

Pick's disease confined to the parietal lobes is uncommon, but when it is, the distribution corresponds to that indicated in this case.

Probably, therefore, Darius Clayhanger, and by inference Enoch Bennett, suffered from Pick's disease. Was the disorder familial? Reported cases most commonly suggest an autosomal dominant inheritance. The evidence in the case of the Bennett family is unimpressive however. Dorothy Cheston Bennett expressed fears that a similar disease was affecting Arnold Bennett (M Drabble, personal communication), a concern he shared towards the end of his life,² but his *Journals* nowhere support the possibility.

Margaret Drabble has suggested that a similar disease killed two of his sisters,¹² but has indicated (personal communication) that the evidence for this was based on family gossip alone.

Russell Brain claimed that dressing apraxia, as a symptom, had not been specifically described.¹³ Surprisingly, he seemed unaware of the French cases, and clearly he was not a devotee of Arnold Bennett. Had he read *Clayhanger*, he would have had access to a masterly account of the syndrome and at the same time would have partaken of one of the masterpieces of twentieth-century fiction.

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Arthritis in Saxon and mediaeval skeletons

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Abstract

Examination of 400 Saxon, Romano-British, and mediaeval skeletons from seven archaeological excavations in the west of England showed an unexpectedly high incidence of osteoarthritis and osteophytosis. Three skeletons had evidence of an erosive peripheral arthritis—one with probable gout, one probable psoriatic arthropathy, and one with possible rheumatoid arthritis. The pattern and types of rheumatic disease, and the resultant disability, were apparently different. An exuberant form of large joint osteoarthritis was common and rheumatoid arthritis and similar diseases rare.

Introduction

Paleopathology, the study of diseases in antiquity, may provide important information on changing patterns of disease and give clues to aetiology and prevention. Skeletons give a chance to document bone and joint disease in particular, and are a major source of paleopathological data.^{1 2}

The antiquity of many rheumatological diseases, including osteoarthritis, ankylosing spondylitis, and gout, is well estab-

lished,³ but rheumatoid arthritis may be of recent origin.^{4 5} Furthermore, the pattern and severity of these diseases are thought to vary in different societies and may be changing.^{6 7} We have recently had the opportunity to study some 400 Saxon, Romano-British, and mediaeval skeletons and to document evidence of arthritic changes, which has provided a wealth of new information on the paleopathology of rheumatic diseases.

Collection of material

The skeletons came from seven separate archaeological excavations in the west of England. About 250 were mediaeval (thirteenth to fifteenth centuries) and came from Taunton Priory, Bristol Greyfriars, and Bath Orange Grove. The remainder were either Romano-British (first to fourth centuries) or Saxon (ninth to eleventh centuries); the 50 Saxon skeletons came from Trowbridge, in Wiltshire.

After excavation, the skeletons were lifted, washed, and repaired where necessary. The presence of one of us (JR) on the site helped to minimise the risk of damage, and allowed important in-situ observations of the material to be made. The excavations were from lay cemeteries, and the adult skeletons examined had a roughly equal sex incidence.

Examination

The skeletons were temporarily removed for further examination, and all were assessed by a paleopathologist (JR). Many specimens also underwent radiography and examination by a radiologist (IW) and a rheumatologist (PD). Photographs and radiographs of the more interesting cases were kept as a permanent record.

The estimated age, sex, stature, and dental state of each skeleton were noted as were the presence or absence of bone and arthritic changes.

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Findings

The best preserved skeletons were either mediaeval (about 150) or Saxon (50). Most were of young adults with an estimated age range of from 20 to 50 years. There was no apparent pathological abnormality in 30%. There was evidence of infection (osteomyelitis or periostitis) in 3.5% and bony injury in 8%; the latter included one example of a sword cut. There was no evidence of tuberculosis in the 400 complete skeletons examined, although one disarticulated set of vertebral bodies did show the typical radiological features of spinal tuberculosis.

