

Endocrine Conditions Presenting as Mimics of Rheumatological Diseases

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Endocrinology and Rheumatology

- Common
- Symptoms usually reflect involvement of muscles, nerves, tendons, and bones rather than of joints themselves (i.e. periarticular)

Shared Presentations with D&E

- Fatigue
- Weakness
- Sleep difficulties
- Headache
- Muscle aches
- Joint pains (plus a description of swelling)
- Paraesthesiae
- Problems with memory and concentration
- Gastrointestinal symptoms
 - Nausea
 - Alternating constipation and diarrhoea
- Irritable bladder

A Soupçon – It's Your Choice

- Diabetic cheiroarthropathy
- Acromegaly
- Carpal tunnel
- Myopathy / myalgia
- The hot, red swollen foot
- Hypercalcaemia / pseudogout
- Endocrine osteoporosis
- Charcot feet
- Hyperlipidaemia



Cheiroarthropathy

Flexion contractures of
the MCP and proximal
IPJ.

Swelling of proximal IPJ



Cheiroarthropathy

- Also known as 'stiff hand syndrome' or limited joint mobility
- Found in 8-50% of all people with diabetes
- Prevalence increases with duration of diabetes
- Associated with and predictive of other diabetes complications

Cheiroarthropathy

- Characterized by thick, tight, waxy skin reminiscent of scleroderma
- Limited joint range of mobility (inability to fully flex or extend the fingers) and sclerosis of tendon sheaths are also present
- Initially painless
- Large joints may become involved later

Cheiroarthropathy

- Multifactorial causes
 - Increased collagen glycation
 - Decreased collagen degradation
 - Microangiopathy ± neuropathy
- Treatment
 - Good diabetes control



Endocrine Causes of Carpal Tunnel

- Acromegaly
- Cushing's
- Hypothyroidism
- Diabetes mellitus
- Pregnancy
- Obesity



Acromegaly and Joints

- Less than 15% present with altered facial features / enlarged extremities
- Musculoskeletal involvement is related to length of hypersomatotropism
- Carpal tunnel in up to 50%
- OA

*Robert Pershing Wadlow (1918-1940)
the "World's Tallest Man" at 8' 11.1"*



Acromegaly and Joints

- 50% experience joint problems (mono or poly articular arthritides)
 - Joint swelling (70%)
 - Hypermobility
 - Cartilaginous thickening
 - Stiff joints
 - Nerve entrapment
 - (No joint effusions)

Acromegaly



1989



1994



1999



2002



2003



2005



2009

Acromegaly



Spinal Involvement in Acromegaly

- Osteophytes
- Disc space widening
- Increased anteroposterior vertebral length leading to dorsal kyphosis



The Hot, Red Swollen Foot

- Is it gout or is it an infection?
- If you exclude gout, then it is worth sending them to the diabetic foot clinic to assessment (and vice versa)



Chondrocalcinosis / Pseudogout

- Deposition of calcium pyrophosphate dihydrate (CPPD) crystals in one or more joints
- Occurs more commonly in patients with diabetes and long standing hypothyroidism
- Reasons unknown



Myopathy

- Cardinal features
 - Weakness
 - Fatigue
 - \pm pain
 - \pm altered excitability

Myopathy

- Primary
 - Usually a gene defect leading to an enzyme deficiency
 - ATP production defect
- Secondary
 - Endocrine
 - Nutritional
 - Toxic

Primary Myopathies

- Primary hyperkalaemic and hypokalaemic periodic paralysis
- Disorders of glycogen and glucose metabolism
 - Acid maltase deficiency (type II glycogenosis)
 - Myophosphorylase deficiency (type V glycogenosis — McArdle's disease)
 - Debrancher enzyme deficiency (type III glycogenosis — Cori – Forbes disease)
 - Phosphofructokinase deficiency (type VII glycogenosis — Tarui's disease)
 - Other enzyme deficiencies
 - phosphoglycerate kinase, phosphoglycerate mutase, and lactate dehydrogenase
 - carnitine, carnitine palmitoyl transferase, myoadenylate deaminase

