II MEETING NAZIONALE
Gruppo Italiano di Paleopatologia

L’AQUILA, AUDITORIUM DEL PARCO
31 OTTOBRE 2015 ore 9:00
INGRESSO LIBERO
Health status and isotopic variability: possible correlation in the metabolic disorders in the community of Piazza Madonna di Loreto (Rome, VII- VIII century AD)

F. DE ANGELIS1, G. SCORRANO1, A. BATTISTINI2, L. PESCUCCI2, O. RICKARDS1, P. CATALANO2

1Centro di Antropologia Molecolare per lo Studio del DNA antico, Dipartimento di Biologia, Università di Roma TorVergata, Rome, Italy; 2Anthropological Service, Soprintendenza Speciale per il Colosseo, il Museo Nazionale Romano e l’Area Archeologica di Roma, Rome, Italy

Paper not received

Paleonutrition of the rural Italian population from the Middle Ages to the Contemporary Age: isotopic analysis of some Tuscan skeletal samples

A. FORNACIARI1,2, C. LUBRITTO1

1Division of Paleopathology, Department of Translational Research on New Technologies in Medicine and Surgery, University of Pisa, Italy; 2Center of Anthropological, Paleopathological and Historical Studies of Sardinian and Mediterranean Populations, Department of Biomedical Sciences, University of Sassari, Italy; 3Department of Environmental Science, Isotope Research Center for Cultural and Environmental Heritage (CIRCE), Second University of Naples, Italy

The studies on paleodiet through stable isotope evidence of carbon (δ13C) and nitrogen (δ15N) content in bone collagen represent a line of investigation widely practiced in archaeology and anthropology. The application of this method in prehistoric American and European skeletal series, as well as in historical age groups, has provided new investigative tools to reconstruct environment, food economies, access to resources and social characterization of human groups in the past. This method was recently applied by the Division of Paleopathology of University of Pisa, in collaboration with the second University of Naples, in several samples from rural Tuscan cemeteries. These skeletal series are different in chronology, related to contexts of the Medieval (11th-14th century) and Post Medieval Ages (19th century), from the inner Apennine and the hilly Tuscan. The comparison of sites with different settling characteristics (Parish cemeteries, graveyards of Castle), as well as within a site with individuals occupying different spatial hierarchical positions (in proximity or away from the church), provides useful data to interpret the diet as social indicator. Our analysis also offers some insights to interpret correctly the meaning of results in relation to the material characteristics of burials, settlements and of the written sources. Finally isotope models allow us to advance some hypotheses on food and diet in different human groups.

References

Dentoalveolar diseases and dietary habits in the social upper classes of the Italian Renaissance: the Guinigi family from Lucca

S. MINOZZI1, G. RICCOMI1, C. LUBRITTO2, P. RICCI2, G. FORNACIARI1

1Division of Paleopathology, Department of Translational Research and Advanced Technologies in Medicine and Surgery, University of Pisa, Italy; 2CIRCE Lab, Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, Second University of Naples, Caserta, Italy

Teeth and their pathologies are very important when studying...
the life-style, social behaviour, health condition and diet of ancient populations. Many articles in paleoanthropological literature describe dentoalveolar diseases in the Antiquity, mainly in the low-class societies, and only a few reports regard the oral conditions of the social upper classes.

The purpose of this research is to examine the dental condition in an upper-class family of the Italian Renaissance, in terms of dietary habits and food resources. The research was carried out on the skeletal remains of the Guinigi family from Lucca (Tuscany), dated back between the end of the 14th and first half of the 17th century.

The study of dentoalveolar diseases was performed on 45 individuals and 325 teeth, equally distributed between males and females, and isotopic analysis of 13C and 15N was performed on 13 samples.

The frequency of dentoalveolar diseases was very high in the upper class samples, and varied from 27% to 60% of the teeth alveoli affected, while the frequencies were lower (16-20%) in the rural samples. Caries was extraordinary frequent in the Guinigi family with a prevalence of 70.8% in females and 43.5% in males, while ante-mortem tooth loss and abscesses were more frequent in males, whose life span was higher. Different factors may promote tooth decay, but dietary habits, as well as physiological or behavioural factors, certainly play an important role in caries development, and may explain the differences observed between sexes.