The commonest changes were arthritic. Some spinal changes were seen in about half the skeletons, and nearly 40% had abnormalities of the peripheral joints—predominantly osteoarthritic or osteophytic changes in large joints. Osteophytes alone were not uncommon, but evidence of an altered bony contour or radiological evidence of bone sclerosis and cysts, or a combination of these, were frequent, and taken to be unequivocal evidence of osteoarthritis.⁸ Small joint lesions were less common, although not all the bones of the hands and feet were always available. Only three skeletons were thought to have evidence of an erosive arthropathy, and in each case a careful radiological and

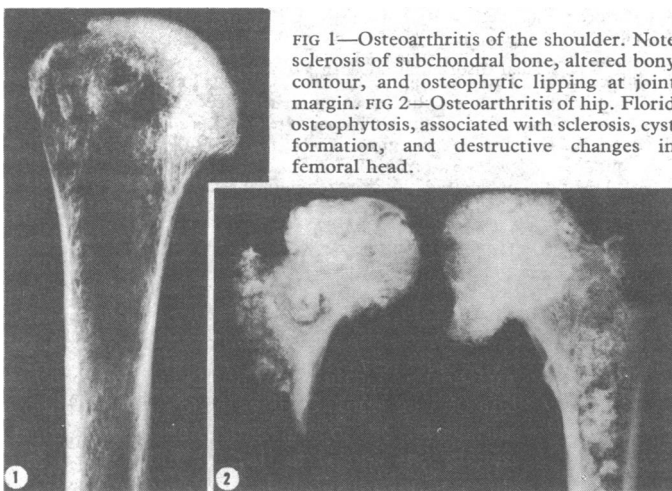


FIG 1—Osteoarthritis of the shoulder. Note sclerosis of subchondral bone, altered bony contour, and osteophytic lipping at joint margin. FIG 2—Osteoarthritis of hip. Florid osteophytosis, associated with sclerosis, cyst formation, and destructive changes in femoral head.

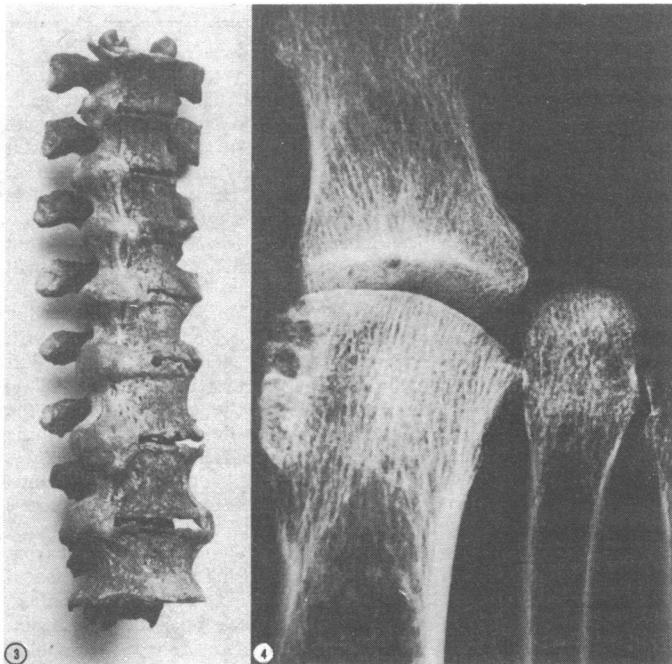


FIG 3—Idiopathic skeletal hyperostosis. This specimen, belonging to a Saxon bishop, shows typical osteophytic changes on right side of thoracolumbar vertebrae. FIG 4—Gout. Para-articular erosions, with sclerotic bone margins are typical of gout at first metatarsophalangeal joint.

