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**A preliminary assessment of the preserved human brain tissue
from Magistrates Court, Hull.**

by

Dr Keith Dobney and Professor Don Brothwell

Summary

Several fragments of well preserved human brain were recovered from a medieval skeleton at the Magistrates Court site, Hull. Although of limited value in providing detailed information about the medieval friars of Hull, it provides an almost unique opportunity to address, in detail, questions regarding the preservation of soft tissue. Histological, chemical and biomolecular studies are recommended although these need to be co-ordinated. The possibility of uncovering more during the course of excavation should be borne in mind.

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A preliminary assessment of the preserved human brain tissue from Magistrates Court, Hull.

Introduction

During excavation of medieval friars from the site of Magistrates Court in Hull, a cranium was recovered which appeared to contain several small pieces of possible organic matter. Although it was initially thought to be a cranial endocast, the EAU was contacted to provide some further insight. On closer inspection, during a site visit which took place on 06/07/94, Dr Keith Dobney confirmed it to be several fragments of human brain. This identification was based on an extremely convoluted surface (which would not occur if only an endocranial cast), its almost rubber texture and the light grey-cream colour of its interior (viewed where small areas had been damaged). The two largest fragments appeared, in fact, to represent entire but very shrunken lobes of the brain.

The specimens, along with the entire skeleton from which they were recovered, were then removed to the York Archaeological Trust Conservation Laboratory at the request of Sonia O'Connor. The fragments of brain tissue were then taken to the University of York's Biology department where cold and freezing facilities were made available.

Professor Don Brothwell of the Department of Archaeology University of York was informed of its discovery and also confirmed the specimen to be almost certainly preserved human brain. The human bones specialists of the Calvin Wells Laboratory, Department of Archaeological Sciences, University of Bradford were then informed and they contacted Dr McLennan

of Leeds medical school, St James Hospital who offered to carry out various analyses such as C.T. scanning and histological work. This will involve pickling the two largest pieces in formaldehyde. These specimens are therefore now in Leeds. Several smaller pieces were retained and frozen in the department of Biology, University of York, to await further biomolecular analysis.

Implications

Finds of preserved human brains are extremely rare and usually associated with exceptional preservational regimes, for example the various 'bog bodies' from Britain and Denmark. Very few examples from ordinary inhumations have been documented, the only other from Britain being a Roman example from Droitwich, excavated in the 1950's. The most celebrated examples from Europe are those from the medieval cemetery at Dordrecht, Netherlands, where several brains were preserved.

Analysis of the material is of intrinsic and specialist interest only and will tell us very little regarding the individual or population it represents. It is, however, extremely interesting in that it provides a rare opportunity to study the mechanisms of its remarkable preservation as outlined below:

1. C.T. scanning and more conventional histological work will provide detailed information on the quality of the tissue and its internal architecture.
2. Chemical analysis involving the study of

lipids and cholesterol may indicate why it has preserved.

3. The study of any preserved biomolecules will throw important light on the taphonomy of DNA.

Where rare states of preservation are encountered, further detailed investigation is certainly worthwhile since additional genetic and immunological information may be recovered.

Recommendations

It is recommended that all interested specialists are brought together to produce an integrated research design detailing any future work on this material. This would perhaps best be co-ordinated by Dr Simon Mays (AML), Professor Don Brothwell (University of York) and Dr Charlotte Roberts (University of Bradford).