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Mozart's Health and Final Illness

Wolfgang Amadeus Mozart was born in Salzburg and spent the last ten years of his life in Vienna. Vienna's impressive facades then hid stinking courtyards infested with vermin. Hygiene was not a strong point in the eighteenth century. Infectious disease was rife and life expectancy short, particularly in Vienna. Black's tables of mortality for the city show life expectancy for a man of 25 to have been a further 26 years (Black 34). Mozart might have been expected to live to the age of 50. What was the reason for his early death? Was he always in delicate health, did he develop a chronic debilitating disease, drink or overwork himself into an early grave, succumb to an epidemic fever, or was he poisoned, accidentally or deliberately?

Mozart's Health

Wolfgang and his sister Maria Anna (Nannerl) travelled widely in childhood. Their father, Leopold, was an indefatigable correspondent. Well aware of his son's actual fame and musical potential, he ensured that most of the family letters were preserved. They detail the rigors of eighteenth-century travel, the uncertainty of financial reward, and major and minor illnesses of all the family. The medical history that can be drawn up for Wolfgang from these letters is incomplete but helpful.

Many of Mozart's childhood illnesses were upper respiratory tract infections. When he was six, three weeks after a cold caught in Linz, he developed a fever with spots ". . . very red, slightly raised, and painful to the touch." They were "the size of a kreutzer" (2-3 cm.) and distributed

over his shins, elbows and buttocks (Anderson 9). Dr. Bernhard, Professor of Medicine at Vienna diagnosed "a kind of scarlet fever." The description fits erythema nodosum (Rothman 33). Common causes today are sarcoidosis, streptococcal infection, tuberculosis, drug reaction and inflammatory bowel disease. In Mozart's case the preceding cold may suggest streptococcal infection, but tuberculosis is another possibility which would have had implications for his future.

While he was still six, and again at ten, he had feverish illnesses during which his feet and knees were so painful that he could not walk. The later illness lasted about ten days and the earlier one was probably also short. Several authorities have suggested that these were mild recurrent rheumatic fever (Bär 88-118; Sakula 6; Davies 1983, 777; Davies 1984a, 438). The only Jones criteria satisfied are fever and arthralgia—both minor—and the evidence for recent streptococcal infection is weak. Further, untreated rheumatic fever typically lasts six weeks to six months and Mozart's illnesses were much shorter. A confident diagnosis, therefore, cannot be made.

At the age of eight Wolfgang had a severely inflamed throat and was "in danger of choking," with a high fever for four days (Anderson 39). Here is another candidate for streptococcal infection. In the November of his tenth year, Mozart suffered a life-threatening fever lasting four weeks, probably caught from Nannerl whose life had been despaired of. This was probably typhoid (Clein 41). When he was eleven Wolfgang caught smallpox, before Nannerl this time, and was mildly scarred. At 16 he had a mysterious illness, perhaps hepatitis, alluded to by Nannerl 47 years later. Referring to a portrait she says: "As he had just got up from a serious illness, the picture looks sickly and very yellow."

To summarize Mozart's childhood and teenage illnesses, there were many trivial upper respiratory tract infections, two major fevers of no lasting significance, and three illnesses which might bear on his later health: erythema nodosum, possible rheumatic fever and possible hepatitis.

In adulthood Mozart showed a capacity for sustained overwork that argues a robust constitution. Between 1780 and 1790 he completed almost 300 compositions, and it is estimated that the sheer labor of writing down the notes corresponded to an eight-hour day during this time. In addition,

he gave numerous performances and lessons. He often composed until two in the morning and rose again at four or five.

During these years only two illnesses are known. A recently rediscovered transcript by Mozart's wife, Constanze, of a letter she wrote to Leopold was acquired by the Mozarteum, Salzburg, in November 1990. In it Constanze describes an illness which occurred in 1783 when Mozart was 27. It consisted of "the most violent sore throat, pain in the head and chest," of unspecified duration. Then, when he was 28, he suffered an unpleasant but fortunately brief illness in which he had attacks of a "fearful colic" ending with violent vomiting at the same time of day for four days. Leopold referred to it as a "rheumatic inflammatory fever" (Anderson 883), but the symptoms are consistent with ureteric colic. This year, 1784, was relatively unproductive (18 compositions), but by 1785 Leopold proudly recounted a comment of Professor Hübner of Munich, "It is really astonishing to see what a number of compositions your son is publishing" (Anderson 893).

