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Clinical case presentation

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# Medical history

- 66-year old male, farmer
- Non-smoker, no allergies
- No medications prior to present illness
- Sometimes cough while treshing crops or speading hay to sheep
- Patient's father had had pulmonary tuberculosis
- Weight normal, slim build
- Arthrosis of the both hips
- Hip prostheses first to left hip and then to right hip 11/2007 with Synergy-Interfit cementless endoprothesis

# Guarentee expired

- 1/2012 right hip started to make sounds. X-ray showed that right femoral head had sunk deeper to the cup of the acetabulum
- Operation 1.3.2012: the ceramic liner of the acetabular cup was broken. It was replaced with plastic Reflection cup and femoral head was replaced
- Patient recovered well and was discharged with pain killers and rivaroxaban



- After operation from 15.3. patient suffered from fever, swelling in his left lower leg and pain in his left I metatarsophalangeal joint
- Upper torso was affected with round lesions of various sizes. There was widespread erythema in the shoulders, arms and palms
- Patient came to emergency department. No clots were found and patient was discharged. Allergic reaction to medications was considered
- Ortopedist appointment 5/12 patient was free of symptoms
- In the autumn of 2012 pain in the right hip started again
- Patient had also low-grade fever, prolonged cough and tachycardia

- Patient was examined extensively by pulmonary specialist. High resolution computed tomography of the lungs was normal
- Heterotopic ossification of the right hip was found by orthopedist. Symptomatic treatment. Findings increased mildly in follow-up
- Hypothyreosis was diagnosed, no antibodies, thyroid ultrasound was normal
- Stress echocardiography detected relaxation abnormalities and sinus tachycardia
- Primary hypogonadism was diagnosed

- In the beginning of 2013 patient developed bilateral sensorineural hearing loss without apparent cause
- In the early summer of 2013 patient's eyesight declined subacutely. No reason was found by ophthalmologist.
- Extensive neurological examinations were made, including brain MRI and cerebrospinal fluid, but nothing was found

# Rheumatological ward september 2013

- Physical examination: patient could see the number of raised fingers from 50 cm, couldn't read, didn't hear speech even with hearing aid. Otherwise normal findings
- As a new symptom difficulties in balance and occasional dizziness

# Laboratory tests

- Hb 176 (134-167), Leuk 8.9 (3.4-8.2), monosytosis, CRP 62 (<3), La 27 (<30), ACE normal, aminotransferases normal, urine sample normal, creatinine normal
- Infection serology for instance Borrelia negative
- Autoimmune tests (ANA-Ab, ENA-Ab ja ANCA-Ab) negative
- No M component, normal immunoglobulin levels

Test that revealed the cause of patient's symptoms



What was the test and the cause of patient's symptoms?

# Imaging studies

- Thyroid ultrasound still normal
- In whole body CT scan only significant abnormality was in the area of the right hip



# Radiologist alert

- Radiologist specialized in prosthesis radiology consulted orthopedist. They suspected liftoff of the femoral head of the hip prosthesis and incident metallosis
- In hip MRI there was abundant ferromagnetic artifact. This together with findings of the CT scan suggested occurrence of metallic particles

- In laboratory tests the levels of chrome and cobalt were very high
- Patient underwent re-operation of the right hip. Endoprosthesis was replaced. Surrounding tissues were filled with metal
- After operation the cobalt levels slowly declined

# Follow up

- Cobalt poisoning explained nearly all of the patients symptoms
- Hearing and sight improved
- Patient didn't need hearing aid
- Diastolic heart failure cleared
- Thyroxine dosage could be reduced, beta blocker was discontinued