

# **Erdheim Chester Disease Overview**

**3<sup>rd</sup> Annual International Medical Symposium,  
Patient, and Family Gathering**

**Houston, TX  
October 7-9, 2015**

**Kenneth McClain MD, PhD**

**With Deference to Experts having more  
experience and the “Consensus Guidelines”  
article in BLOOD 2014**



# First Described 1930

## Jakob Erdheim and William Chester

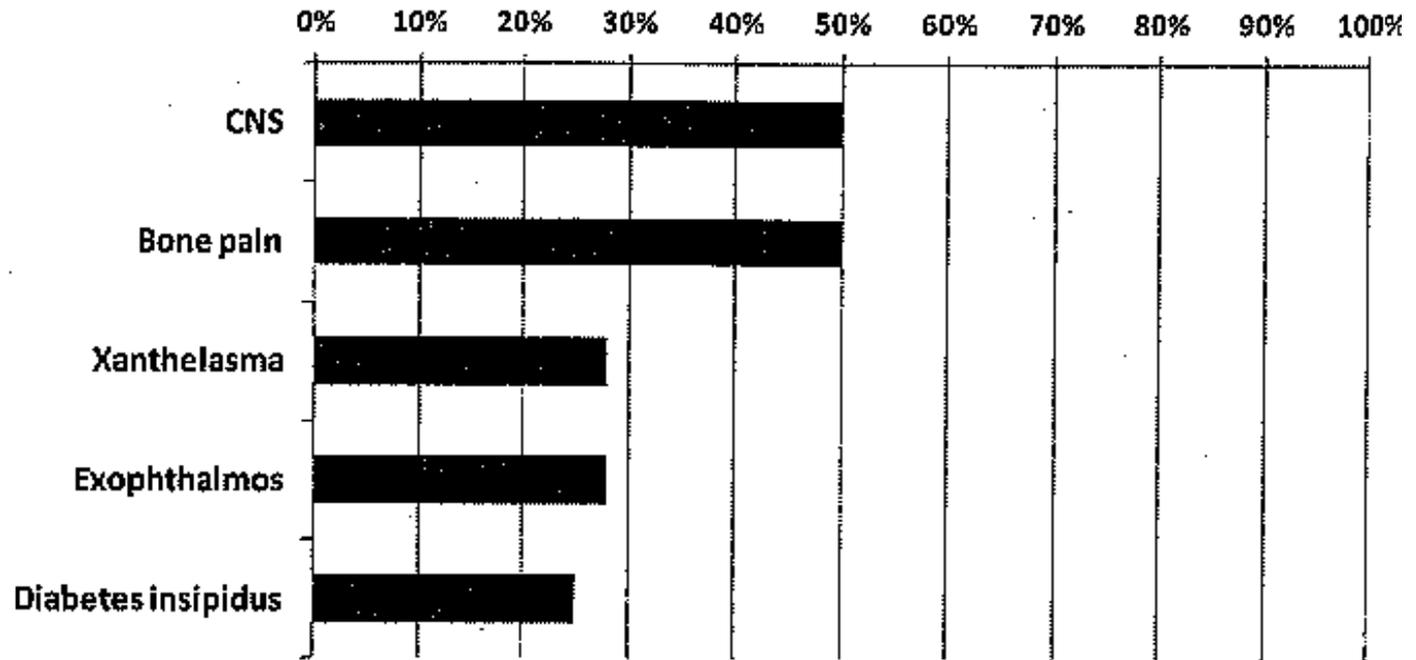
- Multiple organ systems involved
- Histologic pattern characteristic but need clinical correlations
- Mutated BRAF-V600E in 50-100% of patients- depending on test
- New therapies hold promise of improved outcomes
- International cooperation has fostered several important discoveries