The Final Illness

We hear of no other illnesses of significance until July 1789, when, in one of his begging letters to Michael Puchberg, Mozart blamed "my unfortunate illness" for his financial difficulties. However, by August he was cheerfully engaged in the preparation of *Così fan tutte*. In April 1790 he referred to his "constant sadness"; in May, to rheumatic pains in his bandaged head, and again in May, to headache and toothache, all in letters requesting loans from Puchberg. More cheerful letters followed. Then, in August, again to Puchberg, he complained that he could not sleep all night for pain, and painted a pathetic picture of financial need and ill health (Anderson 930-41). During the period 1789-90 his musical productivity declined.

There was a resurgence of musical activity in 1791. Constanze spent some months taking the waters at Baden and he wrote cheerful, joking letters to her, interspersed with passages making it clear how much he missed her. In July Mozart undertook to write *La Clemenza di Tito* for the coronation of Leopold II in Prague, completing the opera in 18 days. But,

In Prague, Mozart fell ill and dosed himself ceaselessly, his colour was pale and his countenance sad, although his merry sense of humour often bubbled into jesting in the company of his friends. . . . On returning to Vienna he at once took up the Requiem and worked at it with much effort and keen interest, but his illness visibly increased its hold on him and made him dark and melancholy. (Niemetscheck 43)

The Requiem had been commissioned through the mysterious "dark stranger" (Anton Leitgeb), anonymously, for Count Walsegg. While working on it Mozart was subject to fainting fits (Rochlitz 149, 177). In late October he confided to Constanze his belief that he was being poisoned and that he was writing the Requiem for himself. He complained of "a great pain in his loins and a general languor spreading over him by degrees" (Medici 128). Constanze blamed overwork on the Requiem and took it from him. For a short time his health seemed to improve. He wrote and conducted the first performance of *Eine kleine Freymaurer Kantata*, then took up the Requiem again.

Mozart was bedridden from late November 1791. Initially there was "swelling of the hands and feet and a hindrance to his movements" (Nissen 572), such that he had to be drawn forward when he wanted to sit up. His body became so swollen that his sister-in-law, Sophie Haibel, made him a night shirt which could be put on from the front to save him the difficulty of moving. Later he developed vomiting and diarrhea, and complained of "the taste of death on my tongue" (Medici 215). Karl Thomas, Mozart's elder son, seven years old at the time, noted many years later that

a few days before my father died, his whole body became so swollen that the patient was unable to make the smallest movement, moreover there was a stench which reflected an internal disintegration and after death increased to such a degree that an autopsy was rendered impossible. (Landon 159)

In spite of his weakness, on the day of his death he took the alto part in the completed sections of the requiem and told his pupil Süßmayr how to finish it. Later that night he developed a high fever, a cold towel applied to his forehead provoked a "slight shudder," he lost consciousness and died at five to one on the morning of Monday, 5 Dec. 1791.

To summarize, the patient was a 35-year-old successful and productive composer in straitened circumstances who died after a fortnight's illness characterized by swollen hands and feet at its onset. He was feverish, developed generalized edema, weakness, vomiting and diarrhea. He was not dyspnoeic—he could sing—and his consciousness was unclouded until a few hours before death. Post-mortem decomposition was unusually rapid. For some two to three months before this illness he had been pale and subject to lapses of consciousness, and had complained of loin pain. For one to two years he had suffered intermittent headaches and probably depression. He had a past history of erythema nodosum, probable streptococcal infections, possible renal colic, maybe atypical rheumatic fever and perhaps hepatitis (Wheater 587).

Diagnosis

Possible diagnoses are infective, cardiovascular, renal, hepatic, malignant, iatrogenic, or homicidal.

Infections

The cause of death given on Mozart's death certificate was "heated miliary fever," a diagnosis not recognized today, nor in the *Natural History of Diseases* by Matthias von Sallaba, one of Mozart's two physicians.

Guldner von Lobes did not see Mozart during his last illness, but was consulted by Dr. Closset and Dr. Sallaba. He wrote an account 27 years later blaming epidemic rheumatic inflammatory fever complicated by a "deposit on the head" (Deutsch 523)—the meaning of which is not clear. Rheumatic inflammatory fever was a non-specific fever with joint pain. The evidence that Mozart died of an epidemic illness is not strong. Mozart's health was in decline for months if not years before his final fortnight, and this cannot be explained by epidemic disease.

Acute rheumatic fever, the modern label for some cases of rheumatic inflammatory fever, is commonest in childhood but primary and recurrent cases occur in adults. The abrupt onset with polyarthritis, high fever, headache and weakness is compatible with the illness of Mozart's last fortnight. Again, however, the Jones criteria are not fully met unless it is accepted with Bär that the "deposit on the head" was a rheumatic nodule.

