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The diagnosis and context of a facial deformity from an Anglo-Saxon cemetery at Spofforth, North Yorkshire

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ABSTRACT

An individual aged between six and seven years at death from a 7th- to 9th-century cemetery at Village Farm, Spofforth, North Yorkshire, presented significant pathological swelling to the left facial bones. The ectocranial surface was bulbous and uneven, and the expanded diploë was densely packed with a mass of thick trabeculae. Radiological and histological analysis, in combination with the macroscopically observed pathological changes, supported the differential diagnosis of fibrous dysplasia. The skeletal changes to the left face and jaw would have resulted in a significant facial deformity. Individuals with physical impairments or disfigurements from Anglo-Saxon cemeteries, although rare, are sometimes afforded unusual burial practices more often associated with deviancy, for example, at the edge of cemeteries or on a reversed orientation. These unusual interments seem to indicate that diminished physical capabilities or unusual physical appearance resulted in disability in the form of diminished social status. The child from Spofforth was, however, buried in a normative manner, extended, supine and in a plain earth-cut grave, with no indication that their facial deformity had prompted unusual funerary provision. This example of facial disfigurement contributes to a growing corpus of potentially disabled individuals from early medieval England.

Keywords: Palaeopathology; Fibrous Dysplasia; Anglo-Saxon; Burial; Disability

INTRODUCTION

The cemetery at Village Farm, Spofforth, North Yorkshire was excavated in 2001, revealing 169 inhumations from 117 distinct grave cuts and a considerable quantity of disarticulated charnel comprising a minimum number of 250 individuals (Craig, 2008; NAA, 2002). Radiocarbon dates obtained from nine burials across the site indicated that interments were made between the mid-7th and mid-9th centuries (A.D. 660-780 (sk 60), A.D. 660-810 (sk 229), A.D. 660-830 (sk 247), A.D. 680-880 (sk 429), all to two sigma) (Gail Hama, *Pers. Comm.*), the period often associated with the conversion of the majority of England to the Christian faith (Boddington, 1990; Evison, 1956; Faull, 1976; Geake, 1992; 2002; Meaney & Hawkes, 1970; Morris, 1983). Osteological analysis of the complete skeletal population identified one individual, Skeleton 177, who presented an abnormal and pathological swelling to the left facial bones. The following discussion describes these pathological lesions and presents a differential diagnosis based on visual, radiographic and histological examination. A context for the pathological specimen from Spofforth is also provided by consideration of the relationship between physical impairments, social status and funerary provision at early medieval sites across England.

METHODS

The remains of Skeleton 177 were subjected to visual examination using a range of standard osteological methods. Completeness and preservation were assessed using the standards defined by Brickley and McKinley (2004). As it was apparent that the individual was a nonadult, age at death was assessed using dental development stage (determined from visual and radiographic examination) (Brothwell, 1981; Moorrees *et al*., 1963), diaphyseal length and fusion stage of the epiphyses (Scheuer and Black, 2000). Estimation of biological sex was not attempted as it does not provide reliable results prior to the onset of puberty (Krogman, 1962). Pathological changes to the bones were recorded based on visual examination, supplemented by radiography and histological analysis (Bancroft and Stevens, 1996: 309-339).

RESULTS

Skeleton 177 comprised the well-preserved, 75% complete remains of a child aged between six and seven years at death. The individual presented an abnormal expansive deformity of the left facial bones, including the mandible, frontal, zygomatic, sphenoid, parietal and temporal. The margin between pathological and normal bone was poorly circumscribed, with a smooth transition of one into the other. This margin was marked by a porous and spiculated border on the endocranial surface of the temporal bone. The endocranial surface of the affected elements, particularly the inferior portion of the parietal, the sphenoid and the squamous portion of the temporal, were grossly deformed by nodular eminences. The ectocranial surface of the affected elements was bulbous, uneven, and pockmarked in places. The grossly expanded diploë of all affected elements (where observable due to post-mortem breakage) was densely packed with a mass of thick trabeculae. All affected elements were abnormally heavy in consequence. Figure 1.