# How Does ECD Present?

- **Fevers, night sweats, fatigue**
- **Double vision, pain behind eyes**
- **Cough, difficulty breathing, especially lying down**
- **Bone pain**
- **Lipid deposits under skin, other rashes**
- **Increased thirst and urination, breast development in males, decreased libido**
- **Trouble with balance, walking, speech, thinking**
- **Depression, inappropriate behavior**

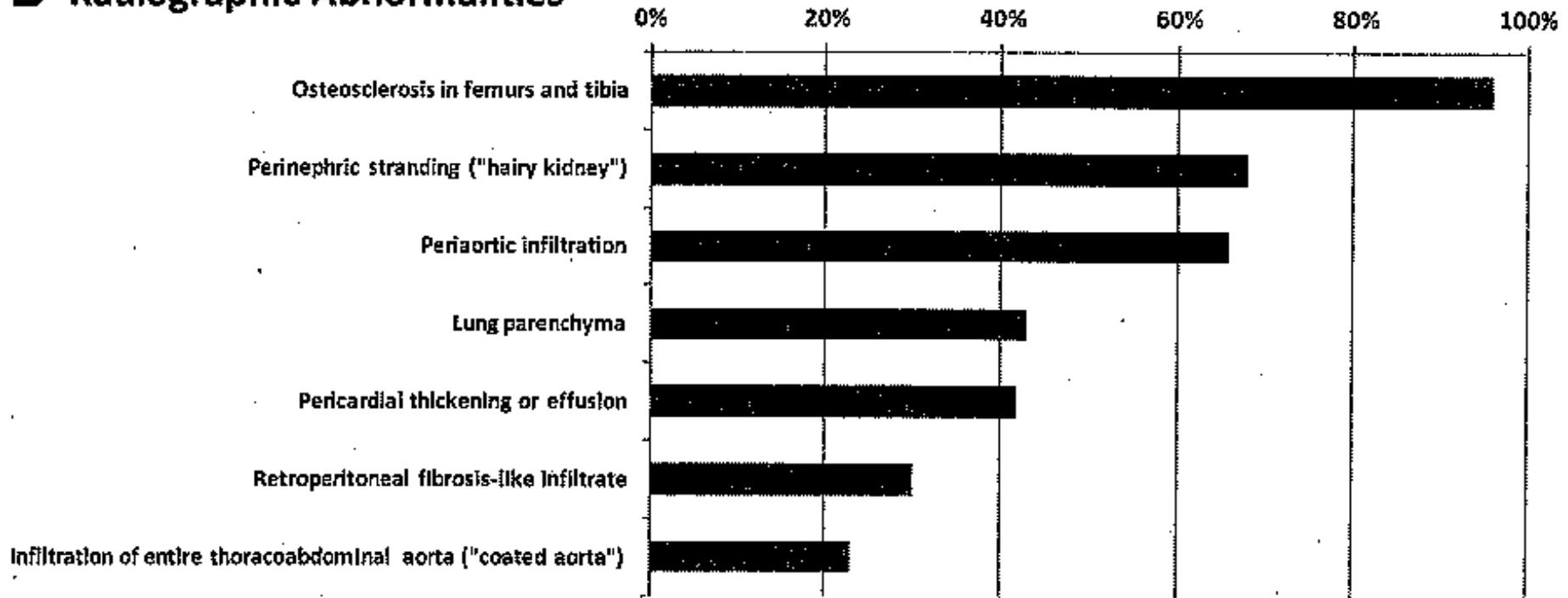
# Frequency of Clinical Presentations

## Clinical Findings

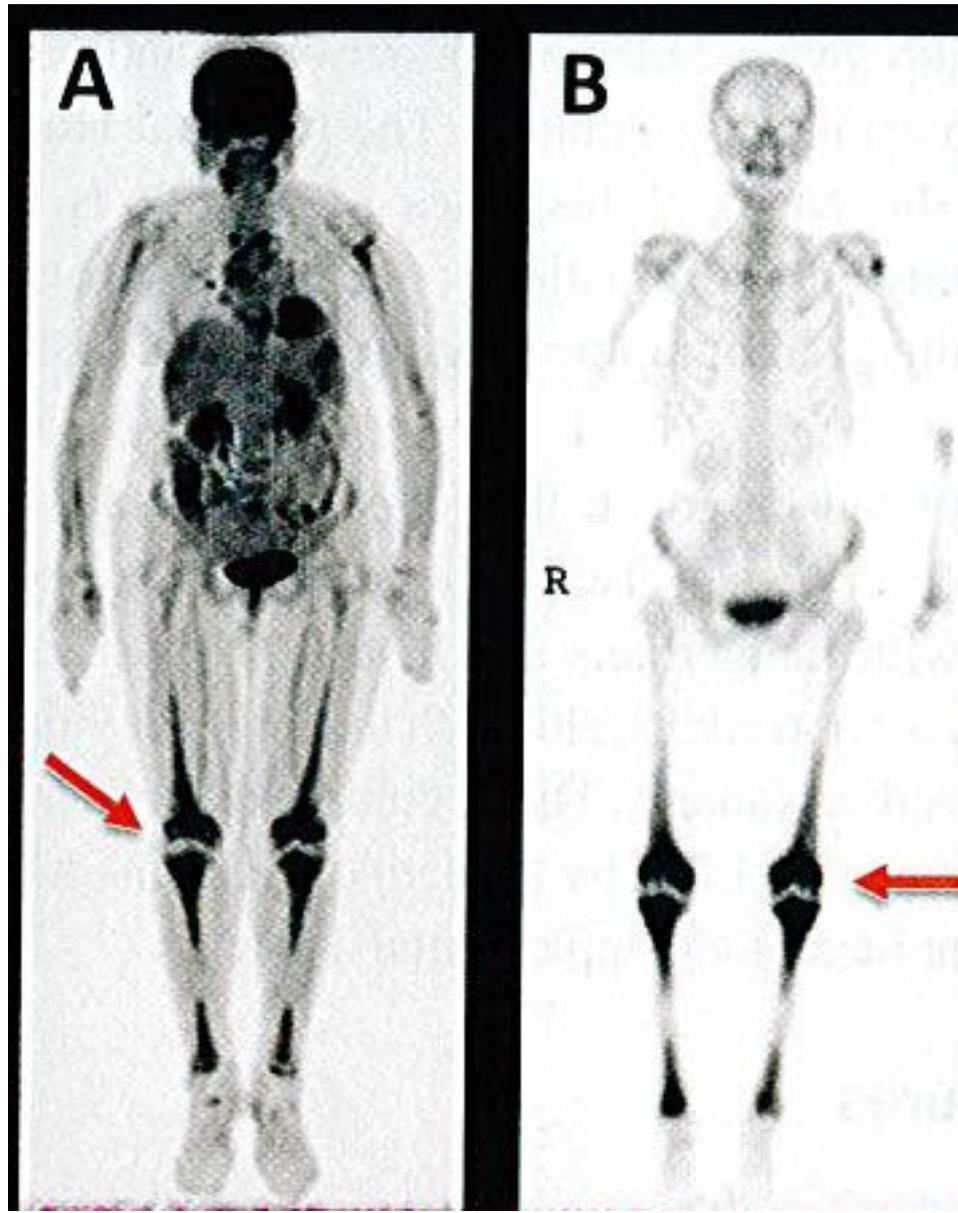


# Frequency of Radiographic Findings

## B Radiographic Abnormalities