Endocrine Myopathies

- Thyroid (TFT's)
- Hypercortisolism (2 x 24h ufc)
- Acromegaly (IGF-1 + GH suppression test)
- Hypopituitarism (IST)
- Hyperaldosteronism (R/A ratios)
- Hypoadrenalism (SST)
- Disorders of calcium, vitamin D, and parathyroid hormone metabolism

Myopathy - Thyroid

- Generalised in longstanding severe hypothyroidism
- Raised CPK levels
- Unexplained hypochromic, microcytic anaemia in 15%
- Symptoms resolve with treatment

Signs of Hypothyroidism

- Dry skin, thin hair
- Cool peripheries
- Puffy face hands feet
- Yellow skin
- Bradycardic
- Peripheral oedema
- Slow relaxing reflexes
- Carpal tunnel syndrome
- Serous cavity effusions
- Galactorrhoea
- Ataxia, dementia, psychosis, coma



Myopathy - Thyroid

- In hyperthyroidism the myopathy is proximal
- Profound muscle weakness
- May be associated with hypercalcaemia and abnormal LFT's – but not raised CPK
- Symptoms resolve with treatment

Autoimmune Associations

- Grave's and Hashimoto's disease more frequently associated with other autoimmune conditions, e.g. lupus, myasthenia, and RA

Cushing's Myopathy



- Hypercortisolism
- Limb muscle wasting and proximal shoulder and pelvic girdle weakness
- Iatrogenic most often

Myalgia

- Can occur with overzealous steroid withdrawal
- Arthralgia and even arthritis are described as rare adverse effects of steroid therapy
- Myalgia, myositis and rhabdomyolysis are associated with statin use
- OCP use is associated with a syndrome of persisting arthralgia, myalgia, morning stiffness, and even synovitis



Endocrine Osteoporosis

- Hypercortisolism
- Hypogonadism
- Hyperparathyroidism
- Hyperthyroidism
- Hyperprolactinaemia
- Diabetes mellitus
- Acromegaly
- Pregnancy and lactation
- Iatrogenic
 - Steroids
 - GnRH treatment
 - Heparin
 - Anticonvulsants



Charcot's



- Associated with peripheral neuropathy
 - Diabetes
 - Tertiary syphilis
 - Leprosy
 - Syringomyelia

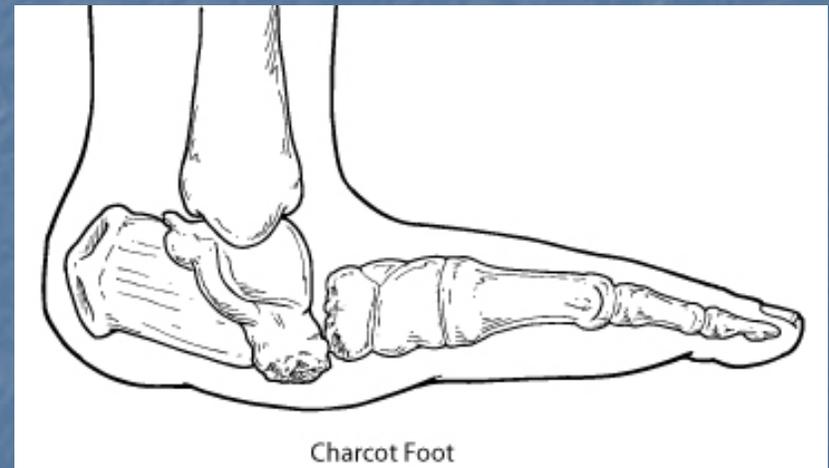
Charcot's





Charcot's

- Usually painless
- Acute Charcot associated with warmth ($>2^{\circ}\text{C}$ difference in feet), erythema and swelling
- Treated by
 - Good diabetes control
 - Immobilisation
 - Surgery



Hyperlipidaemia

- Joint manifestations typically precede diagnosis of the lipoprotein disorder
- Articular symptoms can occur in a number of the hyperlipidaemias, particularly types II (FH) and IV (familial combined)
- A migratory polyarthrititis is occasionally described in type II hyperlipoproteinaemia, but oligoarthrititis and tendonitis are more common
- In two-thirds of patients, symptoms resolve with treatment of the lipid disorder, the remainder requiring symptomatic therapy

