DEGENERATIVE JOINT DISEASE IN THE APPENDICULAR SKELETON IN PORTUGUESE PEOPLE FROM EARLY 20TH CENTURY

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INTRODUCTION

Degenerative joint disease (DJD), or osteoarthritis (OA), is a pathological, chronic and progressive condition that produces degenerative changes in the synovial joints (Juranm 1977: Bridges 1991; Waldron 2009).

DJD shows a pattern of multifactorial nature, with patterns of response representing a wide range of underlying causes (Roberts and Waldron 1995). Variables such as age, sex, physical activity, mechanical stress, body constitution, nutritional status, as well as endocrine and hereditary factors can influence the manifestation and final expression of this disease.

Although the prevalence and incidence of DJD vary according to the studies, there is a general consensus that a large portion of the adult population is affected. The group of rheumatic diseases of the World Health Organization estimates that 10% of the world’s population over 60 years of age presents problems associated with DJD. For Portugal, Cunha-Miranda and co-authors (2015) reported that almost 10% of 1039 Portuguese people over 45 years of age have DJD. Costa and co-authors (2004), in a study conducted in Porto, observed that between 2.2% and 5.9% of 451 men, and between 7.4% and 14.2% of 787 women, older than 18, had DJD.

AIMS

To explore the prevalence of DJD related changes in individuals between 25 and 55 years old with known sex, age-at-death, and occupation;

To investigate the possible existence of a direct relationship between the expression of lesions associated with DJD and the age, sex, and occupation of these individuals.

SAMPLE

To this study, were selected 154 skeletons (78 males and 76 females) from the Identified Skeletal Collection, housed at the University of Coimbra. These individuals died between 1910 and 1934 and were grouped in three age groups for each sex (25-35, 35-45, 45-55 years old). Regarding occupation, women were almost housewife or maid, while men were mainly blue collar workers. Observations were done without knowledge of the biographic data of the individuals.

METHODOLOGY

Changes in articular surfaces of elbow, wrist, hands, hip, knee, ankle, and feet were recorded.

Variables
(adapted from Zampetti et al., 2016)

- Marginal liping (ML): a. Absence b. Affecting < 25% of the articular surface c. Affecting > 25% of the articular surface
- Porosity (PO): a. Absence b. Affecting ≤ 25% of the articular surface c. Affecting > 25% of the articular surface
- Eburnation (EB): a. Absence b. Affecting ≤ 25% of the articular surface c. Affecting > 25% of the articular surface
- Surface ostityes (SO): a. Absence b. Small erosion < 1 mm in any dimension c. Clear erosion ≤ 1 mm in at least one dimension d. Clear erosion > 4 mm

RESULTS

Males

Degrees of severity in Marginal lipping and Porosity were grouped in two categories: bone change absent or barely discernible (grades 0 and 1) / obvious change (grades 2).

Females

No statistically significant differences were observed for laterality in any joint and age group. Significant differences were observed between the age groups in ML and SO in several joints, with higher prevalence in the group of 45-55 years.

DISCUSSION and CONCLUSIONS

ML was the change most registered in each of the six age groups. PO was the second in prevalence, but the vast majority of registered lesions were slight. Low prevalence of EB suggest aaging as an important factor.

Side differences in prevalence and statistical analyses in males 45-55 group suggest a greater use of right hand and hip. To the hands, these results support a predominant dextral affection. Buckland-Wright et al. (1991) stated that the dominant hand is even more often affected by OA in contemporary populations.

Sex statistically significant differences in ML for wrist, shoulder, and ankle, and SO in elbow and hip suggest a higher physical and mechanical stress in males.

Age. Increase of degenerative changes with age was evident both in males and females. Differences were most notable among the age groups 25 <35 and 45 <55 years. Articular ostityes changes were reported to increase with age in several studies (e.g. Chung, 1967; Jurmain and Kilgore, 1995; Shibata et al., 2002; Johnson and Hunter, 2014).

Occupation plots on the 45-54 age group load carriers (red points) and non-load carriers (blue points) constitute two clearly different groups.

REFERENCES