Against this diagnosis is the chronicity of Mozart's illness and the fact that he was not breathless and could sing. This makes edema consequent upon cardiac failure from rheumatic carditis unlikely. Vomiting and diarrhea are not usual in rheumatic fever.

Bacterial endocarditis has a time course compatible with Mozart's declining health in the latter half of 1791 and can occur in the absence of rheumatic heart disease or congenital heart lesions. Its insidious onset with pallor, low grade fevers, headache and arthralgia fits well with Mozart's symptoms. But again, heart failure would be the cause of the edema. Finger-clubbing, had it developed, would also surely have been noted. Typhus, septicaemia and bacterial meningitis are all rendered unlikely by Mozart's lucidity almost until death.

Tuberculosis, first suggested by Nissen, Constanze's second husband, deserves serious consideration. The disease was common in Mozart's time. It is unlikely that Mozart had pulmonary tuberculosis because of the absence of cough, haemoptysis, or of constitutional symptoms before 1790. The renal tract is a common site of reactivation which can occur many years after primary infection. Mozart's erythema nodosum at the age of six could have marked his primary infection and 22 years later he had ureteric colic which could have been caused by renal tuberculosis. On this hypothesis, the development of chronic renal failure and uraemia explains his headaches, pallor, lassitude, depression, and lapses of consciousness in 1790; spread of the disease to the abdominal peritoneum caused ascites. Tuberculous arthritis, however, does not fit well with Mozart's swollen hands and feet as it is usually chronic, monoarticular and affects the larger joints. Tuberculous meningitis is more prolonged than Mozart's acute final illness and is incompatible with clear consciousness until death.

Professor J. A. Davis (pers. comm.) has suggested a metazoan infection, trichinosis. Mozart may have bought suspect meat or had it served to him during his journey to Prague. Initially a moderately severe infection causes abdominal pain and gastrointestinal symptoms, followed by an irregular persistent fever. Migration of larvae after the first week produces edema, particularly of the face and periorbital tissues, muscular tenderness and weakness. There may be an urticarial rash. The symptoms worsen during encystment from the third week onwards if infection is heavy, and death is from myocardial failure, respiratory muscle and

central nervous involvement. Fever, vomiting and diarrhea were present in Mozart's case, but in the wrong order. Mozart's hands and feet rather than his muscles were swollen, and pain is not mentioned. Trichinosis could explain 2-3 months of ill health, but not 1-2 years.

Cardiovascular Disease

Three weeks after Mozart's death, an obituary gave as the cause "a dropsy of the heart" (Deutsch 428). The good breath control displayed on his last day militates against this. Rheumatic heart disease is to be dismissed if, but only if, he never had rheumatic fever. He did not display mitral facies.

Renal Disease

Pallor, headache, blackouts, depression, preoccupation with death, abdominal pain, vomiting, diarrhea, and weight loss could all be attributed to hypertension and worsening uraemia during 1790-91, and Mozart's loin pain also draws attention to his kidneys. Chronic renal failure resulting in polyuria is perhaps indicated by his comment to Leopold in a letter of 1778 that "I take two tumblerfuls of water before I go to bed" (Anderson 584). Renal failure is widely accepted as underlying Mozart's symptoms. The cause of his renal failure remains a matter of debate. Renal tuberculosis has been considered above.

Poststreptococcal glomerulonephritis usually occurs 1-3 weeks after infection with a nephritogenic streptococcus, has its peak incidence in boys of seven years, and is characterized by haematuria, hypertension and edema. Spontaneous recovery from the acute symptoms is the rule in children, but up to 30% progress to chronic renal failure 10 or more years later. Mozart's illnesses at 6 and 7 years may have indicated streptococcal infection(s). Haematuria was not mentioned.

P. J. Davies has strongly argued in favor of Henoch Schönlein Syndrome (HSS) as the cause of Mozart's renal failure, with an attack in 1784 and recurrent episodes in 1790, a final streptococcal infection being contracted during the performance of the *Masonic Cantata* on 15 Nov. 1791 (Davies 1983, 779-89; Davies 1984a, 441; Davis 1984b, 561). HSS is rare in adults. The characteristic distribution of the petechial rash was never noted.

Polycystic kidneys are another relatively common cause of chronic renal failure, with the potential for sudden death from rupture of associated berry aneurysms. Because Mozart had an external ear malformation, it has been suggested that he also had polycystic kidneys (Rappoport 576). There is no known association between the trivial malformation illustrated in Nissen's biography of Mozart and polycystic kidneys, nor anything in Mozart's family history to support the diagnosis.