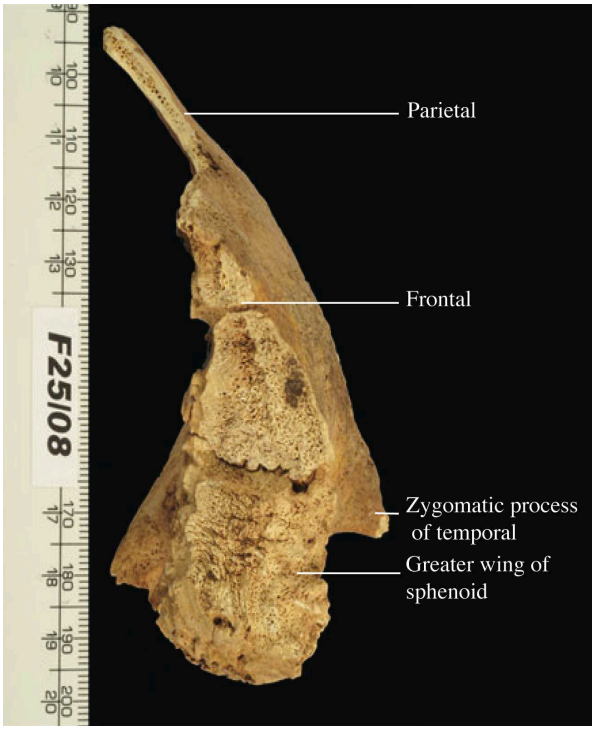

Figure 1: Left frontal, parietal, temporal and sphenoid from Skeleton 177 (post-mortem breakage approximately along coronal plane, anterior view) showing gross expansion. Photo D Thompson/ G Craig.

The pathological swelling was particularly evident on the mandible, where the left ascending ramus was significantly deformed by lateral expansion. Figure 2. This deformity began adjacent to the deciduous 2nd molar forming a huge bulbous mass of bone, which continued to the posterior edge of the ramus. The lingual surface of the left mandible was largely unaffected, presenting the same surface morphology as the unaffected right portion. The left coronoid process was entirely absent, with no evidence it had ever formed. The mandibular condyle on the pathological side of the mandible was damaged, but was sufficiently preserved to identify an abnormal appearance. The joint surface was expanded and flattened in comparison with the right side. The corresponding temporo-mandibular joint surface of the temporal was characterised by smooth pathological bone and lacked the normal cup-like recess. A flat facet was apparent where the abnormal mandibular condyle had articulated. This altered morphology would have resulted in instability of the joint.

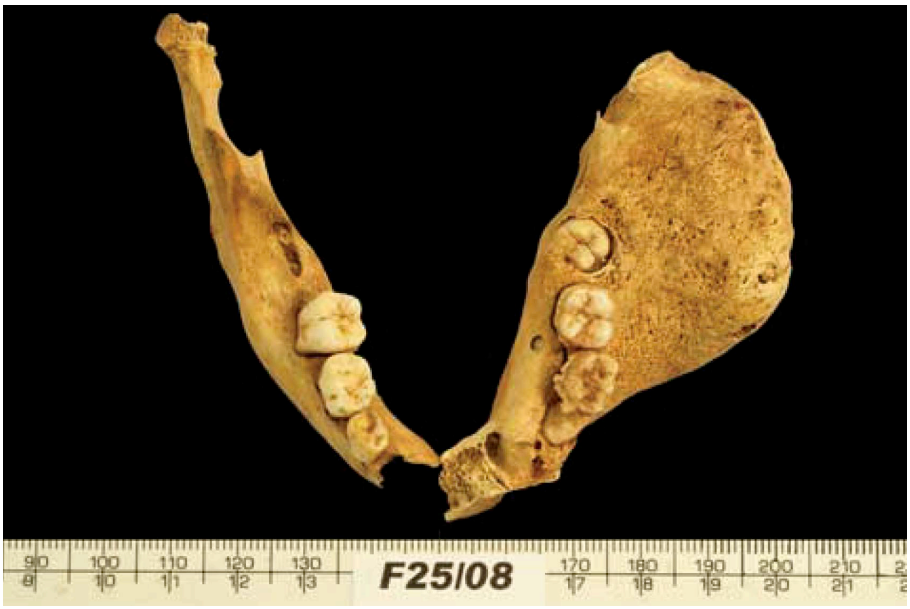

Figure 2: Mandible of Skeleton 177. Top image: pathological left portion in contrast to normal right portion. Bottom image: buccal aspect of pathological left portion of mandible showing location of calculus deposits on molars. Photo D Thompson/ G Craig.

