Wróbel Grzegorz, Spałek Jakub. Ankylosing spondylitis of the cervical spine - a case study. Journal of Education, Health and Sport. 2018;8(12):849-852. eISNN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.2540913
http://ojs.ukw.edu.pl/index.php/johs/article/view/6477

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eISSN 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 10.12.2018. Revised: 15.12.2018. Accepted: 31.12.2018.

Ankylosing spondylitis of the cervical spine - a case study

Grzegorz Wróbel, Jakub Spałek

Department of Anatomy, Faculty of Medicine and Health Sciences, Jan Kochanowski University, Kielce, Poland

Correspondence: Department of Anatomy, Faculty of Medicine and Health Sciences, Jan Kochanowski University, Al. IX Wieków Kielc 19A, 25-317 Kielce, Poland.

Tel: 413496965. E-mail: grzegorz.wrobel@ujk.edu.pl

Abstract

Ankylosing spondylitis (AS), (synonyms: Bechterew's disease, Marie Strumpell disease, rheumatoid spondylitis) is a chronic inflammatory disease that attacks the spine, causing its pain and stiffness. The severity of this disease ranges from mild to very heavy. Clinical manifestations of this disease are focused on changes in body posture, for example, inclining the body figure forward or may be a condition for severe disability. The analyzed case concerns the bone material obtained from archaeological excavations conducted in Kielce. During the osteological analysis of the female skeleton at the age of about 50 years, two vertebrae from the cervical segment were joined together. It was established that the fusion occurred between C6 and C7. In exact terms, the association occurred as a result of fusion of the vertebral body by marginal syndesmophytes and fusion of the posterior vertebral elements as well (facet joints). The exact cause of this disease is unknown. Probably for the disease to develop, several factors need to be imposed: genetic, immune (immune system disorders) and environmental factors, such as bacterial infections (especially the gastrointestinal tract and genitourinary tract).

Keywords: ankylosing spondylitis, cervical spine, osteology

1. Introduction

Ankylosing is a term meaning rigid or stiff. *Spondyl* refers to the spine, while itis means inflammation. Ankylosing spondylitis (AS), (synonyms: Bechterew's disease, Marie Strumpell disease, rheumatoid spondylitis) is a chronic inflammatory disease that attacks the spine, causing its pain and stiffness. The severity of this disease ranges from mild to very heavy. With regard to the advanced form of this disease, bony anastomoses form at the site of elastic vertebral joints, resulting in a progressive limitation of the mobility of the spine. Clinical manifestations of this disease are focused on changes in body posture, for example, inclining the body figure forward or may be a condition for severe disability. Pathologic changes in the course of this disease may undergo other joints (eg hip, shoulder) and various organs (including eyes, heart, and lungs). The basic changes in this disease are inflammation of the sacroiliac joints connecting the base of the spine and the pelvis. As a rule, the first pain usually appears in the cross, the pain of the cervical spine may appear. At the early stage of the disease may also occur a small fever, loss of appetite, a sense of general breakdown and fatigue. They are so-called general symptoms resulting from the body's defensive response to chronic inflammation. Replacement of ligaments or tendons by bone leads to develop of "Bamboo spine" and causes movement limitation [1-6].

2. Case presentation

The analyzed case concerns the bone material obtained from archaeological excavations conducted in Kielce. During the osteological analysis of the female skeleton at the age of about 50 years, two vertebrae from the cervical segment were joined together. It was established that the fusion occurred between C6 and C7. In exact terms, the association occurred as a result of fusion of the vertebral body by marginal syndesmophytes and fusion of the posterior vertebral elements as well (facet joints) (Figure 1 A , B, C) The range of cervical vertebrae fusion covered the whole circumference of the body of the vertebrae, whereas in the anterior projection of ankylosis it was observed in the range up to 13 mm (Figure 1 D).

