History of Medicine

THE SWEATING SICKNESS IN ENGLAND*

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SUMMARY

An acute infectious fever, called the sweating sickness, broke out in England in five major epidemics in the years 1485, 1508, 1517, 1528 and 1551. Only one epidemic, that of 1528, spread also on the continent of Europe. The disease was characterized by headache, pain in the chest, and profuse sweating, and frequently proved fatal within 24 hours. It can be distinguished from plague, malaria, and typhus, all of which were prevalent in the 16th century, and was probably not influenza but another virus infection which has not reappeared in England since 1551.

One of the unsolved mysteries of medical history is the nature of the sweating sickness, an acute and often fatal illness, which swept across England in five great epidemics in the 15th and 16th centuries. It was also referred to as 'the sweat' or 'the English sweat'. With one major and one minor exception the epidemics were limited to England and Wales but the mortality in affected areas was almost as high as in the worst outbreaks of plague.

The Epidemic of 1485

The best-known description of the first epidemic of sweating sickness, in 1485, is by John Caius, who was born 25 years after the event but was an eye-witness of the last epidemic in 1551:

'In the year of our Lord God, 1485, shortly after the 7th day of August, at which time King Henry VII arrived at Milford in Wales out of France, and in the first year of his reign, there chanced a disease among the people, lasting the rest of that month and all September which, for its sudden sharpness and unwonted cruelty, surpassed the pestilence. For this commonly gives 3 or 4, often 5, sometimes 9, sometimes 11, and sometimes 14 days respite to whom it vexes. But that (the sweat) immediately killed some in opening their windows, some in playing with children in their street doors, some in one hour, many in two it destroyed and, at the longest, to them that merrily dined it gave a sorrowful supper. As it found them so it took them, some asleep some awake, some in mirth, some in care, some fasting and some full, some busy and some idle, and in one house sometimes three sometimes five, sometimes seven sometimes eight, sometimes more sometimes all, of which, if the half in every town escaped, it was thought great favour."[1] †

An earlier report is found in Hall's chronicle:

'In this same year a new kind of sickness came suddenly through the whole region even after the first entering of the king into this isle, which was so sore, so painful and sharp that the like was never heard of to any man's remembrance before that time. For suddenly a deadly and burning sweat invaded their bodies and vexed their blood with a most ardent heat . . . so that, of all of them that sickened, there was not one among a hundred that escaped."[2]

Holinshed, who closely follows Hall's description of the outbreak, states that the epidemic began on about 21 September and lasted until the end of October,[3] but Webb maintains that it reached Oxford at the end of August, killing many students and causing many others to flee, and reached London only a few days later.[4]

It is widely assumed that the disease was brought into the country by the mercenary troops which the Earl of Richmond (later Henry VII) brought with him from France to the battle of Bosworth Field (22 August 1485), but there is no account of any such epidemic at the time on the continent of Europe. There is no doubt however that the sweating sickness broke out in London within 3 weeks of the entry of the Earl of Richmond's army into the city. The processions and pageants organized to welcome the new monarch were interrupted by the epidemic, which killed the Lord Mayor, his successor, and six aldermen within a week.[2] But it ceased as suddenly as it began and, on 30 October, Henry was crowned 'with a magnificence which had probably never at this time been equalled at the coronation of any English monarch'.[5]

Polydore Vergil, court historian to Henry VII, described the sudden onset and unprecedented severity of the epidemic and also the main clinical features and the recommended treatment:

'A sudden deadly sweating attacked the body and, at the same time, head and stomach were in pain from the violence of the fever. When seized by the disease some were unable to bear the heat and (if in bed) removed the bedclothes or (if clothed) undressed themselves; others slaked their thirst with cold drinks, yet others endured the heat and the stench (for the perspiration stank foully) and, by adding more bedclothes, provoked more sweating. But all alike died, either as soon as the fever began or not long after so that, of all of the persons infected, scarcely one in a hundred escaped death."[6]

'Anyone who is attacked by the sweating by day should retire to bed, dressed just as he is; if the perspiration begins at night, while he lies in bed, he should lie quietly and not move from it for exactly twenty-four hours. Meanwhile he should add more bedclothes, not thereby to provoke the fever, but so that he should perspire gently and naturally. He should take nothing to eat if he can suffer hunger for so long, but may drink enough of his usual drink, warmed, to quench his thirst. In this treatment care should chiefly be taken not to allow even an arm to be exposed for coolness outside the bedclothes, for this is fatal."[7]

Thomas Forrestier, a French physician who was resident in London at the time, gives a similar description of an attack of the sweating sickness and speculates on its origin. The far causes of the disease, he concludes, are astrological.

