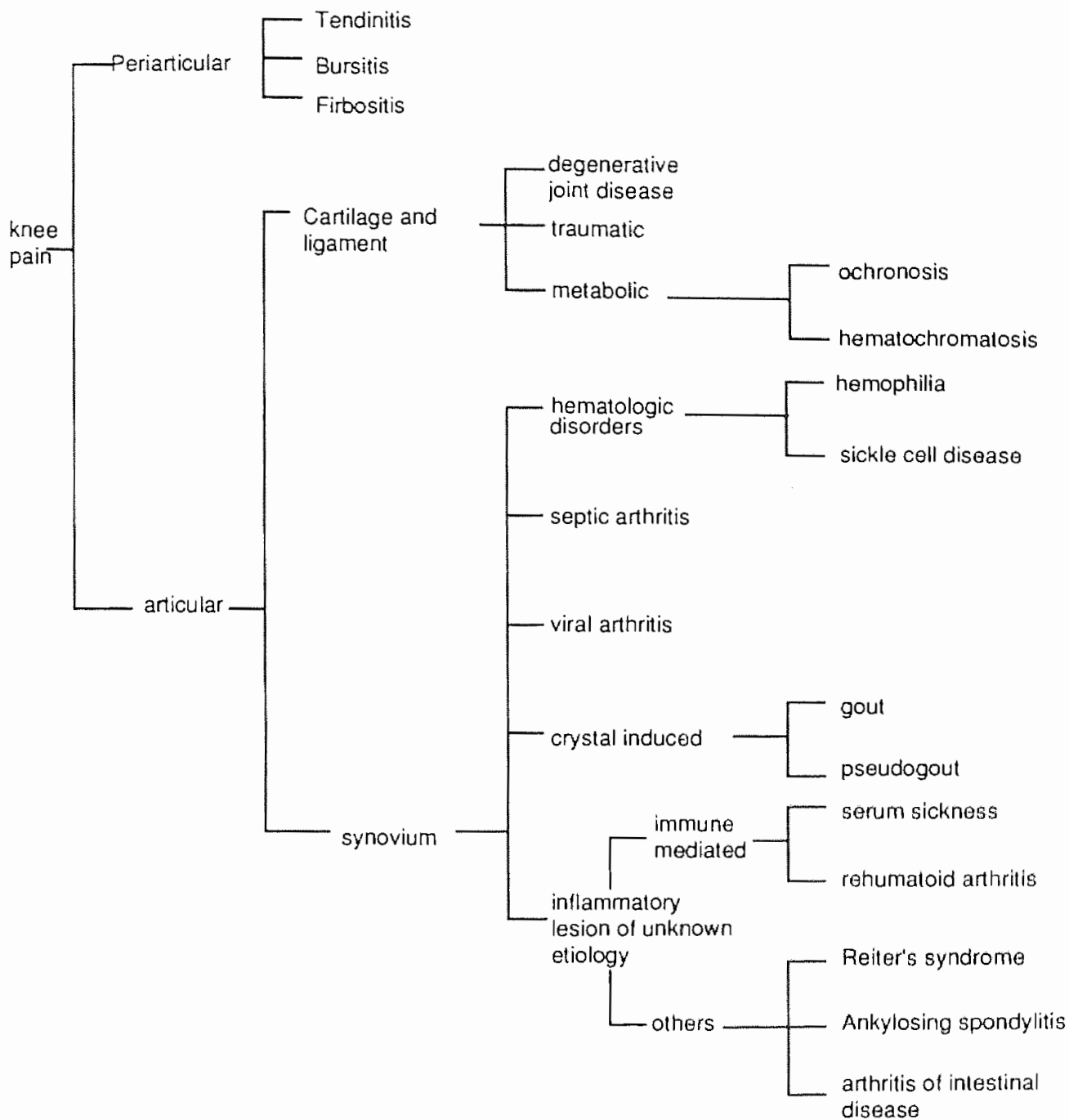


Figure (1) disorders causing knee pain,
(Gilliand and Mannik, 1983)

Gastrocnemio-Semimembranous Burase or "Baker's Cyst"

When gastrocnemius and semimembranous bursa communicate with the knee joint, an effusion may produce a popliteal or Baker's cyst which is best appreciated when the knee is extended. Rupture of cyst result in synovial fluid leakage into calf muscles cause sudden intense pain mimicking deep venous thrombosis, the most common cause is rheumatoid arthritis, also may occur in oostero arthritis (*Nakano, 1978*).

