RIGHT UPPER LIMB IMPAIRMENT IN A MALE INDIVIDUAL BURIED IN *ALCÁÇOVA DO CASTELO*, A MEDIEVAL NECROPOLIS IN MÉRTOLA, PORTUGAL

Umbelino, Cláudia[1,2]; Currais, David[1]; Carmo, Teresa[1,2]; Rodrigues, Clara[3]

[1]Department of Anthropology, University of Coimbra; [2] Research Centre for Anthropology and Health; [3] Campo Arqueológico de Mértola

umbelino@antrop.uc.pt

THE SITE

Medieval Necropolis dated from the Late Middle Ages (14th to 16th centuries)

- located at the Castle *Alcáçova* (the fortified neighbourhood), in Mértola, Southern Portugal

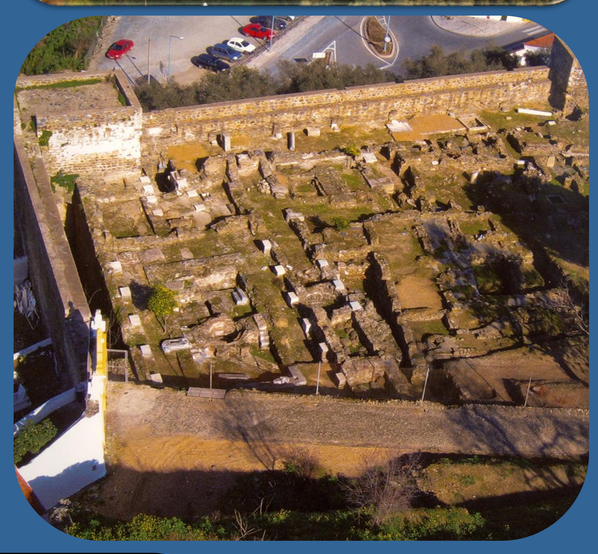
- Christian cemetery located near the main Church along the foot of the hill where the Castle was implanted

- it occupied the former Islamic quarter destroyed after 1238 with the Christian conquest of the city by the military Order of Santiago

- several archaeological campaigns took place between 1978 and 2000, under the supervision of CAM – *Campo Arqueológico de Mértola*, which uncovered nearly 700 skeletons

- at the moment 73 skeletons were already analysed at the Department of Anthropology, University of Coimbra and 50 more are under study

- further systematic excavations will be performed soon and the study of the entire series is planned



THE INDIVIDUAL

IDENTIFICATION: CAM1998 – A. Sep 625

FUNERARY DATA

- buried directly in a pit
- west-east body orientation
- extended position with the head looking up and the upper limbs crossed over the pelvic area

BIOLOGICAL DATA

- male, based on the pelvic and skull morphological traits[1,2] and foot measurements[3]
- old individual (> 60 years old)[4,5]

PATHOLOGICAL LESIONS

- left clavicle deformed, with evidences of an old fracture in the acromial extremity
- radiograph does not show any fracture line

- right clavicle with an exostosis in the attachment of the conoid ligament and an evident oblique line for the trapezoid ligament attachment

- right scapula exhibits macroporosity in the subchondral bone in the glenoid cavity