The pathological lesions were strictly lateralised, affecting elements on the left side of the cranium and mandible only. No changes were observed on complementary elements from the right portions of the cranium or mandible, and where changes were observed in midline elements (the mandible, frontal and sphenoid), the lesions did not cross the midline. There were no pathological changes to any other elements of the skeleton, suggesting the lesion was strictly localised in the left cranio-facial area. Figure 3.

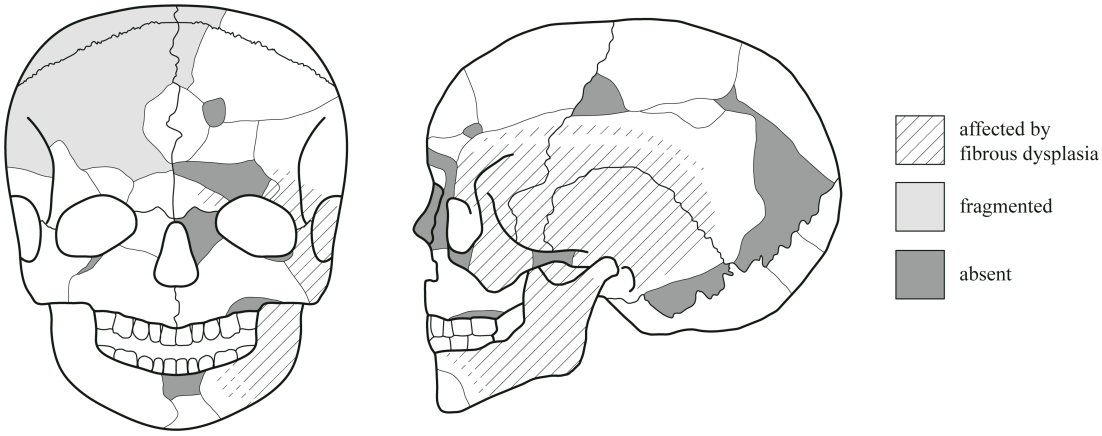

Figure 3. Distribution of pathological lesions in Skeleton 177. Illustration I Atkins.

All pathological elements were radiographed. This revealed the lesions to be largely radio-opaque with soft edges and a cotton wool-like appearance. The most radio-opaque areas had a dimpled appearance similar to that of orange peel. Figure 4.

Histological analysis was performed on a decalcified block of bone from the left zygomatic. Only one sample was taken from the site of a post mortem break across the bone, thus minimising the destruction caused by the sampling process. When viewed in magnification, the histological section revealed pathological, metaplastic trabeculae merging with the cortex. Figure 5.

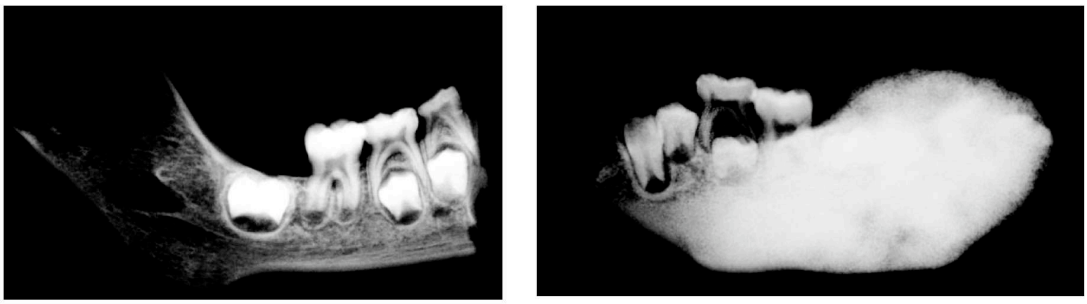

Figure 4: Radiographs of mandible from Skeleton 177. Right portion is normal, however left portion shows radio-dense expansive lesion and ‘orange peel’ appearance. Image D Thompson/ G Craig.