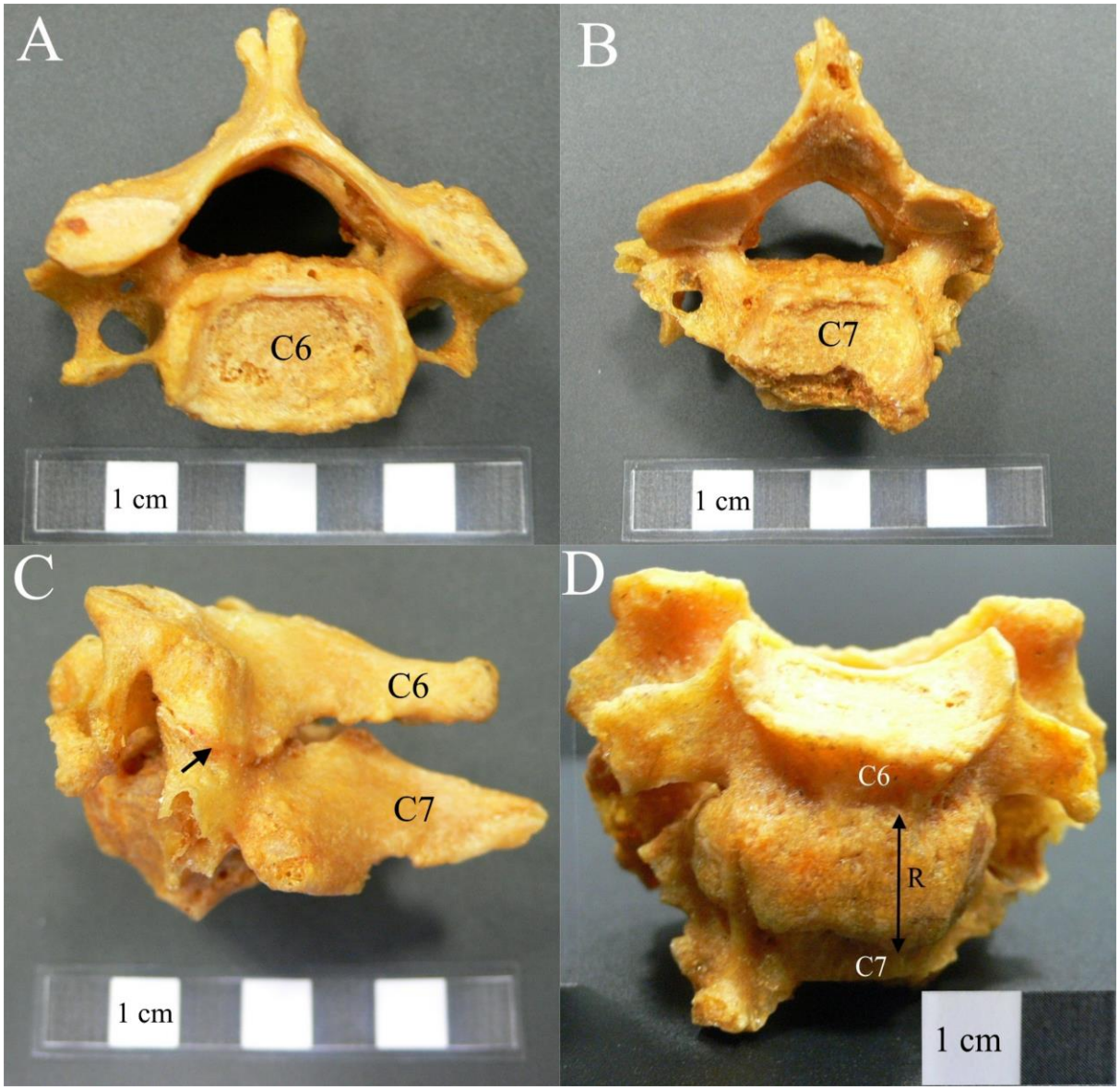

Figure 1. The fusion occurred between C6 and C7: A - view of the upper surface, B - view of the bottom surface, C - side view (the black arrowhead indicates the fusion in the area facet joints), D - front view (R - fusion range).

3. Discussion

The exact cause of this disease is unknown. Probably for the disease to develop, several factors need to be imposed: genetic, immune (immune system disorders) and environmental factors, such as bacterial infections (especially the gastrointestinal tract and genitourinary tract) [7-8]. An important role is played by genetic factors, which confirms the fact that the risk of getting sick is greater if a close relative has AS. In more than 90% of Caucasian patients, so-called HLA B27 antigen, which is the genetic marker of this disease. It should be noted, however, that the majority of people with this antigen do not have AS, and that they are sick with AS who do not have the current HLA B27 antigen. Several other genetic factors are also suspected [9-10]. The prevalence of AS varies considerably across regions of the world. In Central Europe, about 0.3-0.5% of the population suffer. In the United States, the prevalence of AS varies between 1.0% and 1.5%. The disease is more common in men than in women. It usually starts at the end of adolescence or young adults (between 17 and 35 years

of age), but it can also occur in children and older people [11-12].

References

1. Braun J, Sieper J. Ankylosing spondylitis, Lancet , 2007, vol. 369 (pg. 1379-90). doi: 10.1016/S0140-6736(07)60635-7
2. Sieper J & Braun J. Ankylosing Spondylitis: In Clinical Practice, Springer-Verlag London Limited 2011. doi: 10.1007/978-0-85729-180-6_2
3. Riley MJ, Ansell BM, Bywaters EG. Radiological manifestations of ankylosing spondylitis according to age at onset. Ann. Rheum. Dis. 1971; 30(2): 138-48. doi:10.1136/ard.30.2.138
4. Montacer Kchir M, Mehdi Ghannouchi M, Hamdi W, et al. Impact of the ankylosing spondylitis on the professional activity, Joint Bone Spine , 2009; 76:378-82.
5. Wilkinson M, Bywaters EG. Clinical features and course of ankylosing spondylitis; as seen in a follow-up of 222 hospital referred cases. Ann. Rheum. Dis. 1958;17 (2): 209-28.
6. Wang YF, Teng MM, Chang CY et-al. Imaging manifestations of spinal fractures in ankylosing spondylitis. AJNR Am J Neuroradiol. 2005; 26 (8): 2067-76.
7. Ward MM, Weisman MH, Davis Jr. JC, Reveille JD. Risk factors for functional limitations in patients with long-standing ankylosing spondylitis Arthritis Rheum, 2005; 53: 710-717. doi: 10.1002/art.21444
8. Shamji MF, Bafaquh M, Tsai E. The pathogenesis of ankylosing spondylitis. Neurosurg Focus. 2008; 24(1):E3. doi: 10.3171/FOC/2008/24/1/E3.
9. Brewerton D. Ankylosing spondylitis and HL-A 27, Lancet. 1973; 301:904-907.
10. Evans, David M., et al. Interaction between ERAP1 and HLA-B27 in ankylosing spondylitis implicates peptide handling in the mechanism for HLA-B27 in disease susceptibility. Nature genetics 43.8 (2011): 761. https://doi.org/10.1038/ng.873
11. Sieper J & Braun J. Ankylosing Spondylitis: In Clinical Practice, Springer-Verlag London Limited 2011. doi: 10.1007/978-0-85729-180-6_2
12. Gran JT, Husby G. Epidemiology of ankylosing spondylitis. In: Hochberg MC, Silman AJ, Smolen JS, Weinblatt ME, Weisman MH, eds. Rheumatology. 3 rd ed. London: Mosby, 2003: 1153-9.