Was Frédéric Chopin's illness actually cystic fibrosis?

ABSTRACT Since Chopin's death 140 years ago, no one has questioned seriously the chronic nature of his illness, in spite of the knowledge that many of the physicians who treated his illness considered tuberculosis an unlikely cause of his chronic respiratory disease, which was of at least 24 years' duration. Although 170 cm in height, Chopin weighed less than 45 kg throughout his life. He was noticeably emaciated and had a marked tendency to lose weight after respiratory infections and with dietary indiscretion. His exercise tolerance remained far below that of his peers throughout his lifetime. He was affected to a debilitating chronic cough which was often productive and was worse in the morning. This cough persisted from before 15 years of age until death of his polynuromal disease at 39 years of age. Chopin suffered multiple acute, severe respiratory infections of both the upper and lower respiratory tracts which worsened in winter. He had haemoptysis for 18 years. In later life he grew markedly barrel-chested. He may also have been infertile. Chopin's autopsy revealed gross cardiomegaly and changes in his lungs which were not consistent with causating tuberculosis. These features suggest that cystic fibrosis may have been the cause of his illness and death. Chopin's sister Emily, died at 16 years of age, possibly also of cystic fibrosis.

Tuberculosis, or "consumption" as it was known to 19th century persons, was something more than just a disease. It was said to have some benefits for its sufferers, as "consumptive" patients were renowned for an enhanced creativeness, hopefulness and sensitivity which belied their delicate condition. An eminently fashionable disease, it was a disease of artists and poets. The personality of Violante in Verdi's La Traviata is an example of the then contemporary idea of the apo phthisica. Famous "consumptive" persons included Marie Duplessis, the immortal figure, Vincenzo Bellini and Maria von Wolter. However, the most famous of all was Frédéric Chopin, the pianist who enthrall Paris with his delicate piano-playing and beautiful compositions. At Chopin's untimely death there was an unprecedented display of grief by Parisian society, and a moving funeral at the Madeleine - a public event of the first magnitude. Soon after his death, books and pamphlets that described his life and sufferings appeared. The books concentrated mostly on the social and artistic atmosphere that was created by Chopin's life and death. However, their accounts of his disease were influenced heavily by the contemporary knowledge of tuberculosis, and many symptoms which a modern physician would have to elicit are not mentioned. None the less, they provide sufficient information to make the diagnosis of tuberculosis extremely doubtful.

Physical appearance
Chopin had the usual physical appearance that is characteristic of sufferers of cystic fibrosis. His frailty and emaciation were remarked on from his teen-age years. Although 170 cm in height, he weighed less than 45 kg in 1840, nine years before his death. In 1844 this state of oligemia is marked in the most obvious degree. This feature of his physical appearance can be seen clearly in a caricature which was executed by his friend, Pauline Viardot, in 1844. Almost all observers remarked on the unusual slendermess of his limbs. When he travelled in horse-drawn carriages, Chopin feared that he would fracture his frail limbs. Perhaps this is unremarkable for a corpse pianist, but, when seen in the context of his illness it may have significance. During the terminal phase of Chopin's illness, he also developed severe pains in his wrists and ankles which was relieved partially by massage. This may have been due to pulmonary hypertrophic osteo-arthritis.

Physical fitness
From his late teens-age years it was observed that Chopin had a very poor level of exercise tolerance, so much so that it was remarked on constantly by his peers. In 1832, when Chopin was 18 years of age, he held an audience entranced by his spontaneous improvisations at the piano at an inn in Sulechow. However, after his performance, he was so exhausted that he had to be carried to his coach. This cannot be regarded as normal for a young man who was accustomed to playing the piano. Chopin was unable to produce a true forte, even on the light-action pianos of his day. He seldom played above mezzo forte. However, in 1832, Chopin undertook a series of adventures in the Silizian countryside in spite of being puff ed out and exhausted. Because his health was so delicate, most of his daily affairs were managed by his Parisian friends, to the extent of shopping for him and buying wallpaper and furniture for his house. In 1838 his mistress, George Sand, tried to cease sexual relations with him because she feared the toll on Chopin's health.

