

Correspondence

Riddle from a love potion

The case mentioned below concerns one of the most famous personalities in the last 20 years. His name is Thomas 'Tom' Marvolo Riddle, better known as Lord Voldemort. He is the villain in the book series and subsequent movies collectively known as 'Harry Potter'. Mr Riddle is a magical wizard that is reviled as an amoral psychopathic murderer. This article presents his medical symptoms and suggests a possible underlying pathology.

First, let us examine Mr Riddle's prenatal history. He was born to Mrs Merope (Gaunt) Riddle and Mr Thomas Riddle (Senior). At the time of conception and early embryonic development, at least one of the parents was being given a potentially dangerous substance called a 'love potion'. We believe that the father was given this substance. Whether it was a teratogen is unknown. But we might suspect that his mother was also taking a medication. We know that Mrs Merope Riddle was initially very unattractive and we know that her perceived beauty changed after the drug was given. One currently available and real medication with nearly magical qualities is isotretinoin, which is also known by several brand names including Accutane. It rapidly helps clear the face from scarring and pitting acne. As such, it can reveal underlying beauty. It acts to decrease the size and activity of sebaceous glands, which decreases secretion. Thus, the medication helps make a woman more attractive, and can be considered a 'love potion'. The medication is X-rated and it causes birth defects.

Isotretinoin is a teratogen. It interrupts normal development and is especially harmful during the early phases of embryonic development. Its chemical-related cousins are retinoic acid and their better-known vitamin A. Retinoic acid is produced in localised sites at critical stages of embryonic development. It helps determine position along the anterior/posterior axis. Isotretinoin will thus disrupt normal development. Although, the exact prenatal history of Mr Riddle (Junior) cannot be determined, suspicion can be drawn to drugs disturbing his development, and thus influence his subsequent physical and mental health.

Prominent features of Mr Riddle's behaviour and anatomy point to a long-term severe medical condition. He suffered from bouts of syncope when he became angry

and upset. At times, he would drop to his knees and squat, or lose consciousness completely. This symptom indicates a loss of oxygenated blood supply to his brain. Likewise, his complexion at most times was whitish-grey or with a bluish ting. Medically, this is cyanoses. A third telling sign is the shape of Mr Riddle's fingers and their abnormal broadening at the tips. In medical terms, this is called clubbing of the fingers. It is often the result of chronic hypoxia, the lack of sufficient oxygen in his blood for many years. Mr Riddle also suffered from facial changes later in adulthood.



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Examined together, these signs and symptoms indicate that Mr Riddle suffered from chronic hypoxia. This condition may have been a congenital medical problem from birth. Suspicion is placed on the 'love potion' taken by one of his parents during his early embryological development. Chronic hypoxia may be caused by cardiac dysfunction. We will examine a congenital cardiac defect called the tetralogy of Fallot. Mr Riddle suffered from several symptoms characteristic with this pathology.

Tetralogy of Fallot is one of the most common cardiac abnormalities in humans. It occurs at a frequency of 1:2000 births. As its name indicates, tetralogy often has four heart abnormalities in the syndrome. These include; (1) right ventricular hypertrophy, (2) ventricular septal defect, (3) pulmonary stenosis and (4) displacement of the aorta. Patients with tetralogy of Fallot may show signs of distress and hypoxia beginning at birth, others appear normal and go undiagnosed. Infants may become cyanotic when breast feeding. A heart murmur is usually present, and the diagnosis may be confirmed by cardiac ultrasonography. The cause of tetralogy is often not understood, even though it is a common heart defect. It may be associated with rubella during pregnancy, maternal alcoholism or perhaps even the use of a 'love potion'.

Some patients with tetralogy may show little or no symptoms at birth. Only later in life will they show episodes of hypoxia,

usually with vigorous play. At these times, outflow from the right ventricle increases but cannot proceed normally because of the pulmonary stenosis. The increased blood flow then shunts through the interventricular foramen, in a right-to-left shunt. The unoxygenated blood then circulates with the left-sided flow out the aorta. The result is an episode of cerebral hypoxia and the patient may faint. These episodes are called a 'tet attack'. Children with repeated attacks can feel the onset of dizziness and learn to squat down. By flexing at the hip, the femoral artery is compressed. Pressure in the arterial system increases. This stops or reverses the right-to-left shunt in the heart. The patient then recovers. Similarly, Mr Riddle suffered from syncope in times of stress. These occur when he realises one of his precious possessions has been destroyed. In these instances, Mr Riddle recovers relatively quickly, without the assistance of Bellatrix Lestrange or others.

As Tom Riddle grows into adulthood, his activities and physical appearance changes. Tom was shunned by his playmates as a child. Perhaps he was unable to play with them in strenuous activities, perhaps because of tet attack, and was then excluded from the games. Later in life, when he went to Hogwarts School, he did not participate in sports and was better accepted. We also know that the young Mr Riddle was good looking but was deformed when he reappeared years later at the cemetery with Harry. The most prominent change is his withered nose. This change might be attributed to the tetralogy of Fallot and the accompanying Eisenmenger complex. Right ventricular hypertrophy, with secondary pulmonary hypertension, results in progressive hypoxia. The extremities are affected and can cause necrosis, including the nose. Other medical conditions may account for his nasal atrophy. A broader differential diagnosis include leprosy, congenital syphilis, cocaine abuse, malignant granuloma and systemic sclerosis. These other diagnoses, however, do not account for the most striking feature we observe, namely Mr Riddle's syncope episodes.

His syncope events were depicted in the books and movies as being due to destruction of part of his soul in horcruxes. Rather than being mystical, Mr Riddle's syncope may have been caused by the common medical reason, transient cerebral hypoxia. In the end, Mr Riddle dies on realising that his cherished pet, Nagini, had been killed by Mr Potter's friend, Neville Longbottom. Perhaps this terminal event was not the

destruction of the last remaining part of his soul, but rather from cardiac failure. When his fatal tet attack occurred, Mr Riddle was on his knees. As a result, he was unable to flex his hips and limit his effective arterial volume. His inability to compensate resulted in brain asphyxia. All of his thoughts, dreams, memories and ambitions dissolved into nothing just as shown in the movie.

Based on these findings, we may say that Mr Tom Riddle was a sympathetic and unfortunate victim. Drugs taken during his early embryonic development may have caused congenital pathology. His adult signs and symptoms suggest that he may have suffered from the cardiac syndrome known as tetralogy of Fallot. His condition was never diagnosed or treated. Compounding his medical condition, Mr Riddle was orphaned and then unaccepted by other children. Mr Tom Riddle's story may be the real tragedy of the series we call 'Harry Potter'.

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