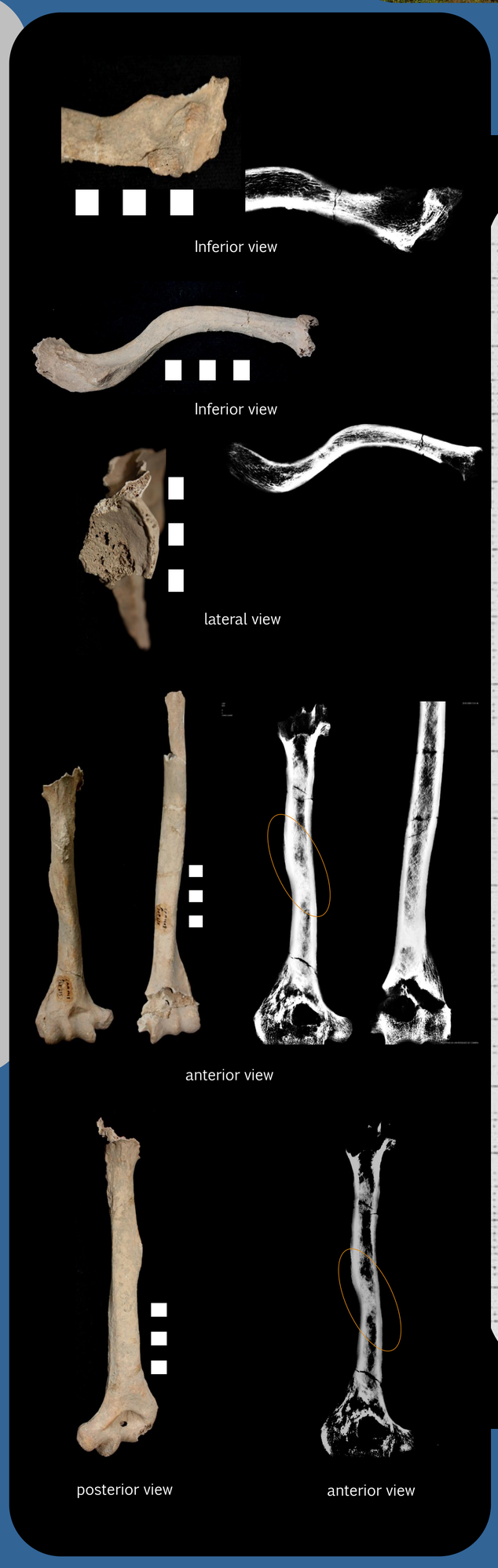
- the most striking pathological evidence is the asymmetry observed in the humerus:

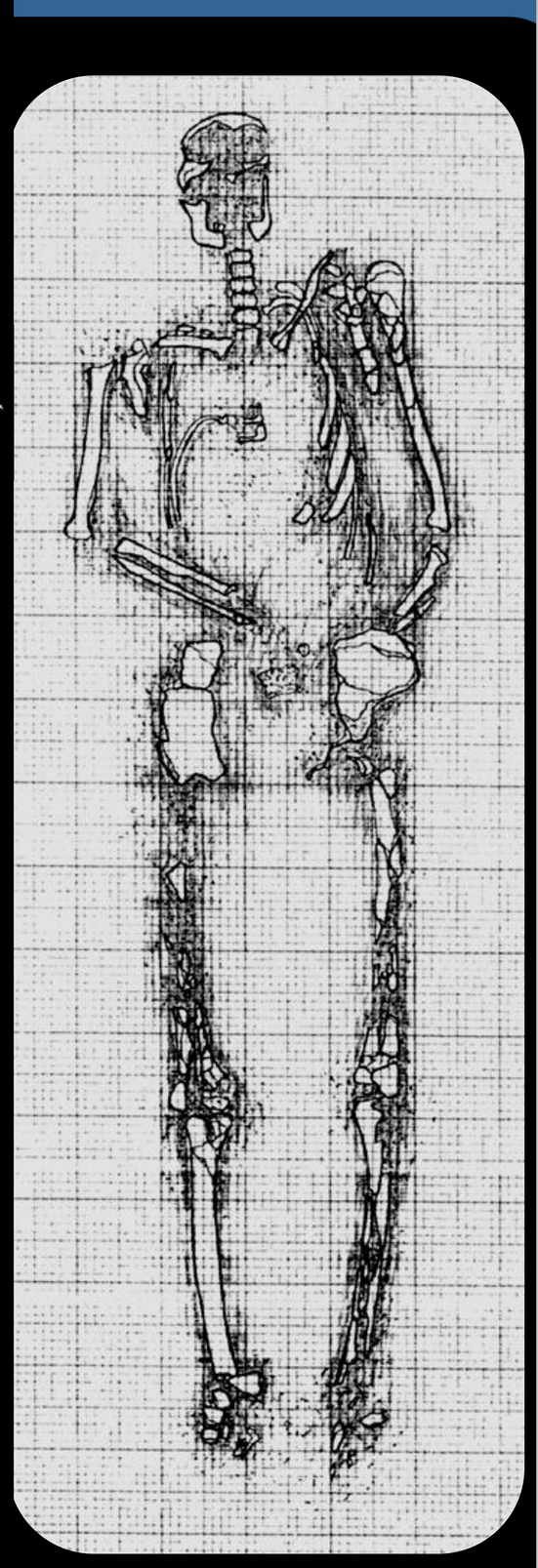
  - the right one is much shorter than its symmetric, of at least 6 cm