Dietary habits
There is considerable evidence to indicate that Chopin suffered pancreatic insufficiency which is associated with cystic fibrosis. The most compelling evidence was his extreme emaciation. Careful study of his dietary habits shows that he had a preference for a high carbohydrate diet, and avoided fatty foods assiduously. We know that he subsisted on bread and confectionery, which were supplemented with fish or lean chicken; this was not the staple diet of the people of northern Europe. When Chopin lost a great deal of weight after a respiratory illness at 15 years of age, his doctor found that a high carbohydrate diet enabled Chopin to regain weight.

Chopin developed a polyphagia for carbohydrates. George Sand related that one of the unfortunate consequences of the isolation of the couple on the island of Malborgh was that they could not find the correct food for Chopin. As one stage the only food that could be found for Chopin was pork from which he developed diarrhoea and abdominal pain immediately. To overcome this problem Sand prepared most of Chopin's food herself and forbade his servants to use Pork fat in the preparation of his food because it upset his digestion so much. In the last year of Chopin's life he suffered from intractable diarrhoea either because of the poritulation or pancreatic insufficiency. Chopin often wrote to his family that he was "watching his diet" to prevent indigestion and diarrhoea.

Infertility
Chopin never fathered a child in spite of frequent sexual liaisons, especially during his early years in Paris. He wrote to many of his mistresses discussing the possibility of having children as he had a deep love of children and of family life. His protracted relationship with George Sand did not produce any children. Sand had had many lovers but had no children after she left her husband, by whom she had had two children. Therefore it is likely that she may have practiced some form of contraception. However, one wonders if the couple did consider having children during their many years together. No speculation about "natural" children who were fathered by Chopin has ever reached us. Thus, there is good reason to think that Chopin may have been infertile.

Skin deformities
An invariant characteristic of persons with cystic fibrosis is a tendency towards salt depletion. It is difficult to isolate this symptom from Chopin's emaciation. However, the most telling evidence that salt depletion occurred was Chopin's prostration after exercise ** and prostration and hydropsyrosis during hot weather. Chopin's face was very distended and
demanded that his clothes be changed and washed frequently so that they did not become soiled.

Pattern of respiratory symptoms

The most convincing evidence that Chapin had cystic fibrosis was his long history of suppurring lung disease. From an early age Chapin suffered from a diagnosis of "inspiratory cough," which he described as a "long drawn-out cough that persisted for hours." This cough became more frequent and severe as he grew older, and he often found himself "in bed for weeks at a time." Despite these symptoms, Chapin managed to lead a relatively normal life, participating in sports and social activities until his late teenage years.

The symptoms of cystic fibrosis are usually progressive, and in the 1930s, when Chapin was in his early twenties, his condition worsened significantly. He was admitted to a hospital in Boston with a severe respiratory infection, and he spent several weeks in intensive care. During this time, his doctors confirmed his diagnosis of cystic fibrosis and began to treat him with a mixture of antibiotics and other medications. Despite these treatments, Chapin's health continued to decline, and he was ultimately admitted to auburn hospital in Maine, where he died on October 20, 1938.

Chapin's lung disease was severe enough to require hospitalization on several occasions. He was admitted to the hospital in Maine in August 1938 with a severe respiratory infection, and he spent several weeks in intensive care. During this time, his doctors confirmed his diagnosis of cystic fibrosis and began to treat him with a mixture of antibiotics and other medications. Despite these treatments, Chapin's health continued to decline, and he was ultimately admitted to auburn hospital in Maine, where he died on October 20, 1938.

The upsurge of his disease was marked by a bout of heat exhaustion, an accepted complication of cystic fibrosis on Chapin's part. The episode occurred in August, when he spent several days outside in the middle of a heat wave, and it was followed by a prolonged stage of illness, which lasted until his death. During this period, his doctors administered various medications, including antibiotics and other supportive therapies, in an effort to manage his condition.

However, the treatment was not successful, and Chapin continued to suffer from respiratory infections and other complications. His condition worsened, and he was ultimately admitted to the hospital in Maine, where he died on October 20, 1938.

Chapin's story is a cautionary tale of the dangers of cystic fibrosis and the importance of early diagnosis and aggressive treatment. His life is a reminder of the need for continued research and improved medical care for this serious and often debilitating disease.
compose. During this trip he suffered a bout of deep depression which compounded his medical problems. When the idea of marriage was broached, Chopin replied that it would be unfair on Stirling to marry "a cadaver." Chopin returned to Paris in November 1840, prostrate with exhaustion. He had only 11 months to live.

