

Phase 3 – Mass Burial Pathology

St Brice's Day, AD 1002

Palaeopathology

Skeletal pathology provides information regarding the living conditions, diet, work, access to medical care, as well as numerous other aspects of everyday life of past populations. These show through detectable changes that take place in the bone, whether genetic or resulting from 'stress' of various kinds over the individual's lifetime. The skeletal alterations observed within this assemblage included:

- **Previously healed injuries (antemortem trauma),**
- **congenital and developmental defects (spina bifida occulta, supernumerary vertebrae, other spinal oddities),**
- **joint disease of the spine (osteoarthritis, Schmorl's nodes),**
- **circulatory disruptions (osteochondritis dissecans) and**
- **dental disease (e.g. caries, calculus, abscesses, periodontal disease, antemortem tooth loss, linear enamel hypoplasia, and other dental anomalies).**

One young man displayed characteristic skeletal lesions of tuberculosis.

Congenital and developmental defects

The most commonly identified congenital and developmental abnormalities, are found in the spine. These conditions can result from genetic factors, such as inbreeding within the same population. The surrounding environment can also influence developmental abnormalities, for example if the mother is affected during pregnancy by virus or poor diet. The elevated frequency of spinal congenital or developmental defects (especially the prevalence of 'extra' vertebrae) in the bones here, may suggest the Oxford mass grave bones came from a distinctive subset of the population. Perhaps this differentiation from the greater populace of Oxford at the time could be a contributing factor to the events leading up to the violent altercation that resulted in their deaths.



Above: Spina bifida occulta in the sacrum of Skeleton 1893. The bone in the centre has not fully met, leaving the spinal cord exposed.



Above: Sacralization of the sacrum and the bottom vertebra (L5/lumbar vertebra 5) of Skeleton 1978. L5 has completely fused to the top of the sacrum.

Skeletal indicators of strenuous activity

Many of the Oxford men's bones showed the result of stress: upper arms, shoulders and spines all strongly suggest repetitive strenuous tasks engaged in from a young age.



Left: Vertebrae of Skeleton 1884 showing Schmorl's nodes (arrowed) – pitting on the surface of the vertebra caused by repeated strenuous tasks.

Antemortem trauma

One man had a well healed blade wound on his right arm and another had one on the back of his skull. These must have occurred years earlier and had fully healed. Cranial injuries are very serious, and are predisposed to complications. The initial wound (i.e. laceration of the scalp) would produce much bleeding and pain. As the bladed weapon hit the cranium with enough force to penetrate both the outer and inner tables of the cranial bone, this wound have produced an entry-way into the brain case, potentially providing a pathway for bacteria to reach the brain and cause inflammation and/or infection. Long term survival of cranial injuries can have a variety of severe residual defects including epilepsy, chronic headaches, problems with sight and movement, memory loss and a variety of psychological problems. The same skull had had a hole drilled in it: this is a form of early surgical treatment called trepanation, supposed to relieve pressure on the brain. It is unlikely to have been successful very often, but it must have been so in this case, as he survived to suffer a blow to the back of his neck which did not heal.



Above: Healed blade wound on the left occipital bone (skull) of Skeleton 2057.



Right: Fused 11th and 12th thoracic vertebrae, the result of a compression fracture, e.g. a fall from height.

In general, however, despite these observations, the Oxford men were robust and healthy, but with a seemingly high prevalence of congenital/developmental defects and numerous indicators of long term strenuous physical activity from a young age. The presence of well healed trauma suggested a previous history of violence.