  -although not having its head preserved some periarticular changes are discernible in its proximal end

  - its diameter is normal but with a well developed deltoid tuberosity

  - angular deformity in the deltoid region,
  - radiographs reveal an higher density in the medullar cavity with an eventual oblique fracture line





CONSIDERATIONS

The severity of the observed right humerus deformity cannot be accurately ascertained due to the poor skeletal level of preservation

Differential diagnosis:

- the fracture in the left clavicle could eventually lead to a more intensive use of the right arm, that resulted in an higher muscular development in this bone. The right humerus is slightly more robust than its symmetric, which could be related to the above mentioned lesion. Nevertheless, this trauma does not explain the shortness of the humerus

- the small size of the right humerus, the deformation of its glenohumeral joint and the angulation of the upper diaphysis make us suspect of a case of Humerus Varus Deformity (HVD), a category of growth plate dysplasia[6]

According to Molto (2000) this disease could have multiple causes: genetics, infection and trauma

- in this case the genetic aetiology (mucopolysaccharidoses and thalassemia) seems to be less probable, since the first condition is usually associated to achondroplasia, and affected more than one bone[7]; regarding thalassemia, there are no evidences of dwarfism and other typical traits[8]

- the osteological material retrieved shows no evidence of infection diseases

- apparently trauma is the most plausible cause of this right upper limb impairment. The higher bone density in the medullar cavity observed in the radiograph of the humerus could be a consequence of an eventual torsion fracture

This would have been an old traumatic event, probably during childhood. It could explain the shortness of the right humerus and its angulation, which in turn led to an eventual dislocation of the humeral head. This last condition resulted in the instability of the glenohumeral joint being responsible for the presence of secondary ostearthritis

The rest of the skeleton does not present any pathological lesion, however it should be stressed the high level of bone fragmentation

REFERENCES

[1] Buikstra, J.; Ubelaker, D. 1994. *Standards for data collection from human skeletal remains: proceedings of a seminar at the Field Museum of Natural History.* Arkansas Archaeological Survey Research Series, nr. 44. Fayetteville: Arkansas.

[2]Ferembach et al 1980. Recommendations for age and sex diagnosis of skeletons. *Journal of Human Evolution,* 9(7): 517-550.

[3]Silva, A. M. 1995. Sex assessment using the calcaneus and talus. *Antropologia Portuguesa*, 13: 107-120.

[4]Masset, C. 1982. *Estimation de l'âge au décès par les sutures crâniennes.* Thèse Doctoral, Lab. Anthropologie Biologique, Université de Paris VII.

[5]Lovejoy et al., 1985. Chronological metamorphosis of the auricular surface of the ilium: a new method for the determinationof adult skeletal age at death. *American Journal of Physical Anthropology,* 68: 15-28.

[6]Molto, J. 2000. Humerus Varus Deformity in Roman Period Burials from Kellis 2, Dakhleh, Egypt. *American Journal of Physical Anthropology,* 113: 103-109.

[7]Ortner, D.; Putschar, W. 1981. *Identification of pathological conditions in human skeletal remains.* Smithsonian Contributions to Anthropology, 28., Washington, Smithsonian Institution Press.

[8]Aufderheide, A.; Rodríguez-Martín, C. 1998. *The Cambridge Encyclopedia of Human Paleopathology* . Cambridge, Cambridge University Press.

ACKNOWLEDGEMENTS

To the *Clínica Universitária de Imagiologia - Hospitais da Universidade de Coimbra.*
To Ana Luísa Santos, Carina Marques and Alexandrina Amorim (Alex).