AJNR

# Comment on ''SAPHO Syndrome: Imaging Findings of Vertebral Involvement''

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*AJNR Am J Neuroradiol* 2016, 37 (10) E65-E66
doi: https://doi.org/10.3174/ajnr.A4912
http://www.ajnr.org/content/37/10/E65

# Comment on "SAPHO Syndrome: Imaging Findings of Vertebral Involvement"

I have read with great interest the article by McGauvran et al[1] regarding an MR imaging study in patients with synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome. I fully agree with the authors both that the differentiation of SAPHO syndrome from spondyloarthropathies (SpA), especially psoriatic arthritis (PsA), is mandatory and that MR imaging could improve the understanding of the course of the disease and lead to an earlier diagnosis.

SAPHO syndrome is actually considered a rare disease, but growing awareness among dermatologists, radiologists, and rheumatologists is going to increase its diagnosis.

The peculiar bone involvement, represented by osteitis, is the common denominator of SAPHO syndrome, either by its radiologic appearance or its pathologic features (Table). In a case series described in *Arthritis and Rheumatism*, my colleagues and I indicated that sternocostoclavicular hyperostosis (SCCH) represented the first symptom in 70% of patients and was involved in about 80% of the cases.[2] In addition, many patients had a history of several admissions to the emergency department for a suspected acute cardiac event. It is of basic importance to distinguish patients with psoriatic arthritis from those with SAPHO syndrome with psoriasis. The paravertebral ossification seen in SAPHO syndrome is completely different from syndesmophytes; in fact, close observation of the published pictures may enable them to be properly defined as enthesophytes. Moreover, spine lesions are segmental in SAPHO syndrome. Besides, in SAPHO syndrome, the most typical symptom is a precocious anterior chest wall involvement, while inflammatory low back pain represents the most relevant clinical symptom in only a minority of patients. SCCH is the typical manifestation of SAPHO syndrome, representing the mainstay for diagnosis, but it is not pathognomonic for the disease. A similar involvement may also be seen in PsA. In PsA, however, SCCH is more frequently a late complication of the disease and does not usually involve the medial end of the clavicular. Thus, osteitis/hyperostosis of this difficult anatomic site (anterior chest wall) should be regarded as a distinguishing feature of SAPHO syndrome. In up to 20% of cases, cutaneous lesions may be lacking; thus, this form represents a purely rheumatologic variant of the disease.

**Proposed classification criteria of SAPHO syndrome (from Kahn MF,[4] 2003 ACR 67th Annual Scientific Meeting)**

| Classification Criteria |
|---|
| Inclusion |
| Bone ± joint involvement associated with PPP and PV |
| Bone ± joint involvement associated with severe acne |
| Isolated sterile hyperostosis/osteitis (adults)[a] |
| Chronic recurrent multifocal osteomyelitis (children) |
| Bone ± joint involvement associated with chronic bowel diseases |
| Exclusion |
| Infectious osteitis |
| Tumoral conditions of bone |
| Noninflammatory condensing lesions of bone |

[a] With the exception of *P acnes*.

I also agree with McGauvran et al[1] that misinterpretation of MR imaging usually leads to unnecessary biopsies. Nevertheless, the diagnosis of SAPHO syndrome could be challenging, and it is very important to be cautious in cases with involvement of soft tissues because it is necessary to exclude a malignancy.[3] Besides, in these cases, the biopsy may also be useful for directing the treatment in case of isolation of pathogens.

Although it has repeatedly been related to the SpA family, the emerging evidence suggests that SAPHO syndrome may be a primitive inflammatory osteitis. Different stimuli have been implicated as inciting factors, in particular the low-virulence pathogen *Propionibacterium acnes*, either alive or as dead antigens, but autoimmune or autoinflammatory mechanisms have not been ruled out. However, the etiopathogenesis of SAPHO syndrome and its nosology still remain largely enigmatic. If one combines bacteriologic, immunologic, and genetic data, an appealing hypothesis involves a pathogenetic sequence in which an opportunistic germ such as *P acnes*, a skin saprophyte, takes advantage of genetically determined deficiencies in antibacterial mechanisms and subsequently induces an autoamplification of the inflammatory response, supporting the concept of SAPHO syndrome as a reactive osteitis.

## REFERENCES

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