# Typical Bone Radiologic Findings

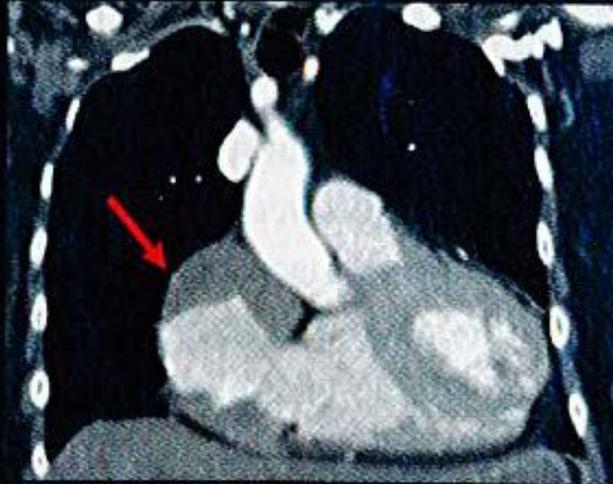


# Typical Radiologic Findings

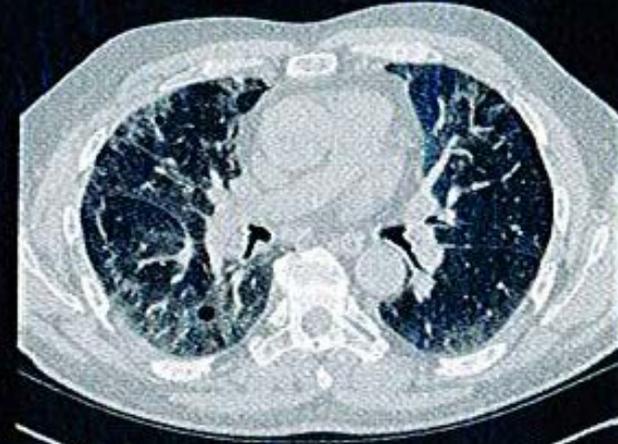
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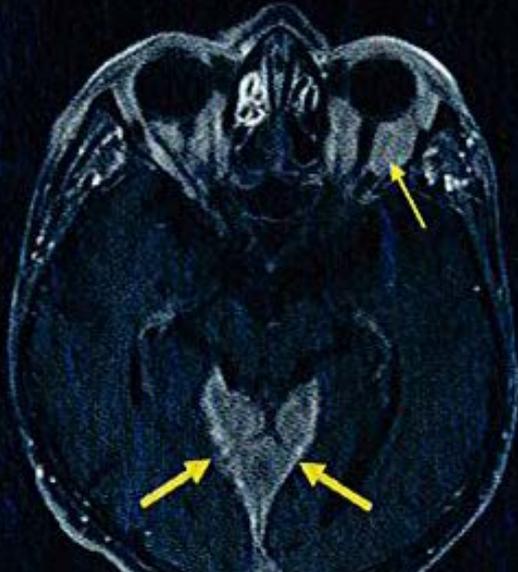
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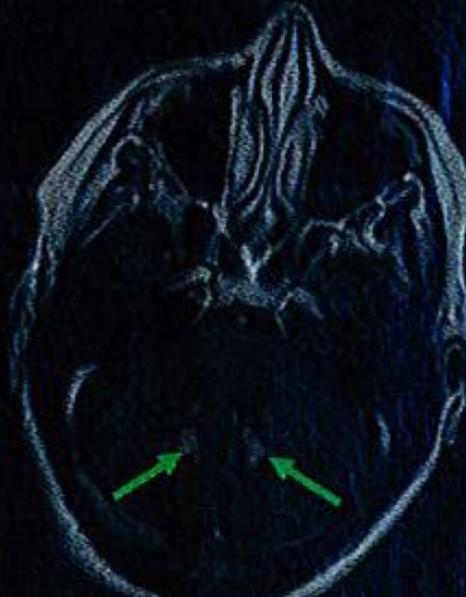