Hepatic Disease

Cirrhosis is a cause of massive ascites but the only factor favoring it is the questionable attack of hepatitis at age 16. It has been alleged that Mozart drank immoderately, but there is no positive evidence and it was denied by his relatives. His musical output right up to the end, combined with contemporary accounts, are against encephalopathy resulting from hepatic disease, or, indeed, alcoholism.

Malignancy

Neoplasm is another cause of massive ascites. A leukaemia would be consistent with increasing pallor, headache, fatigue, joint pain, swelling and oedema. If there were a rash, as suggested by the diagnosis of miliary fever, this could be the petechial rash of thrombocytopenia. Increased susceptibility to infection could account for the terminal "epidemic" fever, and overwhelming sepsis could produce the rapid decomposition of the body. Leukaemia is uncommon in 35-year-olds.

Iatrogenic Disease

Possible iatrogenic causes of Mozart's death overlap with renal causes. Venesection was a mainstay of eighteenth-century therapy and it has been calculated that in his last illness, contemporary local practice would have been to remove a total of 2-31 of blood. This is unlikely to have improved his condition.

Mercury was an eighteenth-century treatment for syphilis, and is a cause of nephrotic syndrome. Although there is no evidence that Mozart had the disease, it has been suggested that he poisoned himself in self-treatment of syphilis. Against this, chronic mercury poisoning causes a

tremor, and Mozart's signatures and entries in his thematic catalogue are firm and flowing even in late 1791.

TABLE 1

Mozart's Last Illness	Miliary Fever	Antimony Poisoning
Loin Pain		
Headache		Headache
Depression	Depression, anxiety	Depression
Pallor		Anaemia
Enervation		
Fainting		Fainting
Fever	Fever	
Weakness	Weakness	Weakness
Swollen hands and feet	Cellular and	Joint and muscle pain
Swollen body	abdominal dropsy	Facial edema
Vomiting		Abdominal pain
Diarrhea		
Taste of death	Ill-smelling sweats	
	Miliary rash	Rashes
	Remissions and exacerbations	
		Dyspnoea
		Pneumonia

Dr. I. James (unpubl.) has recently made a case for antimony poisoning as the cause of Mozart's death. He examined the local pharmacopoea, *Dispensatorium Pharmaceuticum Austriaco-Viennese*, for 1770 and considered that the likely medication for Mozart's symptoms of melancholia would have been antimonials or mercurials. Antimony was also used against acute miliary fever. We know that Mozart "dosed himself ceaselessly" in Prague, and that his debts at death included a total of 214fl 23kr to apothecaries. We do not know what he dosed himself with, nor how much of the apothecaries' bill was for Constanze's medicines. But the symptoms of antimony poisoning overlap with those of Mozart's last illness. They are also remarkably coincident with those

of miliary fever. (See Table 1.) James argues that miliary fever itself may be an artefact of the treatment of any fever with antimonials. The toxicity of antimony was, however well recognized in Strasburg, where medical graduates were required to forswear its use, so one might expect the physicians of Vienna to be cautious with it. The presence of a preparation in a pharmacopoea does not guarantee its use. Even in small amounts, however, antimony would have had more than usually devastating effects on already compromised kidneys. Mozart's doctors may have hastened rather than postponed his end.

Homicide

The most contentious and sensational possibility is that of homicide. Mozart himself thought he was being poisoned by Aqua Toffana, a slow poison containing arsenic and lead oxide. Rumors of poisoning were documented within a month of his death (Deutsch 432). Antonio Salieri, a popular composer of the time, confessed to the deed when he was 73, demented and shut up in the madhouse after an attempt to cut his own throat. The matter was repeatedly referred to in Beethoven's conversation books and in periodicals of the time (Deutsch 522, 524, 527). It is clear that Mozart's widow, Constanze, disbelieved it, in spite of the rivalry and infighting which had occurred over the production of the two composers' operas. Otherwise she would not have allowed Salieri to oversee her son's musical education. Mozart's symptoms are not consistent with lead or arsenic poisoning, but there is no reason to suppose that he, as victim, would have identified any poison correctly. If it is accepted that antimony could have caused some or all of the symptoms of the last illness, then it could have been administered with murderous intent. There is no evidence that it was.

Conclusion

The available information is inadequate for a firm diagnosis. In weighing up the probabilities one has to assume a more or less typical presentation of disease. Common conditions should be preferred to rarer ones unless there is strong evidence in favor of a rare diagnosis. I suggest that renal disease is the strongest probability, with renal tuberculosis and poststreptococcal glomerulonephritis vying for first place in the differen-

tial. Lower down come rheumatic fever, bacterial endocarditis, Henoch Schönlein syndrome, and leukaemia.

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