History

62 year old woman with new onset right hand pain but with a history of multiple sites of joint pain.
What's the Diagnosis - Case 36

All images are focused on the third (long) digit of the right hand
Axial and sagittal IR images through the midportion of the proximal phalanx of the third digit
Axial IR and PD images through the base of the proximal phalanx 3rd digit
Frontal, oblique, and lateral view of right 3rd (long) digit
Magnified lateral and AP views of the right knee
Both knees three years after prior radiographs
Findings

Radiographs of both hands demonstrate large subchondral cysts of both hands and a preferential arthrosis of the 2nd and 3rd MCP joints. There is advanced arthrosis at the DRUJ of both wrists with chondrocalcinosis of the TFCC particularly seen on the right side. MRI demonstrates multiple subchondral cysts with fluid fluid levels. Also seen is edema and a fracture line centered at the midportion of the proximal phalanx of the 3rd digit of the right hand. This fracture line is corroborated on the dedicated radiographs of the third digit. Images of the knees demonstrate subtle chondrocalcinosis with the likely degree of overall arthrosis belied on the radiographs as bilateral TKA was required only a brief time later.
What's the Diagnosis - Case 36

- Large, subchondral cysts
- 2nd, 3rd MCP arthrosis
- Chondrocalcinosis
- Arthrosis at DRUJ
Fracture and surrounding edema

Denuding of cartilage

Large, subchondral cysts
Subchondral cysts with fluid/fluid levels
Fracture through subchondral cyst
Subtle chondrocalcinosis
Diagnosis: CPPD Arthropathy

Calcium pyrophosphate dihydrate arthropathy (CPPD) is a type of CPPD crystal deposition disease. The CPPD crystals can be deposited in fibrocartilage such as menisci, the TFCC, or pubic symphysis; hyaline cartilage; synovial membrane/synovial fluid; and in tendons and ligaments. The crystals may be seen in the setting of an asymptomatic patient or may yield joint damage leading to an arthropathy similar to degenerative joint disease (DJD) but with distinctive features.

As compared to DJD, large subchondral cysts often predominate and can become so large as to yield pathologic fractures as in this case. In addition, the distribution of joints tends to be somewhat different with increased proclivity in CPPD arthropathy for the wrist and MCP joints as again seen in this case. Although DJD and CPPD arthropathy both heavily affect the knee, in CPPD there is often isolated or severe patellofemoral disease or lateral compartment disease.
Resources

• Resnick. Diagnosis of Bone and Joint Disorders. 4th Ed. 2002

• Brower. Arthritis in Black and White. 2nd Ed. 1997

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