

Significance of "Erosion-like Lesions" in "Healthy Controls"

To the Editor:

Olech and colleagues note that erosions are commonly found in metacarpal phalangeal and wrist joints of "healthy subjects"¹ and "healthy employees"². Olech, *et al*² report observation of "erosion-like lesions" on magnetic resonance imaging (MRI) of 26 of 40 (65%) healthy employees of the Oklahoma Medical Research Foundation (Oklahoma City, OK, USA). This contrasts with "at least one erosion in the hands or wrists" of 90% of individuals with rheumatoid arthritis. The latter correlates nicely with macroscopic observations of defleshed bones, where the frequency of erosions correlates with the frequency of synovitis^{3,4,5,6,7,8,9,10,11}. However, the frequency of MRI-diagnosed erosions in "healthy subjects" far exceeds the < 1% seen in human populations^{12,13} as well as the rarity of isolated erosion detection in the zoologic record^{14,15,16,17,18}.

This contrasts with recognition of bone edema in 7 subjects (17.5%) and the damage shown in Olech, *et al*, Figure 1, which clearly document pathology in a wrist and metacarpal phalangeal joint. The illustrated MRI reveals substantial damage, with no discernible synovial proliferation. This is similar to changes observed in sickle cell anemia¹⁹, which were originally thought erosive in derivation. It was only when the defleshed skeleton of an afflicted individual was examined that the etiology of "erosions" in sickle cell anemia was actually related to avascular necrosis²⁰.

It is unclear what the MRI-detected abnormalities represent in "healthy employees." While plain radiograph and computed tomography images may clarify the underlying disease, more in-depth interviewing and physical examinations seem warranted in the subgroup with such "lesions." Are these the result of long-forgotten events or similar to spondylosis deformans²¹, anomalies without clinical significance? The latter is unlikely for the lesions illustrated in Olech, *et al*, Figure 1. The authors² most appropriately label these "erosion-like lesions." It will be intriguing to learn of their natural history.

BRUCE M. ROTHSCHILD, MD, Biodiversity Institute, University of Kansas, Dyche Hall, Lawrence, Kansas 66045, USA.
E-mail: bmr@ku.edu

REFERENCES

1. Elbjerg B, Narvestad E, Rostrup E, Szkudlarek M, Jacobsen S, Thomsen HS, et al. Magnetic resonance imaging of wrist and finger joints in healthy subjects occasionally shows changes resembling erosions and synovitis as seen in rheumatoid arthritis. *Arthritis Rheum* 2004;50:1097-106.
2. Olech E, Crues JV III, Yocum DE, Merrill JT. Bone marrow edema is the most specific finding for rheumatoid arthritis on noncontrast magnetic resonance imaging of the hands and wrists: A comparison of patients with rheumatoid arthritis and healthy controls. *J Rheumatol* 2010;37:265-74.
3. Rothschild BM, Woods RJ. Synovitis equivalent to erosions in rheumatoid arthritis: Implications of skeletal analysis for clinical management of contemporary rheumatoid arthritis. *Clin Exp Rheumatol* 1992;10:117-22.
4. Woods RJ, Rothschild BM. Population analysis of symmetrical erosive arthritis in Ohio Woodland Indians (1200 years before the present time). *J Rheumatol* 1988;15:1258-63.
5. Rothschild BM, Turner KR, DeLuca MA. Symmetrical erosive peripheral polyarthritis in the Late Archaic period of Alabama. *Science* 1988;241:1498-501.
6. Rothschild BM, Woods RJ, Ortel W. Rheumatoid arthritis "In the buff": Erosive arthritis in representative defleshed bones. *Am J Phys Anthropol* 1990;82:441-9.
7. Rothschild BM, Woods RJ. Rheumatoid arthritis in Fort Ancient-Anderson Village, Ohio: La polyarthrite rhumatoïde vient-elle du Nouveau Monde? *Rev Rhum* 1990;57:271-4.
8. Rothschild BM, Woods RJ. Character of pre-Columbian North American spondyloarthropathy. *J Rheumatol* 1992;19:1229-35.
9. Rothschild C, Rothschild BM, Woods RJ. Patterns of spread of arthritis in North America. *Prog Rheumatol* 1993;5:116-9.
10. Rothschild BM, Rothschild C. Inflammatory arthritis in the first century Negev. *Prog Rheumatol* 1992;5:112-5.
11. Rothschild BM, Woods RJ. Implications of osseous changes for diagnosis of spondyloarthropathy. *J Orthop Rheumatol* 1992;5:155-62.
12. Rothschild BM, Woods RJ. Isolated erosions in antiquity: the hole truth. *Paleopathol Newsl* 1990;71:6-8.
13. Rothschild BM, Woods RJ. Implications of isolated osseous erosions related to population skeletal health. *Hist Biol* 1993;7:21-8.
14. Rothschild BM, Woods RJ. Spondyloarthropathy in gorillas. *Semin Arthritis Rheum* 1989;18:267-76.
15. Rothschild BM, Woods RJ. Reactive erosive arthritis in chimpanzees. *Am J Primatol* 1991;25:49-56.
16. Rothschild BM, Woods RJ. Spondyloarthropathy as an Old World phenomenon. *Semin Arthritis Rheum* 1992;21:306-16.
17. Rothschild BM, Woods RJ. Erosive arthritis and spondyloarthropathy in Old World primates. *Am J Phys Anthropol* 1992;88:389-400.
18. Rothschild BM, Rothschild C. Nineteenth century spondyloarthropathy independent of socioeconomic status: Lack of skeletal collection bias. *J Rheumatol* 1993;20:314-9.
19. Rothschild BM. Calcaneal abnormalities and erosive bone disease associated with sickle cell anemia. *Am J Med* 1981;71:427-30.
20. Hershkovitz I, Rothschild BM, Latimer B, Dutour O, Rothschild C, Jellema LM. Recognition of sickle cell anemia in skeletal remains of children. *Am J Phys Anthropol* 1997;104:213-26.
21. Rothschild BM. eMedicine. Lumbar spondylosis (Spondylosis deformans). [Internet. Accessed May 26, 2010.] Available from: <http://emedicine.medscape.com/article/249036-overview>

J Rheumatol 2010;37:9; doi:10.3899/jrheum.100205