

Risk factors for cartilage damage and osteoarthritis of the elbow joint: case-control study and systematic literature review

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Received: 13 October 2016 / Published online: 24 February 2017
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Abstract

Introduction This case-control study compares patients with healthy elbows to a group of symptomatic patients with cartilage damage/osteoarthritis.

Materials and methods The control group ($n = 126$) was recruited during routine medical examinations of patients (general medical offices). Included in the case group were a total of 92 patients who were undergoing arthroscopy as a result of chronic elbow discomfort. All patients were questioned with regard to occupational stress and athletic stress.

Results A significantly increased risk of cartilage damage/osteoarthritis was found with subjectively perceived increased stress in occupational settings: OR = 3.8 (95% CI 2.1–6.7); $p < 0.001$; for the individual stresses of the elbow joint in occupational settings, the following severities in effects were found: Exposure to heavy work OR = 3.9 (95% CI 2.2–6.8); Force OR = 3.7 (95% CI 2.1–6.5); Vibration OR = 4.6 (95% CI 2.5–8.5); Repetition OR = 9.2 (95% CI

3.6–23.3); $p < 0.001$. Elbow-stressing sport types represent a potential risk factor for the development of cartilage damage/osteoarthritis of the elbow joint: OR = 2.5 (95% CI 1.3–4.7); $p = 0.003$.

Conclusions Cartilage damage/radiographic osteoarthritis of the elbow joint are rare with respect to the overall prevalence of osteoarthritis. In the large number of patients with cartilage damage/radiographic osteoarthritis of the elbow joint, occupational or athletic stress factors and injuries sustained, in addition to other causes (rheumatism, gout), can prove as possible causes of these as secondary to symptomatic forms of osteoarthritis.

Keywords Elbow · Cartilage · Osteoarthritis · Arthroscopy · Case-control study · Work · Sports · Review

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