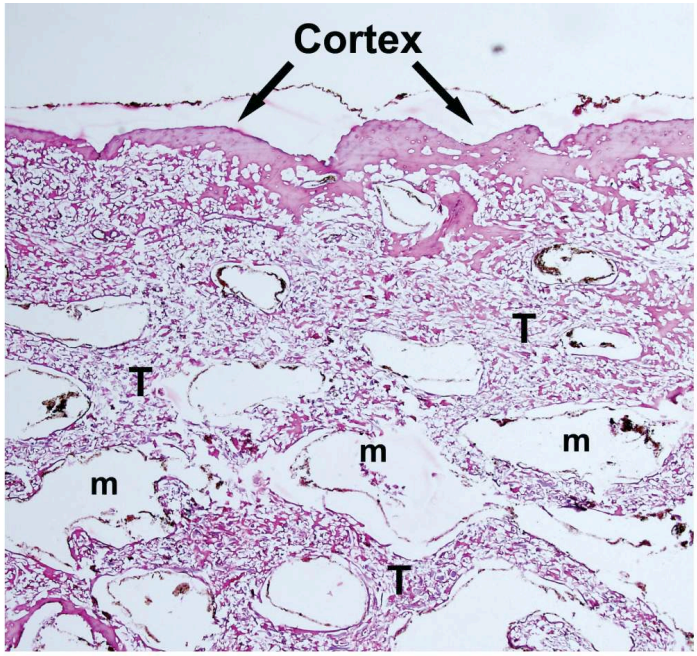

Figure 5: Haematoxylin and eosin stained histological section of left zygomatic showing trabeculae (T) of pathological/metaplastic bone surrounding empty marrow spaces (m) and merging with the cortex. Image D Thompson/ G Craig.

Pathological changes to the dentition indicated potential secondary effects of the expansive lesions. Unilateral calculus deposits were noted on the molars of the left dentiton (deciduous and permanent). Figure 2. The calculus deposit on the permanent 1st molar was located extremely high on the tooth, within the first third of the crown. Calculus was also located on the occlusal surfaces of the molars, particularly the

deciduous 2nd molar. This pattern of calculus suggests the left dentition was not used as consistently during mastication as the right, allowing calculus to build up on the occlusal surfaces. These pathological changes are consistent with aplasia of the left coronoid process, as noted above, which would suggest abnormality of the facial musculature, particularly M. temporalis, which attaches along the superior border of the coronoid process (Moses *et al*. 2005: 50). In addition, tissue inflammation in the periodontal region that resulted in an abnormally high gingival margin would explain the formation of calculus high on both the lingual and buccal surfaces of the teeth. Further dental pathology included two smooth margined sinuses located on the buccal and lingual surfaces of the left mandible, suggesting some pyogenic infection in the left jaw.

DISCUSSION AND DIFFERENTIAL DIAGNOSIS

The primary physical manifestation of the lesions described will have been significant skeletal deformity to the left portion of the face, particularly focussed upon the left jaw-line. The external morphology of the deformity to the zygomatic, frontal, parietal and temporal is smooth and the bones retain their relative morphology, despite being bulbous and softened in appearance. It is possible that overlying tissues could have largely masked any deformity of overall skull shape in these areas. The mandibular pathology is, however, too substantial to have been hidden, and would have resulted in a significant facial deformity.

Differential diagnosis based on visual assessment of the pathological changes suggested several possible conditions: various forms of bone cancer, Paget's disease and fibrous dysplasia. The size, shape and purely blastic nature of the lesions were not characteristic of any of the major bone cancers (Aufderheide & Rodríguez-Martín, 2008: 375-92). Paget's disease was also an unlikely diagnosis given its rare incidence in individuals under the age of 40 years (Aufderheide & Rodríguez-Martín, 2008: 413; Mirra *et al*.; 1995a, Ortner & Putschar, 1985: 319). Moreover, the juvenile form of Paget's is not only very rare, but usually widespread rather than affecting a single

bone or bone group (Aufderheide & Rodríguez-Martín, 2008: 413; Ortner & Putschar, 1985: 319).