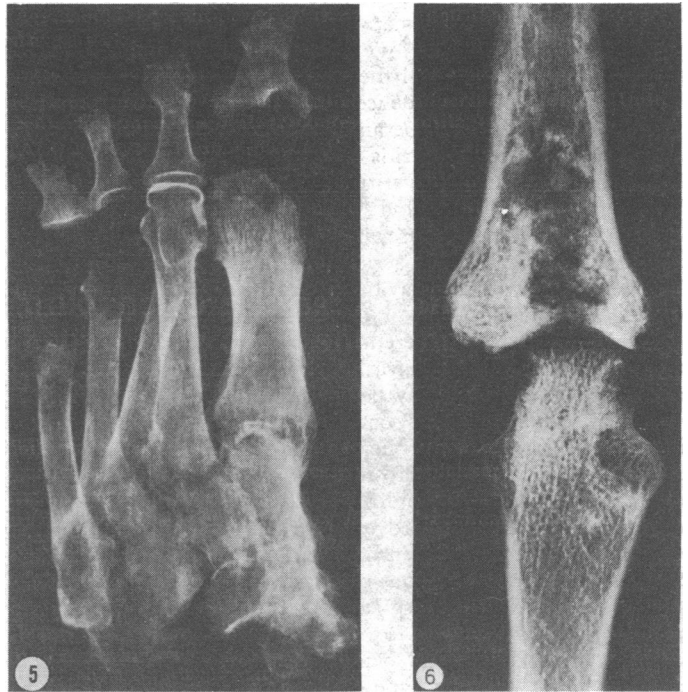


FIG 5—Psoriatic arthropathy? Note ankylosis of midtarsal joints and destructive changes in terminal phalanx of big toe. FIG 6—Rheumatoid arthritis? Peri-articular erosions around this metacarpophalangeal joint are compatible with a diagnosis of rheumatoid arthritis, although another erosive arthropathy cannot be excluded.

pathological examination allowed them to be assigned a probable diagnostic category.

Large joint osteoarthritis—Hip and shoulder osteoarthritis were both common. The 50 Saxon skeletons, however, had an even higher incidence of advanced changes (shoulder 24%, hip 28%) than the 150 mediaeval specimens (shoulder 12%, hip 10%), and exuberant osteophytosis of the shoulder or hip was a surprisingly frequent finding (figs 1 and 2).

Spinal disease—Spinal osteophytosis of both the vertebrae and apophyseal joints was frequent (47% Saxon skeletons, 49% mediaeval). Associated bone sclerosis was often present, indicative of osteoarthritis. Five examples of idiopathic skeletal hyperostosis (Forrester's disease) were noted. One was the skeleton of Bishop Giso, the last Saxon bishop of Wells Cathedral (fig 3). One example of an erosive sacroiliitis was seen; the changes were asymmetrical and associated with fluffy periosteal changes in the pelvis, suggesting the possibility of Reiter's disease or psoriasis rather than ankylosing spondylitis.⁹

Peripheral erosive arthropathies—Three examples were found. The first was seen in the metatarsophalangeal joint of a Saxon man from Trowbridge (fig 4); the erosions are typical of gout.¹⁰ The other two cases were possible cases of rheumatoid arthritis and therefore of particular interest. One came from a thirteenth-century man who was buried with the knees flexed (not a burial custom at that time). There was widespread arthritis, with ankylosis of some interphalangeal joints, and erosive "cup and pencil" deformities affecting distal as well as proximal joints, indicative of psoriatic arthropathy¹¹ (fig 5). The other cases showed erosive changes in the metacarpal phalangeal joints and some lesions in the knees, hips, and shoulders. The radiological erosions and geodes suggest rheumatoid arthritis¹¹ (fig 6).

Discussion

Many skeletal surveys have been hampered by poor material, a lack of adequate description or radiological analysis, and, particularly, by a lack of discrimination between the different rheumatological diseases. We were helped by having a paleopathologist on site, the use of radiological facilities and interpretation, and a rheumatological opinion.

Many skeletons were incomplete or damaged; nevertheless, a large number of observations of arthritic disease were possible.

The age range of 20-50 years, with a probable mean of about 40, would be unlikely to yield many changes (other than in the spine) of English people today.¹² We cannot know how representative these skeletons are, although they were from typically lay cemeteries, and had an equal sex incidence.

Osteoarthritis and exuberant osteophytosis were both common. Although osteoarthritis occurs in all species, ages, and races,³ the pattern and severity of the changes were unexpected. The relatively small Saxon sample had a particularly high incidence of shoulder disease, a joint rarely found to be affected by osteoarthritis in current series.¹²⁻¹³ The occupation of these people is unknown, and may be relevant, although the frequency of this proximal pattern of osteoarthritis in relatively young people suggests that a different subset of osteoarthritis, or even a different disease, might have been affecting these people. The exuberant osteophytes may be linked with the tendency to get vertebral hyperostosis, as both may be part of an inherited tendency to form excess bone.¹⁴