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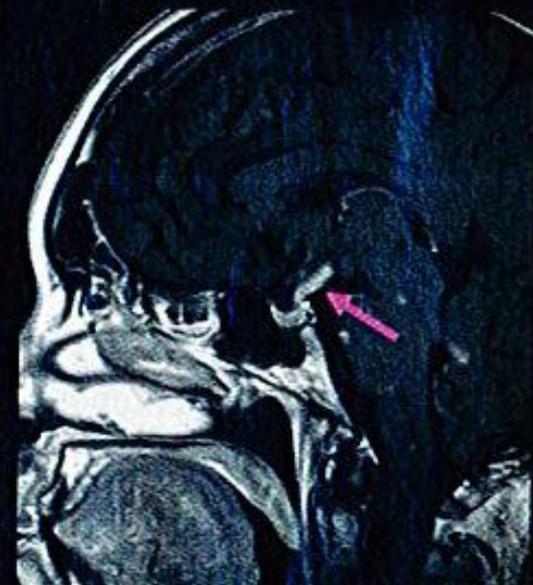
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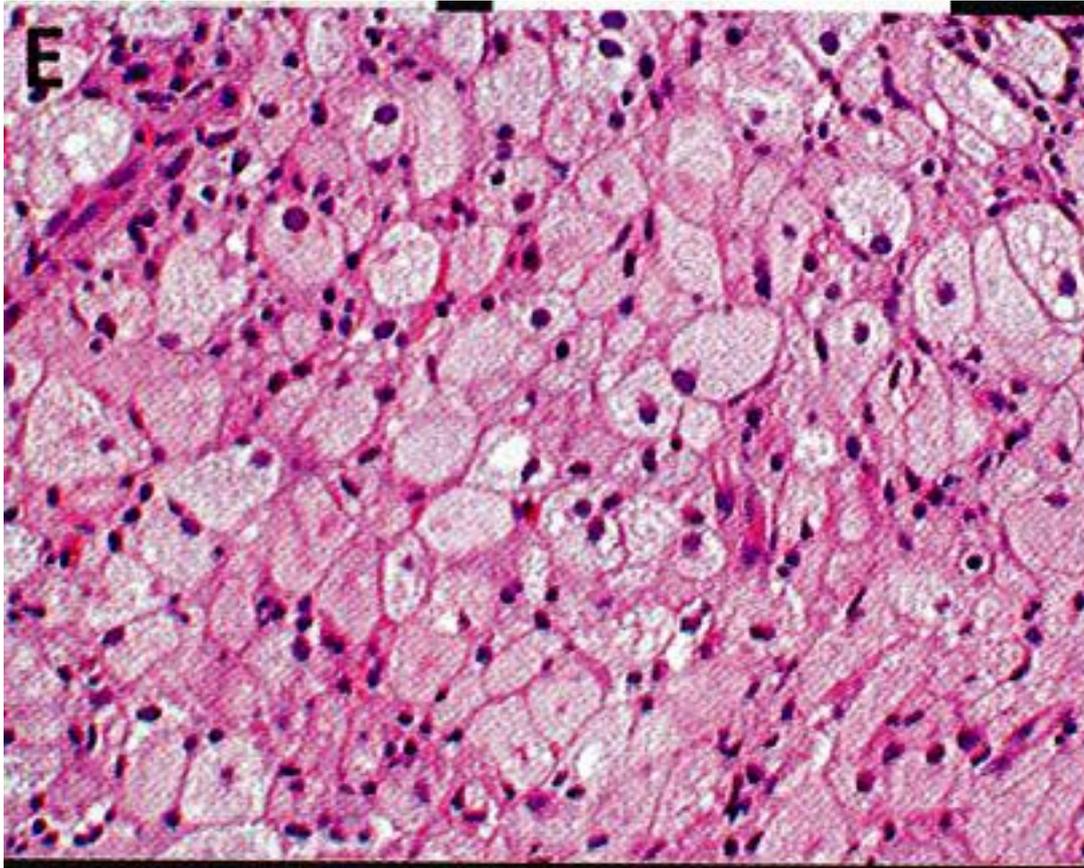
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# Histology of ECD