The sclerotic appearance observed in the radiographs is characteristic of both fibrous dysplasia and forms of Paget's disease, however the orange-peel appearance is documented as primarily characteristic of the former (Abdelkarim *et al*., 2008: 50, Mirra *et al*., 1995b). The complex pattern of trabeculae observed in the histological section is consistent with patterns described as Chinese characters in the clinical literature and documented as a manifestation of abnormal bone in fibrous dysplasia (Cawson & Odell, 2008: 184; Chapurlat & Orcel, 2008: 63-4; Laskaris, 2000: 288; Riminucci *et al*. 1999 :251).

Fibrous dysplasia is described as a benign bone lesion, where the normal bone tissue is replaced by fibro-osseous connective tissue (Abdelkarim *et al*. 2008; Aufderheide & Rodríguez-Martín, 2008: 420-1). The modern prevalence of this disease is unknown, but study of small, isolated populations has permitted an estimation of approximately one case in 30 000 (Chapurlat & Orcel, 2008: 58). Understanding of the pathogenesis of fibrous dysplasia has benefited from research implicating a signalling protein mutation in osteoclast cells, which results in increased cell proliferation and retarded cell differentiation (Marie *et al*., 1997; Riminucci *et al*., 1997). Fibrous dysplasia is frequently confined to one region of the skeleton – the monostotic form, found in 60% of individuals with the disease – where it affects the skull and jaws in 20% of sufferers (Chapurlat & Orcel, 2008: 58; Aufderheide & Rodríguez-Martín, 2008: 420). Onset is often during childhood or adolescence.

The symptoms of fibrous dysplasia are primarily physical disfigurement, however bone pain, bone fractures, visual impairment and hearing loss have been reported in some individuals with craniofacial manifestations, the result of structural weakness in pathological bone and compression of the cranial nerves by swelling of the bone around the orbits, sphenoid and temporals (Chapurlat & Orcel, 2008: 58-62; Ricalde & Horswell, 2001: 157). In addition, in a small percentage of descriptions of fibrous dysplasia (<5%), skeletal deformities are accompanied by endocrine disturbances known as McClune Albright's syndrome. This syndrome can result in precocious

puberty, skin pigmentation (so-called café-au-lait spots), hyperthyroidism, disturbances to the pituitary, ovaries and parathyroid glands and cardio-vascular problems (Albright *et al*., 1937; Chapurlat & Orcel, 2008: 59; McClune, 1936). Precocious puberty has been linked with premature epiphyseal fusion, presenting a possible means by which the effects of the syndrome could be detected in skeletonised remains. Albright and colleagues (1937: 736) noted an example of a child aged three with McClune Albright's syndrome who had already developed eight carpal bones instead of the three normally ossified at this age. The links between onset of puberty and the ossification of the distal humerus, proximal radius, proximal ulna and ilium, ischium and pubis have also been demonstrated (Angel *et al*., 1986; Legge, 2005). These links between bone age and puberty have received limited exploration in an osteological context and, moreover, the clinical literature tends to focus upon observation of secondary sexual characteristic development over anthropomorphic measures of puberty such as body fat or bone age, resulting in limitations to our clinical understanding of how bone development links to puberty (Brooks-Gunn & Warren, 1985; Coleman & Coleman, 2002: 536). Nevertheless, the evidence suggests that there might be grounds for identifying precocious puberty in Skeleton 177 through assessment of epiphyseal fusion stages. Although it seems unlikely to expect fusion of the epiphyses associated with puberty in adolescence in a six to seven year old child, there remains the potential for advancement in epiphyseal fusion as identified by Albright and colleagues (1937) in the hands.

Assessment of epiphyseal fusion stages attained by Skeleton 177 provided no conclusive evidence of premature fusion. An examination of all preserved fusion and ossification sites indicated an age at death between around five years (fusion complete between body and wings of the first sacral vertebra) and twelve years (ossiculum terminale of dens of axis unfused) (Scheuer & Black, 2000: 218). The major epiphyseal fusion sites associated with puberty were all unfused. The age at death indicated by epiphyseal fusion is, therefore, entirely consistent with the age at death indicated by dental eruption of six to seven years, providing no evidence to confidently infer that the symptoms of McClune Albright's syndrome were experienced by the child considered here.

