Vertebral involvement in SAPHO syndrome: a MR follow-up study of 13 cases

Emilie Dodré 1,2, Caroline Parlier-Cuau 2, Gilles Hayem 3, Jean-Denis Laredo 2

1 Service d’imagerie musculo-squelettique, Hôpital Roger Salengro, CHRU Lille
2 Service de radiologie ostéo-articulaire, Hôpital Lariboisière, Assistance Publique-Hôpitaux de Paris
3 Service de rhumatologie, Hôpital Bichat, Assistance Publique-Hôpitaux de Paris
Introduction

- SAPHO syndrome
  - Bone lesions
  - Skin lesions
  - Inflammatory spondyloarthropathies
  - Pathogenesis unknown

- Erosion of a vertebral body corner is a consistent finding *

Introduction-Purpose

- Radiological course of spinal lesions in SAPHO syndrome

- Purpose
  - To describe the course of spinal involvement in SAPHO syndrome
    - Retrospectively
    - MRI
Materials and methods-Patients

- Retrospective, multicentric study
- **13 patients with SAPHO syndrome** (1992-2012)
  - 10 women, 3 men [median age: 33 years (17-63 years)]
- 2 MR examinations of the spine with an interval of at least 3 months
  - Follow-up: median 17 months (4-157 months)

Images: sagittal plane T1-weighted, T2-weighted or STIR, sagittal and axial planes T1-weighted gadolinium-enhanced (11 patients)
Materials and methods-MR analysis

- Vertebral erosion
  - Described in our previous study
  - Disappearance of the low-signal-intensity line corresponding to the cortical bone

Laredo et al. Radiology 2007
Vertebral lesions

- Evaluated on sagittal images

- One lesion: erosions within a single vertebra, or within two and more adjacent vertebrae

- Lesions separated by one or more normal vertebral corner were analyzed as distinct lesions
Materials and methods-MR analysis

- **Follow-up**

- **Progression**
  - Erosions within lesions
    - Size
    - Depth
  - Soft tissue involvement
  - Vertebral disk involvement
  - Bony bridges

- **Apparition** of new lesions
Results - Vertebral lesions

Follow-up: progression of erosions in 20 cases (74%). In 14 cases (52%), extension was located within the vertebrae.

6-month follow-up
In 6 cases (22%), progression was located within the vertebrae and also to adjacent vertebrae.

Results - Vertebral lesions

T1-W

T1-W+Gd

10-month follow-up
Results-Vertebral lesions

☐ In **3 cases**, a new lesion appeared

![Image of MRI scans showing T1-W+Gd and T2-W with 20-month follow-up notes](image-url)
Results-Progression of disk involvement

- **Disk involvement**
  - **Follow-up: progression 13/27 (48%)**
    - 37% (10/27) – disk space narrowing
    - 11% (3/27) – disk space narrowing and abnormal signal intensity
Results-Progression of soft tissue involvement

- **Soft tissue mass**
  - Initial MRI: 8 cases/27 (30%)
  - Follow-up: progression 3/27 (11%)
Results—Evolution of bony bridges

- Bony bridges
  - Follow-up: evolution 5/27 cases (18%)
4/13 patients (31%) presented a progressive thoracic kyphosis due to extensive cortical erosion of vertebral body.
Conclusion

- During the course of SAPHO syndrome, vertebral involvement spreads by degrees
  - within a single vertebra to the adjacent cortices
  - as well as to the vertebral corner of the adjacent vertebrae.

- Soft tissue and intervertebral disk involvement mimics spinal infection.

- Predominance of erosions at the anterior aspect of vertebral bodies is responsible for progressive thoracic kyphosis.
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