# ECD Cells Make Inflammatory Proteins

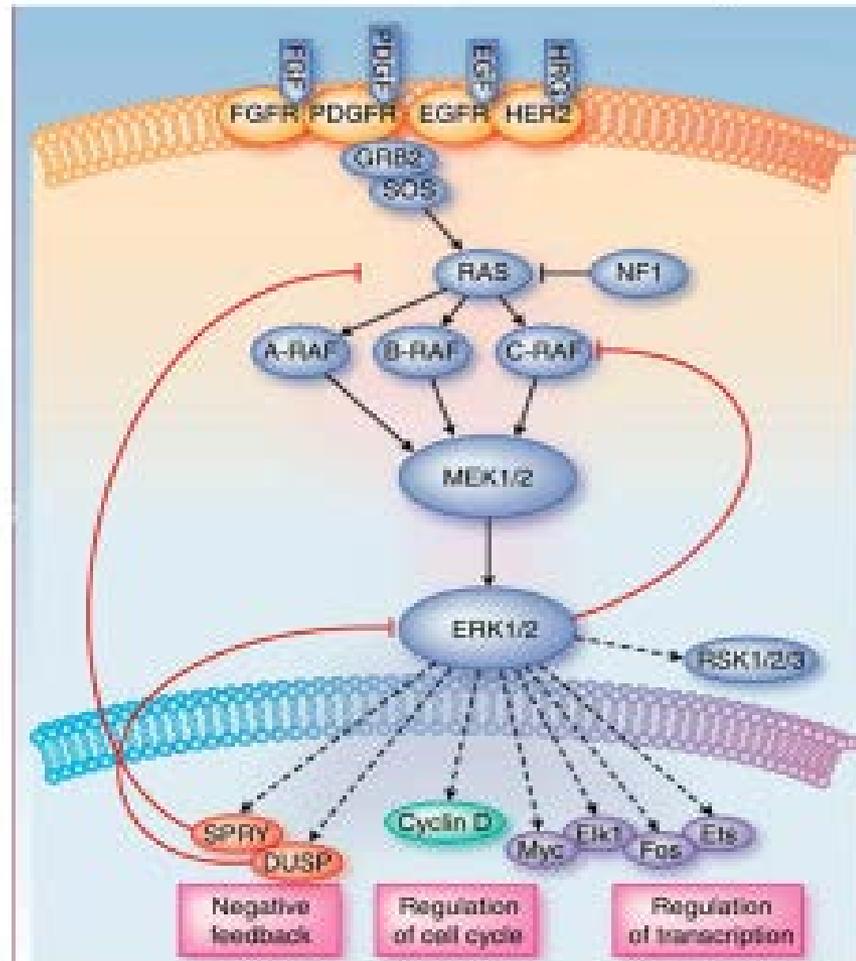
- Interferon-alpha (Ifn- $\alpha$ ): causes pain, fever, decreased blood counts
- IL-12: increases Ifn- $\alpha$
- IL-1: Target for Anakinra
- MCP-1: attracts histiocytes to a lesion.

# **Categorizing Patients by Most Severely Affected Organ System**

- **No Symptoms**  
Mostly Skin  
Bone lesions +/- pain
- **Patients with symptoms**  
CNS  
Cardiac  
Retroperitoneal  
Orbital-craniofacial  
Neuroendocrine  
Pulmonary  
Multi-system

# What is BRAF?

## BRAF Pathway



# Treatment Options

- **Clinical Trials**
  - Vemurafenib (Anti-BRAF V600E)
  - Tocilizumab (Anti-IL-6)
  - Sirolimus and prednisone (Anti-RAS muta.)
- **“Standard of Care” or First Line**
  - Pegylated-Interferon alpha
  - “Regular” Interferon alpha
  - Anakinra
- **Second Line**
  - Cladribine (2-CdA)
  - Imatinib (Gleevec)
  - INfliximab

**Thank you**

Questions?



Texas  
Children's  
Hospital

**BCM**  
Baylor College of Medicine