The low incidence of erosive arthropathies may not be unexpected in a group of young adults; and until more skeletons can be examined it is hard to say whether the incidence was appreciably below that seen now. The case of gout was similar to those described in various other skeletons.¹⁵ The radiological changes in the second case seem classical for psoriatic arthropathy,¹¹ although this is, to our knowledge, the first reported case on paleopathological evidence. A "seronegative" erosive arthropathy of psoriatic type cannot be ruled out in the third case either, although rheumatoid arthritis seems more likely. Some authors have been struck by the relative paucity of reports of rheumatoid arthritis in paleopathological publications,⁴⁻⁵ although others have pointed to a few isolated possible cases and have noted the difficulty in obtaining a good examination of the small joints of the hands and feet.¹⁶⁻¹⁸ Our findings argue against the case for rheumatoid arthritis being a recent disease arising from a new virus.⁵⁻¹⁶

Although we hope to gain more complete data from a further 1500 skeletons awaiting examination, comparisons with recent epidemiological or radiological surveys cannot yet be made. Our survey suggests that arthritis was as big a problem to our ancestors as it is now. The pattern and types of rheumatic disease, however, and the disability they caused, were apparently quite different. An exuberant form of large joint osteoarthritis

was common, and rheumatoid arthritis and similar diseases rare in our relatively recent past.

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ONE HUNDRED YEARS AGO A correspondent writes from Quetta, under date April 26th:—Deputy Surgeon-General Bruce returns to India to take up duty in Bombay. During the last year, he has had some very trying service: first, in the Murree country; then with Major-General Phayre's division on the march by the Bolan and Rojak Passes to Kandahar; and, afterwards, as principal medical officer there, having administrative charge of the largest force ever in one command during the Afghan campaign. Latterly, he has been stationed at Quetta, as principal medical officer of the line of communication, and is at present on a long and arduous tour of inspection to Thull Chotiali, again down the Hurnai route and Murree country, from which he proceeds to India.

Dr Simpson, Deputy Surgeon-General, from Kandahar, will arrive at Quetta with General Hume's head-quarters about the 4th or 5th of May. In the meantime, the duties of principal medical officer of the line of communication are carried on by Surgeon-Major Wilson, AMD, the senior medical officer at Quetta.

The Pisheen moveable column, with a section of No 3 field hospital, in charge of Surgeon-Major Gillespie, AMD, returned last week from the Hurnai Valley to Quetta, and was broken up to form part of the permanent garrison of that place.

At the railway terminus at Pirchowki, Surgeon-Major O'Farrell, AMD, in charge of No 3 field hospital, is preparing for the arrival and transit of troops. The heat there is already becoming uncomfortable—about 105° Fahr, in double tents, during the day. The nights, however, are still cool.

For so far, the evacuation of Kandahar and march down have been unmarked by any untoward event. The weather is favourable at last;

and, it is only when the lower Bolan is reached, that fever and insolation are to be feared. The railway journey, too, across Sind and the Punjab, will be very trying. Most of the men are by this time well seasoned; and, the weakly having been already eliminated by disease, any unusual amount of disease is not anticipated. The medical arrangements are as complete as circumstances will permit; and, if too free indulgence in alcoholic liquors can be prevented, it is expected that, from a medical point of view, our "scuttle from the country" will be a success.

The same correspondent writes from Quetta, under date May 4th:—Deputy Surgeon-General Simpson arrived at Quetta, with General Hume's head-quarters, on May 4th, having marched round by Khushdil Khan, through the upper part of the Pisheen Valley. Quetta will henceforth be the centre of the command, and the residence of the Governor-General's agent in Baluchistan. Everything seems peaceful in the extreme; but, to be ready for any contingency, the South Afghan force will, in medical, as well as other arrangements, remain equipped on the field scale. A permanent and effective hospital corps is one of the first requirements, and the want of it has been much felt in all the hospitals. Reports have been called for from medical officers who have had experience during the late war; and, if only acted on, many deficiencies will be supplied and defects remedied, in hospital and ambulance services, before we take the field again. Even in peace, it is to be hoped, the time of untrained ward-coolies has expired; and that trained men, under experienced European ward-masters, will be found to attend on the sick of British regiments. (*British Medical Journal*, 1881.)