

## NOW AND THEN

## Chronic arthritis before 1876: early British cases suggesting rheumatoid arthritis

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Is rheumatoid arthritis (RA) a recent disease or do its roots lie in antiquity? There are several reasons to believe that RA may be a modern disease first seen in the mid-nineteenth century which could have followed the social changes of the industrial revolution.<sup>1</sup> But is this actually the case? Although the term 'rheumatoid arthritis' was only proposed by Garrod in 1876,<sup>2</sup> much evidence indicates that RA existed before 1800. Rothschild *et al*<sup>3</sup> found features of an erosive arthropathy in six prehistoric skeletons, though 3000 subterranean years could cause some bone changes. The illness of Constantine IX, described by Psellus (1063)<sup>4</sup> had features of a chronic inflammatory illness such as RA.<sup>4</sup> The disease of Desiderus Erasmus (1466–1536), reported by Appelbroom and others,<sup>5</sup> had similar features. Siebrandus Sisilius, a 17th century Dutch priest, had evidence of rheumatoid arthritis of the robust type shown in a portrait described by Dequeker.<sup>6</sup> The description of RA by Landré-Beauvais<sup>7</sup> in 1800 is generally accepted as the modern disease but was this the first report? To evaluate if RA existed before the mid-1800s we reviewed medical writing before 1850 and examined diagnostic registers and case histories from archives at London hospitals after 1700.

### Methods

Primary sources of medical writing before 1850 were from the Royal College of Physicians library, the Royal Society of Medicine library, the Wellcome library, and the Heberden library of the British Society For Rheumatology (held in the Royal College of Physicians). Secondary sources used were *A Hospital of the Nation* by Rolls,<sup>8</sup> *A Short History Of Gout And The Rheumatic Diseases* by Copeman,<sup>9</sup> *The Antiquity of Rheumatoid Arthritis* by Short<sup>10</sup> and a historical approach to the nomenclature of RA proposed in 1963 by Parish.<sup>1</sup>

We reviewed diagnostic indices and individual case histories documented in the archives of five London teaching hospitals: The Royal London, St Bartholomew's, The Westminster, Guy's and University College hospitals. The earliest hospital records in London are at the Westminster Hospital. These consist of an admission book which runs from 1720–1723 and then discontinues. The register at The London Hospital ran from 1760 to 1805. Both record only diagnoses. Detailed clinical notes are available at Guy's hospital

from 1824, St Bartholomew's hospital from 1826, and University College hospital from 1836. We also looked at infirmary records. The earliest of the infirmary/workhouse records with realistic diagnoses were located at Highgate Infirmary but these did not start until 1889 and contained only diagnosis and outcome.

### Results

#### CONTEMPORARY MEDICAL WRITING

Sydenham (1624–89)<sup>11</sup> gave a recognisable description of acute rheumatism and chronic arthritis. He described the joints of the fingers "being contracted with knotted protruberences". The Physical Dictionary of 1708, described Rheumatism as "a wandering pain often accompanied with a small fever, swelling and inflammation".<sup>12</sup> The new medicinal dictionary of 1730<sup>13</sup> claimed that in rheumatism "the joints are reddened, stiff and gritty as in the gout". During the 18th and 19th centuries there were many descriptions of arthritis reminiscent of RA.<sup>12–31</sup> Brief examples of individual cases described before 1800 are given in table 1. Two further cases from Bath hospital records (1755) were described by Rolls.<sup>8</sup>

An important issue is terminology. This followed no rules of nomenclature. "Rheumatism" was an imprecise term for many aches and pains. "Scorbutic rheumatism" was sometimes used in the 18th century for chronic polyarthritis.<sup>16</sup> "Gout" was used with little discrimination for almost any condition of the joints. Sometimes hybrid terms like "rheumatic gout", and "scorbutic gout" were employed. Thomas Dawson,<sup>24</sup> when discussing a patient, said that "some would call it gout, some rheumatism, and some rheumatic gout". In the 19th century the position became clearer (table 2). Sir Alfred Garrod<sup>2</sup> in his 1859 treatise and in his book of 1876 highlighted the previous use of unsatisfactory terminology. He did not approve of Heberden's "chronic rheumatism"<sup>27</sup> or Fuller's "rheumatic gout".<sup>32</sup> He chose the term rheumatoid arthritis, dividing the disease into acute, chronic and irregular of generalised and localised types.