Archaeological examples of fibrous dysplasia are not commonly reported, however three can be highlighted that are roughly contemporary with the example from Spofforth. Calvin Wells (1963) reported a 30-40 year old male from Caistor-on-Sea, Norwich (c. A.D. 650) with an expanded humeral diaphysis. Radiological examination revealed cystic lesions containing fibro-osseous tissue. Three examples of fibrous dysplasia were also identified radiologically at St Peter's, Barton-upon-Humber, of which two were medieval in date: a 25-34 year old female (skeleton 2785, phase D/E) from a burial dated to A.D. 950-1300 presented a swollen and deformed femoral shaft; and a 35-44 year old male from 10th-12th century phases (skeleton 2799, phase E) was diagnosed with polyostotic fibrous dysplasia comprising lesions on the right radius and tibia (Waldron, 2007: 111). These examples are all post-cranial lesions; no examples of craniofacial fibrous dysplasia of Anglo-Saxon date are recorded in the published literature.

Whilst it has not been possible to determine whether Skeleton 177 suffered endocrine symptoms or any nervous damage linked with craniofacial fibrous dysplasia, the physically deforming effects of the condition are more clearly indicated. In the remainder of this paper, the funerary context of Skeleton 177 will be highlighted to explore whether their treatment in death can shed light on the social implications of their deformity. In addition, a wider context for Skeleton 177 will be explored through a discussion of the study of disability in Anglo-Saxon archaeology.

SKELETON 177 IN CONTEXT

It has been suggested in this paper that Skeleton 177 from Spofforth will have experienced a significant facial deformity, and as such stood out from their peers as abnormal. At this point the meanings of the terms physical impairment, disability and deformity require clarification. In an archaeological context, the term physical impairment has generally been used to refer to a biomedical condition affecting the physical body, whilst the term disability has been used to refer to a social response to this condition (Metzler 2006: 65; UPIAS 1976). Unlike the former, the latter is contextual; the degree of disability experienced by an individual may vary depending on factors such as the requirements placed on an impaired individual by their peers

(and thus the degree to which they can be productive members of society) and perceived ideas of normality and abnormality (Dettwyler 1991: 380; Roberts 2000:46). These definitions are maintained here, however an additional term – deformity – is employed to mean any physical impairment that results in distortion in physical form, therefore in abnormal physical appearance (Pearsall 2009: 376).

In clinical studies, facial deformity is widely considered to create one of the most distressing forms of disability, resulting, as it does, in differences that affect the way an individual communicates with the world through both facial expressions and speech (Bull & Rumsey, 1988: 1-8; Macgregor, 1970). Facial disfigurement has, moreover, been considered the epitome of disability – something that affects both the sufferer and those that interact with them – and thus more frequently results in social stigma than non-facial deformities, which can be more easily hidden away from the gaze of others (Lansdown *et al*., 1991; Macgregor, 1979; Metzler 2006: 4). Documentary evidence, recently collated by Sally Crawford (2010), suggests that deformities also resulted in a greater perception of disability than more easily hidden impairments in the early medieval period. Asser's late 9th-century *Life* of King Alfred records how Alfred was afflicted by various mysterious illnesses. It is notable that his symptoms, although they caused him great suffering, did not result in any physical blemish "whereby he would be rendered useless and contemptible" (Keynes & Lapidge, 1983: 89). That Alfred's illnesses are treated as a sign of his nobility and strength in the face of affliction appears contingent on their not affecting his physical appearance and, by association, his social status. The psychological and clinical evidence for the disabling effects of facial deformity, in combination with historical evidence for attitudes to disfigurement provide convincing evidence to suggest that facial disfigurement had the strong potential to result in disability in the early medieval period.