'The nigh causes be the stinking of the earth as it is in

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†This and other early reports of the sweating sickness are here rendered in modern English spelling and punctuation.

many places, as in deep caves and stinking nigh to silver mines, and venoms, or nigh to dead beasts, or nigh to dragons or serpents, or nigh to stinking waters, for these be great causes of putrefaction, and these corrupt the air and so our bodies are infected by that corrupt air."[8]

Forrestier prescribed a simple diet, purgation, blood-letting, pills, syrups, and an electuary with 46 ingredients. He ascribed much of the mortality to unskilled leeches who 'do not know the causes, complexions, ages, regions, times of the year, climate, natures, or how much of the medicine to prescribe'.

The sweating sickness was no respecter of rank. Unlike the plague, which was typically a disease of the poor, it affected the highest classes of society and appeared to single out young, previously healthy men. From London the epidemic spread to other towns in England but not to Scotland, Ireland, or the continent of Europe.

The Epidemic of 1508

The date of the second epidemic of sweating sickness has been disputed, but the balance of evidence favours 1508.[9] Many members of the royal household were affected; the Lord Treasurer died and the Lord Privy Seal and the Lord Chamberlain contracted the disease but recovered. The court moved from London and a strict edict was issued that nobody from London was to come near the court and that nobody from the court was to visit the city.[10]

This epidemic was confined to England and had a much lower mortality than its predecessor.[11] According to some this was due to the efficacy of the treatment (complete rest and moderate warmth), which had been developed during the first epidemic. 'But since the cure which had been discovered was well known to all it only proved fatal to those who neglected to avail themselves of it."[12]

The Epidemic of 1517

The third epidemic, in 1517, is the most fully documented in state papers, letters of envoys, and private correspondence. It is reported by the Papal *nuncio* and the French and Venetian ambassadors and referred to in letters written by Erasmus, Sir Thomas More, and others.[13] On this occasion it was so violent and rapid in its course that it carried off those who were attacked in from 2 to 3 hours and the first shivering fit was regarded as the prelude to death.[14]

The epidemic was not so widespread in England as were previous outbreaks but the regions affected were hard hit. Oxford and Cambridge suffered devastating attacks; in Oxford more than 400 students died of the disease. Cardinal du Bellay, the French ambassador, estimated that 10 000 persons died of the disease in London in 10 or 12 days.[4] The Venetian ambassador who survived an attack, reported that Cardinal Wolsey had survived three attacks of the disease but many of his household had died of it.[15] There were several deaths in the royal household and the king (Henry VIII) moved his court from place to place to avoid infection.

The third epidemic of sweating sickness was limited to England and to Calais, at that time an English possession, where it is said to have attacked particularly the English inhabitants.[4] As the year progressed England suffered epidemics of other diseases, notably plague, measles, and diphtheria.[16]

The Epidemic of 1528

A succinct description of the sweating sickness, as it was manifested in the fourth epidemic, is found in a letter written from London by the French ambassador, Du Bellay, who himself survived an attack of the disease:

'This disease, which broke out here four days ago, is the easiest in the world to die of. You have a slight pain in the head and at the heart; all at once you begin to sweat. There is no need for a physician; for if you uncover yourself the least in the world, or cover yourself a little too much, you are then taken off without languishing, as those dreadful fevers make you do."[17]

There were about 40 000 cases of the disease in London in five weeks, with about 2 000 deaths. The epidemic coincided with Henry VIII's whirlwind courtship of Anne Boleyn. 'As soon as he heard of her infection, Henry cast gallantry to the winds and fled from her side, keeping on the move for several weeks, dosing himself with numerous medicaments, hearing three Masses and confessing daily, it was said, and communicating frequently. True he wrote lovingly to Anne lamenting his separation from her and comforting her with the information that the sweat seemed to spare women; but the effect was spoiled by a two-edged *envoi* which begged her not to come back too soon."[18]

Anne recovered from her attack and Henry, temporarily reunited with his queen, escaped infection. 'The king, for a space, removed almost every day till at the last he came to Tytynhangar, a place of the abbot of St Albans, and there he with a few determined to bide the chance that God would send him, which place was so purged daily with fires and other preservatives that neither he nor his queen nor none of their company was infected."[19]