The results of isotopic analysis indicated a diet based on higher protein intake with respect to the lower social classes, with a good presence of vegetables, but gave no indication about cariogenic foods. A large consumption of not complex sugars may be responsible, at least in part, for the high frequency of caries among the wealthy classes and in particular in the Guinigi family. It is well known that expensive and elaborate foods, including sweets, sugar cane and honey, adorned the banquet tables of Renaissance Princes. Moreover, some members of the Guinigi family, in the middle of the 16th century, founded a company for sugar cane refining and trade, probably due to the consumption of very large quantities of this elitarian food. A large consumption of very large quantities of this elitarian food. The research was carried out on the skeletal remains of the Guinigi family from Lucca (Tuscany), dated back between the end of the 14th and first half of the 17th century.

The study concerns 25 individuals from the Basilica of S. Domenico Maggiore in Naples (15th-17th centuries) and of 20 individuals from the Medici Chapels of the Basilica of S. Lorenzo in Florence (16th-17th centuries). The isotopes clearly reflect the large intake not only of meat but also of marine foods by the Italian aristocratic classes, especially from southern Italy, in the 15th-17th centuries.

I present three important “clinical” cases. The left foot of Ferdinando I de’ Medici, Grand Duke of Tuscany (1549-1609), shows, at the peri-articular and articular surface of the interphalangeal joint of the hallux dorsum a lesion typical of chronic gout. High values of δ15N demonstrate a diet very rich in meat from terrestrial animals. This isotopic profile well correlates with the frequent attacks of gout referred by court chroniclers and with the diagnosis of chronic gout of the left big toe revealed by the paleopathological study. The skull of Don Filippino de’ Medici (1577-1582) shows non-severe external hydrocephaly. The δ15N isotope values of don Filippino reveal a diet very rich in proteins of animal origin. The hereditary prince, was a frail and sickly child, affected by rickets. Probably for this reason, his parents and the court doctors forced him to eat more meat, considered at that time “the first source of physical strength”. Autopsy of the mummy of Ferrante I d’Aragona, king of Naples (1431-1494), revealed a moderately differentiated colon adenocarcinoma extensively infiltrating the muscles of the small pelvis. Ancient DNA amplification of the neoplastic cells by PCR in the mummy of Ferrante I evidenced a typical point mutation of the K-ras gene codon. The portraits of Ferrante reveal growing obesity from youth to maturity. Examination of the mummy of Ferrante, confirms his obesity. The paleonutritional data, with their high level of δ15N, show a massive intake of animal proteins. The alimentary “environment” of the Neapolitan court of the XV century and the sovereign’s habits, with his abundance of natural endogenous alkylating agents, well explain the K-ras mutation causing the tumor which killed the Aragonese king over five centuries ago.

References
Fornaciari G. “Tu sei quello che mangi”: le economie alimentari nelle analisi isotopiche di campioni medievali e post-medievali della Toscana. Centro Italiano di Studi sull’Alto Medioevo, LXIII Settimana di Studio (Spoleto, 9-14 aprile 2015). In press.

Pulmonary antracosis on natural mummies of XVI-XVIII century AD from Roccapelago (MO, Italy)
V. G. VELLONE1, G. REPETTO1, M. TRAVERSARI2, A. VAZZANA3, R. BOANO1, G. GRUPPIONI2, E. FULCHERI1
1Anatomia Patologica, Dipartimento di Scienze Chirurgiche e Diagnostiche Integrative, Università di Genova; 2Laboratorio di Antropologia, Dipartimento Beni Culturali, Università di Bologna - Campus di Ravenna; 3Laboratorio di Antropologia, Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino
Roccapelago is a small town of the Apennines; during the restoration of the local parish church it was found a burial crypt containing the remains of 300 individuals who lived between the sixteenth and seventeenth century AD, from which the study of 25 individuals was possible. The unique location of the crypt built on the ruins of the ancient fortress of Roccapelago and equipped

Paleonutrition and Paleopathology: Food and Disease at the Renaissance Courts of Naples and Florence
G. FORNACIARI1, C. LUBRITTO2
1Division of Paleopathology, Department of Translational Research and Advanced Technologies in Medicine and Surgery, University of Pisa, Italy; 2CIRCE Lab, Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, Second University of Naples, Caserta, Italy

The study concerns 25 individuals from the Basilica of S. Domenico Maggiore in Naples (15th-17th centuries) and of 20 individuals from the Medici Chapels of the Basilica of S.