The frequency of rheumatic fever caused difficulty in distinguishing it from RA. The descriptions of apparent RA outline more acute disease than usually seen today. Cullen,<sup>21</sup> De Sauvages,<sup>19</sup> Scudamore<sup>30</sup> and Falconer<sup>26</sup> regarded chronic arthritis as the late stage of an

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Table 1 Descriptions of individual cases with possible RA before 1800

Author	Dates of publication	Description	Comments
Robert Pierce <sup>14</sup>	1697	Individual case 'Young woman Martha Creswold'	... soon after scarlet fever had her first rheumatism which left her with great stiffness of joints ... further attacks got better ... but later very severe fits of gout by which her fingers and toes have been contracted with nodes.
Sir John Floyer <sup>15</sup>	1732	Individual case 'Mrs Piser of Repton'	... was very much swelled in all her joints by a rheumatism which lasted 4 years. Fingers were contracted so close she could not move them ... she responded to treatment but her left knee remained flexed.
Robert James <sup>18</sup>	1745	Individual case 'Richard Weltherston'	... gout or rheumatism as some call it which 5 or 6 years had to great measure deprived him of the use of his limbs. His left hand was distorted and useless.
Rice Charleton <sup>23</sup>	1774	Individual case 'Mary Scriggins'	... who for 12 months had pain in the left hip which attacked several other joints. Joints all stiff, could not be moved without pain, which after several months treatment improved.
John Wesley <sup>22</sup>	1759	Individual case 'A man from Stockholm'	... knees and joints of his toes had been rendered stiff and his fingers crooked by a mixture of gout and rheumatism.

Table 2 Descriptions of RA between 1800 and 1876

Author	Dates of publication	Description	Comments
William Heberden <sup>27</sup>	1816	General	chronic rheumatism ... a different disease from acute rheumatism and gout ... little or no fever ... great swelling ... can lead to extreme weakness ... frequent inflammation and contracture of muscles ... may take away function in 6 years or in the first year.
Augustin Landré-Beauvais <sup>7</sup>	1800	Five cases	Marguerite Farnier of asthenic constitution in which several joints were involved; less severe than gout but more persistent. 2 post mortems of other cases showed articular cartilage replaced by granulation tissue.
John Haygarth <sup>28</sup>	1813	General	Nodosity of joints ... a condition described as rheumatic gout which occurred in middle aged women ... started in the fingers and spread to other joints ( <b>NB</b> it is likely that some of his cases were examples of osteoarthritis).
James Parkinson <sup>29</sup>	1805	General	... starts in the last joints of fingers, spreads to other joints of the fingers and large, may be swelling and redness, movement much diminished. Tenderness which is the first of the morning will hardly allow the foot to rest on the ground, which diminishes after the pressure has been repeated during walking for about an hour.
Samuel Bardsley <sup>31</sup>	1807	Individual case	... a man aged 60 crippled since the age of 30 ... the joints strangely distorted ... with a number of red nodes which may vary in size and hardness.
Joseph Spry <sup>32</sup>	1822	Individual case Mrs L	... woman with nodosity of joints, fingers, knees, elbows, very much contracted ... attacks of rheumatic gout ... lived many years a deplorable object.
Sir Ben Brodie <sup>33</sup>	1836	General	Chronic rheumatism starting in fingers, extending to knees and most joints ... slowly progressive but may remain stationary ... usually incurable.
W Balfour <sup>34</sup>	1814	Individual case Simon Stewart	... 3 years rheumatism in its most cruel form ... many joints involved ... little improvements after treatment.
H W Fuller <sup>35</sup>	1852	General	The diagnosis of rheumatic gout ... different from acute rheumatism and gout ... it affects the small joints ... woman as frequently as men ... may persist for months producing permanent changes ... joints of the hand might project a 'nososity'.
Robert Adams <sup>37</sup>	1846	Individual case Pat Donohoe	Nodosity of the joints (followed for 10 years with pathology and illustrations).
Jean Charcot <sup>38</sup>	1881	General	Chronic articular rheumatism ... one of the commonest in France ... the same disease as rheumatic gout of Fuller and rheumatoid arthritis of Garrod (illustrations of hands of cases).
Armand Trousseau <sup>39</sup> 1801–1867	1861	General	The same disease as that described by Sydenham ... not usually seen in acute hospitals but usually in asylums for incurables.
Sir Alfred Garrod <sup>2</sup> 1819–1907	1876	General	... the pathology is different from acute rheumatism and gout ...