This epidemic spread to Ireland, but not to Scotland, and lasted until the end of the year. In July 1529 the sweating sickness broke out in Hamburg, where it was attributed to infection from a British ship, 12 of whose passengers and crew were among the first victims of the disease.[20] From Hamburg it spread with heavy mortality through Germany, the Netherlands, Denmark, Sweden and Poland.[21]

The Epidemic of 1551

The fifth and last epidemic of sweating sickness in England was described by John Caius, court physician and for 9 years president of the College of Physicians. The outbreak started in Shrewsbury in April 1551, and spread through Wales and England, reaching London in July. As it passed off in the west and south it spread to the east and north, though not to Scotland, and the whole epidemic was over by the end of September. The Venetian ambassador reported that all business in London was suspended, the shops closed, and nothing attended to but the business of life.[22] He estimated that there were 5 000 deaths in the city in the first week of the epidemic but Stow, writing some 40 years later, says that only 800 died in the first week: 'It began in London on the 9th July and on the 12th of July it was most vehement, which was so terrible that the people living in best health were suddenly taken and dead in four and twenty hours, and twelve or less for lack of skill in guiding them in their sweat. And it is to be noted, that this mortality fell chiefly or rather on men, and those of the best age, as between 30 and 40 years. Few women, nor children, nor old men died thereof."[23]

Henry Machyn, a London undertaker, took a keen professional interest in the epidemic and confirmed the reports of other observers that the disease fell heavily on the wealthier class of the community, 'for there died in London many merchants and great rich men and women and young men . . . of the new sweat'.[24] When two members of the royal court died of the sweat, the King (Edward VI) took fright, like his father before him, and 'repaired to Hampton Court with only a small company'.[25] From there he issued an exhortation to his people to pray for deliverance.

Caius described the symptoms of the disease, as he encountered it in his practice, and attributed it, for the following reasons, to a fever 'with a fight, travail and labour of nature against the infection received in the spirits'.

'First by the pain in the back or shoulder, pain in the extreme parts as arm or leg, with a flushing of wind . . . Secondly, by the grief (pain) in the liver and the nigh stomach. Thirdly by the pain in the head and madness of the same. Fourthly by the passion of the heart (palpitation) Whereupon also followeth a marvellous heaviness (the fifth token of this disease) and a desire to sleep'.[1] He concludes: 'If nature be strong and able to thrust out the poison by sweat . . . the person escapes; if not, he dies'.

THE NATURE OF THE SWEATING SICKNESS

From contemporary reports we gather that the sweating sickness was an acute infectious fever with a high mortality. The differential diagnosis would be from plague, malaria, typhus, and influenza. Caius believed that fatal cases of the sweating sickness could be distinguished from plague because death from sweating sickness occurred within 24 hours, whereas death from plague occurred from the 3rd to the 14th day of the illness, but plague, at the height of an epidemic, was often fatal in less than 24 hours from the onset of symptoms. Nevertheless the signs and symptoms of plague were so well known in the 16th century that confusion between the two diseases is unlikely. It is unlikely too that the sweating sickness would be confused with the ague (malaria) or with gaol fever (typhus), both of which were common at the time.[26] The typically intermittent fever of malaria and the characteristic rash of typhus were recognized and it would be exceptional for either of these diseases to cause death within a week. Many historians conclude that the sweating sickness was influenza, an outbreak of which was described by Sydenham in 1686 as a 'new fever',[27] although it was probably known at the time of the Crusades.[28] The symptoms described by Sydenham were cough, headache, giddiness, and difficulty in breathing, often with pains in the limbs; there was fever but seldom much sweating. None of the writers on the sweating sickness stress respiratory symptoms.

An epidemic disease similar to, but milder than, the sweating sickness broke out in Northern France in 1718 and recurred at irregular intervals in subsequent years.[29] This 'Picardy sweat' was of longer duration than the sweating sickness, was often accompanied by a miliary rash, and was seldom fatal. In spite of these differences the Picardy sweat has been regarded as 'a less malignant form of the sweating sickness'[30] but the balance of evidence is against this.

According to Gale: 'On the whole the clinical evidence is against the identification of either the English sweat or the Picardy sweat with influenza'.[31] Guthrie concludes: 'It (the sweating sickness) was not influenza, nor was it a modified form of typhus. Had it occurred today it would probably have been classed as one of the virus infections.'[16]

Many features of the sweating sickness are still unexplained: its strange geographical localization, its recurrence after long periods during which no sporadic outbreaks were reported, its final disappearance, and its predilection for young men and for the upper classes of society, whereas most epidemic diseases were more prevalent among the poor. Unless the sweating sickness recurs in modern times it is unlikely that these problems will ever be solved.

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