Chopin's final illness

In February 1849, it became apparent that Chopin's health was failing. Pauline Viardot wrote, "His health is slowly declining, with fairly good days he can go out in his carriage. There are other days during which he coughs blood and suffers spells of coughing which choke him." By early July his ankles had become greatly swollen, and his weight loss and cachexia accelerated alarmingly. On July 25 he wrote that he could no longer walk, even with assistance. He had already sent for his family in Poland, and on June 25 he wrote to his sister Louise, in Warsaw:  

"My sister, if you possibly can come here I am very weak and no doctor can do me half as much as you will. If you are short of money borrow some. When I am better I shall easily make enough to pay back whoever has lent it to you."  

Dr. Frenkel, one of Chopin's physicians, prescribed emetic agents in an effort to relieve the bad humour from Chopin's body. In Chopin's words to his friend Woejach Grymesia, he "did not spare them," and offered little practical advice. Chopin suffered badly under Frenkel's regimen of emetic drugs.

Unhappy with this treatment, Chopin consulted Dr. Jean Cruveilhier, who was widely considered to be Paris' foremost expert on "pulmonary phthisis."  

Cruveilhier recommended that Chopin moved to a place with rest and a light diet, and stopped Frenkel's aggressive treatment. Chopin, who was impressed with the physician, became more optimistic in his outlook and Louise, who arrived in Paris in August, added to Chopin's happiness. Cruveilhier told the Chopin family that Chopin had been led to say that Chopin was, in fact, "consumptive."  

Chopin's deterioration was irreversible and he died suddenly after a bout of coughing on October 11, 1849, at 2 a.m.

Before his death, Chopin's apartment was the scene of great social activity. Pauline Viardot remarked that, "all the great names had come to his room to favor." A photographer was refused permission to photograph Chopin on his deathbed. A contemporary cartoon of a weeping woman was captioned, "The Only Countess in Whose Arms Chopin Did Not Die."  

Chopin's final illness was characterized by increasing weakness and anemia, diarrhea and ascites, and the presence of the lower extremities. His face was so congealed before his death that his features were almost unrecognizable, due probably to venous hypostasis from lying in a horizontal position. However, I just remarked that Chopin's face retained to its usual appearance soon after his death. G. Gawdard noticed that Chopin's face was "blackened," which suggests central cyanosis. The possible presence of pulmonary hypertrophic osteoarthropathy has also been considered.

The accounts of Chopin's final illness which exist at the observations of those authors - Chopin's pupils, Arthur Guinan and Charles Gavard; and Franz Liszt. Neither Guinan nor Liszt were eyewitnesses to Chopin's death. There is some evidence that these accounts were influenced by discussion with contemporaneous medical practitioners. Franz Liszt consulted Jean Stirling for first-hand information, and we know that she discussed the case extensively with Jean Cruveilhier.

All three accounts reveal that Chopin remained conscious and able to work until he died. There were no rigor and Chopin had no disorientation that would suggest the presence of an acute brain syndrome, which would be expected if he had had tuberculosis. Indeed, the symptoms of pain and asthenia, and ability to answer questions and talk to his friends although his voice was painfully weak. Thus, the diagnosis of tuberculosis pulmonary and laryngeal is unlikely.

However, because 19th century doctors thought that laryngitis could actually cause tuberculosis in a view that we now discredit - Chopin's biographers wrote of his laryngitis as highly significant. Indeed, Chopin never experienced any dysphonia, which is a common symptom of tuberculous laryngitis, in spite of the episodic bouts of laryngitis. Chopin's weak voice was due probably to respiratory asthenia.

Post-mortem controversy

After Chopin's death all Paris clamored to know the cause of his untimely demise. Both Chopin had asked that no body be opened. Cruveilhier performed an autopsy and the body was embalmed afterwards. The cause of death was given as, "tuberculosis of the lungs and tarsus and caecum."

However, a considerable amount of controversy has surrounded the issue of the autopsy report which was produced allegedly by Cruveilhier. It has certainly not been in modern times and was described as being "destroyed in a fire," in spite of being quoted from frequently in the medical literature that pertains to Chopin. Jean Stirling, in response to a letter from Liszt, quoted Cruveilhier as saying that "Chopin's lungs were affected as does his heart." This statement has been repeated by medical biographers as an attempt to disguise the fact that Chopin had pulmonary tuberculosis, which is an infectious disease.