acute illness. It is possible some early cases were examples of Jaccoud's syndrome<sup>36</sup> which may follow rheumatic fever. However, it seems a less progressive and disabling disease than RA and is rare.

### Contemporary medical records

#### TEACHING HOSPITALS

At the Westminster Hospital, the records gave name, parish, diagnosis, date seen in

outpatients, and dates of admission and disposal. Rheumatism was a common diagnosis. Forty eight of 540 patients recorded (between 1720–23) had a diagnosis of rheumatism. Most had a single diagnosis of 'rheumatism' or similar entity with slight variation in spelling. Other entries included 'rheumatism with fever', 'rheumatism of long standing', 'rheumatism of the loins', 'rheumatism with St Anthony's fire', 'nervous rheumatism', 'rheumatic fever', and 'evil in his joints and

scurvy'. Many were recorded as cured and were discharged.

The London Hospital had an admission register from 1760 to 1805. It was then discontinued until 1881. The early records give the name, occupation, sponsor, diagnosis and outcome. From January to March 1760, 27 patients had a diagnosis of rheumatism out of 244 patients admitted. The first recorded diagnosis of RA was made in 1894. In 1895 RA was given a separate heading; six males and six females with RA admitted that year.

Guy's Hospital clinical records begin in 1824 and give a more detailed evaluation. These probably reflect admissions on one or two wards. We studied them from 1824 to 1831 and identified 38 cases of rheumatism (table 3). A typical case was that of Susan Simpson, aged 22, who was given a diagnosis of "rheumatismus" in 1830. For one week she had rheumatism of the right knee followed by pain, heat and swelling of the first two joints of the right thumb and wrist which were tender. The pain started in her loins but then wandered about affecting nearly all her joints. She had a sore throat and her fauces were red. She was treated with colchicine and made a recovery in one week. A chronic arthritis was illustrated in the case of James Mahoney, a 20 year old Irish labourer, who had been affected by attacks of rheumatism for five weeks and was admitted on 16 January 1828. His wrist and knuckles were red and swollen. By early February the left tarsus was red and swollen and he had pain in the right knee and feet. He made little improvement and was discharged from hospital with a "chronic rheumatism". A further example is that of Elizabeth Edgling, admitted on the 24 November 1824 with pains in the leg, knees and loins, which started during pregnancy. She refused to change wards on 27 December and was discharged home to become bed-ridden from contracture of the knees.

Records at St Bartholomew's Hospital were studied between 1826–30 (table 3). There were 98 diagnoses of rheumatism (35 males and 63 females). This larger number may represent the rheumatological interest of the physician in charge (Dr P Latham). Diagnoses included acute rheumatitis and rheumatic fever, rheumatism with pericarditis, chronic rheumatism with nodosity, paraplegic rheumatism, psoriasis and rheumatism, subacute rheumatism and syphilitic rheumatism. The commonest syndrome reported was that of a young female with an acute attack of polyarthritis being discharged cured in a week or two. The case of Elizabeth Keys, aged 16, illustrates this. She was diagnosed as having

Table 4 Cases of rheumatic disease in Highgate Infirmary in 1889

Diagnosis	Number of cases
Rheumatism	33
Acute rheumatism	4
Rheumatic gout	14
Synovitis	2
Gonococcal rheumatism	1
Rheumatic fever	1
Gout	6
Lumbago	2
Sciatica	1
Pain in limbs	1

"acute rheumatism" on 13 January 1831 "with pain and swelling in all joints", which resolved by 19 February. "Chronic rheumatism" was diagnosed in 22 patients, but this did not always mean a chronic arthritis. Often it only indicated non-specific aches and pains. The case of Margaret Shephard illustrates a probable chronic arthritis and interestingly followed the delivery of a child six weeks previously. She was diagnosed with chronic rheumatism with nodosity. She had "pain in all her joints with enlargements". Her wrists and fingers particularly were affected, and she was no better after a month's treatment.