In order to consider whether physical impairments identified in a skeleton resulted in disability during life, it is possible to explore the funerary rites afforded to the individual after death. This approach comes with the intrinsic caveat that the selection of funerary practices death might have no relationship to the identity or status of their recipient during life. Indeed it is accepted that any associations that might exist

between identity in life and death are ambiguous and complex (Hodder 1980: 165; Parker Pearson, 1982: 100-1). Nevertheless, the Anglo-Saxon period is particularly suited to this sort of investigation, as it has been widely demonstrated that aspects of social identity such as gender, age and social status were reflected in funerary provision (e.g. Buckberry, 2007; Hadley, 2000; Härke, 1990; Lucy, 1998; Stoodley, 2000). Indeed, at Spofforth there is ample evidence in the form of variation in funerary practices to suggest certain aspects of individual identity were reflected in burial. Grave elaborations such as wooden coffins and what appear to have been reused domestic chests, complete with hinged lids and hasp or lock fittings, were used in some graves (Ottaway, 2002) and appear to have been afforded to a sector of society that led more physically active lives than the remainder of the population (Craig, Forthcoming). Grave goods did not form a significant part of the funerary rite and mostly comprised items that were likely worn on the body of the deceased, but greater variation was observed in the disposition of the corpse: two graves contained double burials and a further two individuals had been buried prone. In addition, it also seems that cemetery space was used to express identity of the deceased, with more elaborate graves and the interments of infants located in a zone closest to a contemporary building, which was possibly a church (Craig, 2009).

Despite the potential for the use of varied funerary practices to express aspects of the identity of the deceased, when Skeleton 177 died aged six to seven years, they were buried in a plain earth-dug grave, orientated west-east, in an extended and supine position, with no grave elaborations or grave goods, amongst a cluster of contemporary interments. This form of burial is entirely characteristic of the normative funerary rite at Spofforth (Craig 2009: 229; NAA 2002). The funerary record thus provides no evidence that a significant facial deformity, with the strong potential to result in diminished social status, had any effect on the child's treatment in death.

PHYSICAL IMPAIRMENT AND DISABILITY IN THE EARLY MEDIEVAL PERIOD

There are several examples of individuals from the Anglo-Saxon period with

osteologically identifiable impairments who appear to have received differential treatment in burial. The funerary practices afforded these individuals include reversed burial (for example east-west instead of west-east oriented) and interment in liminal areas, either spatially segregated from the main cemetery or in separate cemeteries altogether (for recent review see Hadley, 2010). Deviant burials, thought to be the remains of the judicially executed, also tend to utilize the same suite of funerary rites (Hadley, 2010; Reynolds, 2009). The use of deviant burial rites in the interments of some physically impaired individuals has been suggested to indicate that they had a diminished social status in consequence of disability (Crawford, 2010; Hadley, 2010; Hadley & Buckberry, 2005; Metzler, 2006; Roberts, 2000; Wade Martins, 1980: 189; Waldron, 2000).

Two features of these studies of the social effects of physical impairment are worth highlighting here. First, that all of the published osteological examples of impaired individuals who have received non-normative burial are adult males. Adult males also comprise the vast majority of all kinds of deviant burial from the Anglo-Saxon period (Buckberry & Hadley, 2007: 311, 315-6; Reynolds, 1998: 155-6). It is unclear whether it would have been considered appropriate to afford women or children deviant funerary rites in any context, whether motivated by criminal behaviour, physical incapacity or mental illness, and therefore whether we should expect disability to be reflected in deviant burial of women or children. Second, that we have a limited understanding of the motivations behind the funerary treatment of the physically impaired. Whilst the examples noted by Hadley (2010: 108-9) provide compelling evidence for social sanctions against some individuals with osteologically identifiable deformities, she does also highlight archaeological evidence that suggests, in other cases, there was no identifiable differences between the funerary treatment of individuals with significant physical impairments and their able-bodied peers. It appears that the most severe examples of physical impairment did not invariably receive similarly extreme funerary provision, as is demonstrated by the normative burial of an adult male from the 7th-11th century Black Gate cemetery, Newcastle, who presented pathological changes indicative of widespread paralysis (Boulter & Rega, 1993; Hadley, 2010: 108). It might be hypothesised, therefore, that severe physical impairment did not form the only factor in creating extreme disability. It is plausible

that the degree to which physical incapacity affected daily life and the perception of an individual by their peers could have been contingent on many factors including status, profession, gender, and indeed, age.