Anserine Bursitis or Tendenitis

The bursa lies between sartorius, gracilis and semitendinosus, superfascially and Medial ligament on its deep surface. When bursa is inflamed pain and tenderness over medial border of upper part of tibia is present, and increase by forcefull extension of the knee or resisted contraction of hamstring (*Cailliet, 1984*).

TENDINITIS AND TENOSYNOVITIS

Patellar Tendon Tendinitis or Jumper's Knee

The patient complain pain about patella, with aching after exercise particularly with vigorous activity requiring jumping, running and climbing. Sometime there is swelling over involved site, tenderness over proximal or distal patellar pole is also elicited. The aetiology of this condition is repeated stress to quadriceps tendon insertion proximally or the patellar tendon insertion at the distal pole of the patella (*James, 1977*).

Popliteal Tendon Tenosynovitis

Refer to a recurring pain over posterior lateral aspect of knee at activity, tenderness over popliteal tendon can be elicited, it is common among distance runners and joggers (*Nakano, 1978*).

FIBROSITIS

Fibrositis is a non articular form of rheumatism characterized by chronic generalized aching, and stiffness with persistent tender points in specific areas. Middle aged females are most commonly affected. The cause of this entity is not known, the onset of fibrositis is between age of (25-40), with 5 times higher in females than males, generalized aches, pains, stiffness, are the most common complaints. These symptoms tend to be more prominent in morning or evening and are enhanced by changes in the weather, the aching is increased by inactivity, relieved by moderate physical exercise. The patients also complain frequently of generalized fatigue, insomnia, headaches and anxiety; patients often describe swelling of joints or of periarticular areas, on examination no evidence of synovitis is found. On physical examination characteristically tender spots are found in the same areas on repeated examinations. Tender spots occur in decreasing frequency at upper border of trapezius muscles, medial aspect of the knees, lateral aspect of elbows, posterior iliac crests, lumbar spine areas, medial aspect of elbow, area over sternocleidomastoid muscles, at least 5 or 6 tender spots are present but the number may be higher. In these tender spots actual nodules may be palpable in some patients. Fibrositis patients only have periarticular tenderness, muscle strength is normal, laboratory tests are normal, radiological examination are normal (*Mannik and Gilliland, 1983*).

Knee Pain of Cartilage and Ligamentous Origin

This group comprise degenerative joint disease, trauma and metabolic disorders.

OSTEOARTHRITIS

Osteoarthritis is characterized by focal degeneration of joint cartilage and new bone formation at the base of the cartilage lesions (subchondral bone) and at joint margins (osteophytes). Both the tibiofemoral joint and patellofemoral joint may be affected. Pain of tibiofemoral osteoarthritis is felt deep in the knee or around the tibial joint margin, the pain of patellofemoral osteoarthritis is felt behind the patella and is noticed particularly on ascending or descending stairs (*Caillet, 1984*), by age 40 many persons exhibit some asymptomatic degenerative changes in the cartilage of weight-bearing joints, however, by the age 75 virtually all persons have developed osteoarthritis in one or more joints (*Kammer, 1986*).

Traumatic Causes of Knee Pain

A great many traumatic condition affect the knee including ligamentous tears, dislocations, fractures, and notably mensical tears.

Injury to Medial Meniscus

Is very common particularly in the athletic individuals and present as, swelling, varying degrees of restriction of flexion or extension, motion cause pain over anteromedial or posteromedial joint line. Tenderness can often be elicited at the point of pain, forcible external rotation of leg while knee flexed at 90° cause pain over medial joint, (*Jergesen, 1979*).

Injury to Lateral Meniscus

The clinical findings are pain and tenderness over lateral joint line. Forcible rotation of leg with the knee flexed to right angle may elicit pain (*Jergesen, 1979*).