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Mozart and Renal Disease in the Eighteenth Century—The Role of the Kidney in Adaptation to Genius

We, as physical beings, are sixty percent water, that scientists say is a vestige of the primordial seas where life began. Every thought, word and deed, results from the action of trillions of cells, exquisitely developed and co-ordinated to fulfil the purposes of our lives, and the survival and advancement of our species. Our cells live and work in an internal "sea of life," a sea of water, complex salts and an infinite number of proteins. For our cells to function properly the physico-chemical composition of their watery world must be precisely maintained, and the waste products of protein metabolism excreted. These are two of the principal functions of our kidneys.

Homer Smith, one of the founders of modern kidney science, postulated in his brilliant monograph, *From Fish To Philosopher* (1961) that the evolution of the kidney, over millions of years, enabled the adaptation of species after species to new and more challenging environments, till man controlled most of his world, produced geniuses, such as Shakespeare, Newton and Mozart, ventured into space and looked into the hearts of the atom and the cell. Smith said that this took place because the kidneys ensured the constancy of the internal working environment of every cell, tissue and organ.

But we live in an imperfect world of struggle and danger, and our kidneys may be injured by many factors. The most common ones are: (1) diseases of the circulation and blood vessels—shock, heart failure, hypertension and diabetes; (2) immune injury by infectious agents, as in

nephritis FF. Streptococcal infections; and (3) poisons, now mostly drugs. When significantly injured, the kidneys may fail to maintain the proper amount and composition of body water and salts, and fail to excrete the products of protein metabolism, especially potassium and acid. Then, every cell becomes a "sick cell" and life and health are threatened. If the injury is severe and acute, most often from shock and poisons, death is swift without modern treatment. Far more often, the injury is slowly but silently progressive, and the body develops complex temporizing compensations, trading sickness for life. This latter picture is that of chronic renal failure, the end of all kidney diseases—tragically insidious, with loss of strength and energy, progressive anemia, loss of appetite, nausea and vomiting, itching, and, finally, serious heart, and brain disorders, ending in death unless dialysis or kidney transplantation are carried out.

What could Mozart's doctors have known about his possible diseases? Probably little! The following were known and on record—their distribution and awareness unknown. In 1270, Salicetti, the great Italian surgeon-priest at Bologna—the world's first university—noted the relationship between body swelling and shrunken kidneys. Three hundred years later in France, in 1578, Guillaume deBaillou set down a pretty good description of rheumatic fever. Then in 1641 in Germany, Sennaert clearly described scarlet fever for the first time. Soon after, in England in the 1660s, Sydenham, the greatest physician of his day, described accurately both scarlet fever and rheumatic fever. He was a master of clinical observation and a close personal friend of John Locke and Robert Boyle. Next, in 1679, Thomas Willis described the sweetness and great volume of urine in "the pissing evil" as diabetes was called. Rheumatic fever was again described, and perhaps named, by Morton in England in 1694. One year later in 1695, the first recorded testing of urine was done in Holland by Dekkers, who noted coagulability of urine in phthisics—that is patients suffering from progressive wasting diseases—sometimes, their urines clotted on exposure to heating and acetic acid, and he said it predicted a "brief life" thereafter. Eighty years later in 1775, Cotugno in Italy, again noted the heat coagulability of urine in a 28-year-old soldier, who appears to have had acute nephritis. Finally in 1776, Dobson in England, showed the actual presence of sugar in the urine of diabetics. Mozart was then 20 years of age.

Not until years after Mozart died did the two great English pioneers in the clinical study of kidney disease, John Blackall and Richard Bright, produce their findings, in 1813 and 1827 respectively.

It is impossible for us to test the hypotheses advanced regarding Mozart's illnesses and death, because we search in the dark. The records are the observations of lay people, physicians of varying abilities, modified by transmission from person to person, a process of questionable accuracy.

Let us try to make some reasonable clinical assumptions. He was a malnourished infant but a happy, active child, at age five showing unusual musical genius. His childhood illnesses were detailed by Wheater (586). We can only suspect that these years were the setting for post-streptococcal rheumatic fever and nephritis, the latter noted for its silent progression to chronic renal failure. Thereafter, he was very well until 1783—energetic, composing, teaching, performing at a hectic pace, and enjoying life and games. In 1783 his doctor said that he was "thin, pale and stooping," and in 1784 he suffered another attack of rheumatism and probable renal colic. From 1787 on, there is increasing mention of declining health, pallor, fatigue, severe headaches, numerous medicines, general malaise and depression. In 1789, his portrait was painted, by Joseph Lange, as "tired and sick with heavy eyes." These clinical features are compatible with progressive renal failure and secondary hypertension—no more, no less.

From June 1791 onwards there seems to have been a serious turn for the worse. We read of exhaustion, pallor, much medication, severe headaches, weight loss and emaciation, cerebral and emotional features, periodic vomiting, and a bad taste in his mouth. These are also important features of chronic renal failure, but not necessarily terminal. Osler has said that "even an advanced degree of contracted kidneys may be compatible with great mental and bodily activity" (879), and Mozart is said to have been mentally clear until a few hours before his death. His death certificate said "fever with rash," probably as accurate as any clinical information we have. Therefore, I believe that he died with chronic renal failure, but not from it. Since it is said that many Viennese died at the same time, I believe that he probably died from an epidemic infectious disease, seriously aggravated by horrible medications and blood letting.

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