There is ample evidence to suggest that the social position of children was different from that of adults in Anglo-Saxon society (Crawford, 1999) and a variety of evidence can be presented to hypothesise how this might impact on the study of disability amongst juveniles. Documentary records indicate that physical capabilities such as hearing and sight were vital to the independent legal status of the individual. The 9th-century lawcodes of Alfred dictate that "if anyone is born dumb or deaf so that he can neither deny nor confess his wrongdoings, his father shall pay compensation for his misdeeds" (Alfred c.14; Attenborough, 1922: 71). This law has been interpreted as indicating that the blind and deaf had diminished legal responsibility and held a position of dependency on others (Crawford, 2010: 95). However, we also know that legal responsibility was only achieved around the ages of 10 to12 years in Anglo-Saxon society and that a position of dependency was normal for Anglo-Saxon children (Crawford, 1999: 53; Härke, 1997: 126). Whether blindness, deafness and other impairments implicated as severe disabilities amongst adults would have been similarly detrimental during young childhood, when social independence was not so great, is not clear. Currently, documentary records provide some of the most valuable insights into the lives of disabled children, for example recounting their ailments and their journeys, often in the company of adult parents or carers, to holy places to receive blessings and cures (Crawford, 1999: 39), but, as yet, little osteological evidence has been produced to supplement the historical evidence.

Funerary evidence also contributes to the suggestion that Anglo-Saxon children were not afforded comparable status to that of their older kin after death. Until the mid-7th century the grave goods that commonly display gender identities are rarely found with children (Crawford, 1999; Stoodley, 2000) and, after grave goods become rare and new forms of burial elaboration such as coffins, grave linings and grave markers increase in popularity, the youngest individuals are less frequently afforded graves with these elaborate additions (Buckberry, 2007). The practice of burying children either in proximity to, or in the same grave with, physically impaired adults has

recently been highlighted as evidence of the potential similarities in the status of the impaired and children (Lee, 2008). A viable explanation for this practice is that both young children and the physically impaired were unable to have full social responsibility, whether through immaturity, mental or physical impairment (Crawford, 2010; Lee, 2008). If immaturity in children was equated by Anglo-Saxon society to physical impairment amongst adults, both parties sharing limitations to independence, it might be hypothesised that the disabled child would suffer no additional stigma.

CONCLUSIONS

This paper has presented the differential diagnosis of fibrous dysplasia in a six to seven year old child from a 7th-9th century cemetery. This condition would have manifested primarily as a deformity to the left jaw, which appears also to have been associated with abnormalities of the musculature in the surrounding area and dental pathology resulting from avoidance of mastication on the affected side of the face. Evaluation of the funerary treatment of this individual indicated that they received a normative burial, and that their facial deformity did not result in any form of social exclusion that was expressed through their burial.

The contextual evidence presented here emphasizes the complex relationship between physical impairment or disfigurement and disability and serves as a caution against assuming that individuals such as the example discussed here, who looked physically distinctive in life, will have necessarily experienced social exclusion that can be detected through assessment of burial rites. Furthermore, it appears that conditions resulting in deformity of the face, which can be linked to significant disability in both early medieval documentary records and modern clinical literature, did not invariably result in proportionally extreme treatment in burial. One caveat to any interpretation of disability in the past is that the archaeological record provides little evidence with which to evaluate the degree of care and compassion an individual experienced during life (Roberts, 2000: 57; Tilley & Oxenham, 2011); any investigation of the social effects of physical impairment from archaeological evidence must always be aware of this limitation. The interpretation of this example of fibrous dysplasia has also

highlighted several areas for which greater research is needed if we are to begin to fully understand the post-mortem treatment of disabled individuals. The evidence currently available presents a confusing and perhaps conflicting impression of the reactions to disability in Anglo-Saxon England. Our understanding of the potential affects of disability on children is particularly limited and, as yet, it is not clear whether we should expect nonadult and adult status in death to be similarly sensitive to disability. Continued interest in exploring the social context of burials such as Skeleton 177 has the potential to help decipher complex contemporary reactions to disfigurement and shed light further on how funerary treatment was employed in the expression of identity during the Anglo-Saxon period.

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