However, a letter also exists from Chopin's friend, Grymesia, which supports the view that Chopin's autopsy did not disclose pulmonary tuberculosis and, indeed, that Chopin's disease was one that had been encountered previously by medical science. He wrote to Auguste Leu from Paris in October 1849:  

"[Chopin] gave instructions for his body to be opened, being convinced that medical science had never understood its disease and that in fact it was found that the cause of death was different from what was thought; but that nevertheless he could not have lived.

Post-mortem, the post-mortem examination was limited to the characteristic lesions of secondary tuberculosis in the lung. Indeed, if Chopin's "tuberculosis" had been severe enough to cause cor pulmonale, then a vast amount of tissue destruction would have been present in the lungs. By contrast, the lesson of cystic fibrosis or bronchiectasis often manifest themselves too obviously. His gross cardiomegaly was consistent with death due to cor pulmonale. Bronchocelest, which previously had been described by Halbertsma, was not at that time a recognized complication of primary tuberculo-

Thus, if Chopin's illness at 13 years of age were indeed primary tuberculosis and bronchocletasis developed as a consequence of this, then the fact that his tuberculosis was in fact would have escaped Cruveilhier's diagnosis.  

It has also been well documented that sufferers of cystic fibrosis could survive to a reasonable age in the pre-antibiotic era. Also, the disease has variable in its clinical presentation. Marks and Anderson have reported the cases of a patient with cystic fibrosis, who was born in 1915, who died at 66 years of age.  

Family history

Chopin's sister, Emily, died at 14 years of age of an illness that resembled cystic fibrosis. Her illness, which lasted for more than one year, was characterized by severe weight loss, recurrent hemoptyses and orental pneumonia. Emily also had a long history of frequent respiratory infections. Earlier medical biographies of Chopin dismissed Emily's illness as tubercular illness noted only her final, catastrophic death. They also noted that Chopin acquired his infection from his sister. This is unlikely as muscular tuberculosis in not infection usually and secondary (cystic) tuberculosis is comparatively rare in children.

Differential diagnosis

Cystic fibrosis is more likely than simple bronchiectasis as the disease of Chopin's chronic lung disease because he did not suffer from The MEDICAL JOURNAL OF AUSTRALIA

December 7, 1987 Vol. 147
metastatic infection or from symptoms that could have been caused by systemic amyloidosis. The immobile cilia (Kartagener's) syndrome is unlikely because of the absence of middle-ear disease and chronic sinusitis. Chopin did not have exostoses but this is true of 50% of patients with this syndrome. Finally, the diagnosis of an agammaglobulinaemia is unlikely because Chopin did not suffer from disseminated infections.

However, patients with long-standing cystic fibrosis, bronchiectasis or tuberculous show "clubbing" usually. Whether or not Chopin showed clubbing remains a contentious issue, as most portraits of Chopin, and the famous photograph by Louis Bisson, fail to show his fingertips in spite of the conversion of 19th century portraiture that showed the pianist's hands. However, Chopin's penchant for wearing gloves is well known, and it must be noted that Marks and Anderson's patient who had cystic fibrosis did not exhibit digital clubbing when he presented at 46 years of age.20

Conclusion

Many of Chopin's biographers have been entirely unknown to the composer. He has been labelled as overly fastidious, hypochondriacal and a "clumsy". The medical evidence does not favour such a conclusion. With a serious physical handicap he was an invalid at an early age, and his fastidiousness in his physical appearance was an attempt to compensate for, and to disguise, his disability. Chopin retained deeply his dependency on others, which was a necessary consequence of his disease, and made every attempt possible to maintain his independence. In addition to this, he also made a profound and unique contribution to the arts and his music continues to enthral people the world over. Chopin's life is a paradigm of what can be achieved in spite of serious disease.

Acknowledgements

I would like to thank Professor Peter Phelan of the Royal Children's Hospital, Melbourne, and (in the dearth of medical expertise) Dr. Geoffrey McWilliam of Sydney for their invaluable advice concerning cystic fibrosis, and Maria Williams for her advice and help in the preparation of this manuscript.

References


Further reading


(Received March 15, accepted June 18, 1987.)