70 year old female with bilateral hand pain.

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Scleroderma
Frontal radiographs of the hands show scattered subcutaneous and periarticular globular calcifications.
Lateral radiograph of the hands again shows globular and periarticular and subcutaneous calcifications.
Scleroderma

Imaging Features

- Punctate or globular calcinosis, most commonly in the hand.
  - Can lead to mechanical bony erosion
- Flexion contracture deformities
- Acroosteolysis
  - Resorption of tufts with eventual resorption of distal phalanx
- Arthritis late
  - Erosions and cartilage loss
  - 1st CMC subluxation
  - DIP erosions
Scleroderma

General Features
- Autoimmune disorder of unknown etiology that results in widespread angiopathy and fibrosis
  - Vascular endothelial damage leads intimal thickening with luminal narrowing resulting in an impaired angiogenic response
  - Increased collagen and fibrotic tissue within the dermis
- Female predominant, with up to 80% female in progressive systemic sclerosis and a 3:1 ratio in limited sclerosis (CREST).
Scleroderma

General Features

• Fibrotic tissue within dermis leads to flexion contracture and functional disability
• Amorphous calcification is very common, especially of the hand, where it is present in up to 85% of cases.
• Vascular injury results acro-osteolysis, tapering of skin at the ends distal digits, and calcinosis
• Subluxation at the first CMC joint is thought to be the hallmark of the disease.
  – Resorption of the trapezium and base of first metacarpal leads to proximal and radial subluxation of the thumb