At University College Hospital we examined the records between 1835–37 (table 3); there were 35 cases of "rheumatism" (10 males and 25 females). Cases included rheumatism phlogistica, rheumatism frigidis, hysteria and gonococcal rheumatism. The pattern appeared similar to Guy's and St Bartholomew's. Many patients suffered from brief attacks of polyarthritis and were discharged after a short stay in hospital. Harriet Nicholson, a servant aged 22 years, who had "rheumatic fever" nine months previously and presented with pain in many joints with swelling of the right wrist in October 1835 was pronounced cured in November. At University College Hospital at this time the diagnosis of chronic rheumatism appears well established and indicated a chronic arthritis as in the case of Ann Ward, a schoolmistress with "enlarged knuckles" and shoulder, elbows and wrists involvement. She remained in hospital for six months until March 1839.

#### INFIRMARIES

The Highgate Infirmary holds the oldest register which starts in October 1889. It gives the name, age, diagnosis and date of discharge or transfer. From October to the end of 1889 there were 435 admissions; 65 had a rheumatic disorder (table 4). Two patients admitted with rheumatism, after treatment, were considered "fit for the house" (that is, the workhouse). One 53 year old patient, Sarah Allard, had rheumatic gout. She was admitted at this time for treatment but was discharged as incurable after only one week.

#### Discussion

Several sources of historical data can help decide the antiquity of RA. These include investigations of skeletons, art, non-medical

Table 3 Diagnoses at three London teaching hospitals

Hospital	Guy's	Barts	UCH
Dates	1823–1831	1826–1830	1836–1837
Total number of rheumatic cases	38	98	35
Acute/subacute rheumatism	3	19	8
Rheumatism	25	36	12
Rheumatism with heart involvement	7	11	4
Chronic rheumatism	1	22	4
Gonococcal Rheumatism	2	10	5

and medical literature. We have restricted our study to medical literature available in the UK and cases from London hospitals. Our results suggest chronic inflammatory polyarthritis was described by many physicians in the eighteenth and nineteenth centuries. A proportion of these patients had a similar disease to RA. Cases described in the 18th century show clinical features compatible with RA such as distortion of the fingers and the presence of nodules.

Ambiguous and variable terminology is a confusing factor before 1800 and the terms rheumatism, rheumatgia, rheumatitis, rheumatismus were used indiscriminantly. During the nineteenth century there were even more descriptions of chronic polyarthritis but later in the century these became more recognisable as rheumatoid arthritis. Charcot<sup>38</sup> thought it a disease "of modern times" and it appeared to be common in France. Trousseau<sup>39</sup> considered this disease the same as that described by Sydenham, not usually seen in acute hospitals but rather in asylums for the incurable.

The infrequent cases of chronic arthritis in London teaching hospitals before 1850 can be attributed to the arrangements of London medical services in the 1700s and 1800s. There was reluctance to admit chronic cases to the voluntary hospitals. An additional limitation was the requirement of sponsorship from a member of the governing body to gain admission to a voluntary hospital. This prejudiced admission in favour of young people with the expectation of a short illness. If an illness became chronic or lasted any length of time the patient was transferred elsewhere—either home or to an infirmary associated with a workhouse, where extensive records were not kept.

Our evidence suggests that RA is not a modern disease and can be traced back to Sydenham in the 1600s. Its severity may have varied over the last three centuries, with more cases being seen at the end of the 1800s. This is not against an infective origin for RA, an issue reviewed by Silman.<sup>40</sup> Although cases of RA have always shown considerable heterogeneity, its character may have altered with time in a similar manner to rheumatic fever.

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