Neurology in Holy Scripture

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This paper discusses possible neurological disorders in one of the oldest and most important monuments of human literature – ‘The Holy Scriptures’. These include epilepsy, neuromuscular disorders, speech disorders, psychogenic disorders, head trauma, and subarachnoid hemorrhage. The approach to and the ‘miraculous’ healing of these ailments is discussed.

The Holy Bible, Holy Scripture – one of the supreme pastoral works of mankind of all times – has formulated the background to Christian truths, values, philosophical and practical links and moral codes, and it has described the essence of man as a social individual. The Scriptures involve our mind and daily routines so widely and man touch the edge of human disease and physical ailments too.

Nervous system diseases must have existed at the time Moses guided Jewry to the Promised Land and Jesus Christ walked the ancient Palestinian land. Jesus was the first Christian to heal neurological diseases.

Epilepsy

Epilepsy is one of the oldest and most mysterious neurological diseases known to mankind. More than any other hardship, this is closely related to religion and magic. For a long time the public and the authoritative literature on medicine named epilepsy a ‘sacred’ or ‘divine’ disease. The origin of these enigmatic names is not unambiguous and it stresses its oneness amongst other hardships known to mankind from profound antiquity. Characterized by both physical and mental symptoms, epilepsy was open to physiological and mystical interpretation. According to the natural, physiologic theories on ethiopathogenesis prevailing at the time of Hippocrates (460–370 BC) and his followers, this illness was described as a disorder of brain activity by Hippocrates in his On the sacred disease, written 400 years BC, while in the Middle Ages it was changed into a theory on ‘obsessive soul’ that led to the strangest and most curious approach and cure. Given this fundamental break from physiology to ‘obsession’ with its profound effect on the forthcoming ages, it was justified by the theological authority Origen (185–254 AD) [1] who described epilepsy as a hardship sent by the incubus (demon), based on an uncompromising belief in the New Testament and quoting directly from the episode of a boy obsessed with a dumb spirit (Fig. 1):

Teacher, I brought to You my son, who has a dumb spirit. And wherever it seize him, it throws him down, and he foams at the mouth and grinds his teeth; and he is wasting away. And I told Your disciples to cast it out, and they were not able... And when it saw Him, the spirit immediately convulsed him greatly, and falling on the earth, he rolled about, foaming at the mouth. And He questioned his father, How long has this been happening to him? And he said, From childhood. And it has often thrown him both into fire and into water to destroy him. But if You can do anything, have compassion on us and help us. [...] And Jesus, seeing that a crowd was running together toward them, rebuked the unclean spirit, saying to it, Dumb and deaf spirit, I order You, come out of him and enter him no more. And after crying out and convulsing him terribly, it came out. And he became as though he were dead so that many said that he died. But Jesus took hold of his hand and raised him, and he stood up. And when He entered into the house, His disciples questioned Him privately, Why were we not able to cast it out? And He said to them, This kind cannot come out by any means except prayer (Mark 9:17–29) [2].

The term epilepsy is not mentioned anywhere in this quotation but the description of the illness is precise and imaginative yet made 2000 years ago. It describes anamnesis of seizures (how long has this been happening to him?)... From childhood), suddenness and unpredictability (and wherever it seize him), leading symptoms (and he foams at the mouth and grinds his
teeth), epileptic cry (and after crying out), and post-convulsive immobility (and he became as though he were dead).

An analogous description of a boy with epilepsy is repeated by Matthew (Matthew 17:14–21) and Luke (Luke 9:37–43). An effective cure for epilepsy is not provided except prayer. Long before Christ, Hippocrates and his followers offered to cure epilepsy with diet and medicine [1] (let it be very mystical and obviously doubtful in effectiveness), but not magic. Jesus seems was not familiar with the works of Hippocrates.

Whilst reading about the ‘sinful soul’ and expulsion of ‘demons’, alongside descriptions of undoubtedly epileptic seizures, we find pseudoepileptic fits and psychosis possibly connected to epilepsy:

‘And when He went out onto the land, a certain man out of the city, who had demons, met him, and for a considerable time he had not put on clothes and did not remain in a house but among the tombs... For many times it [unclean spirit] had seized him and he had been bound with chains and shackles and was kept under watch, yet every time he tore the bonds apart and was driven by the demon into the wilderness. And Jesus questioned him, What is your name? And he said, Legion, because many demons had entered into him (Luke 8:27,29,30) [2].

Others tried to heal those ‘obsessed with demons’, as Mark gives evidence: ‘John said to Him, Teacher, we saw someone casting out demons in Your name, and we forbade him because he does not follow us’ (Mark 9:38) [2]. Jesus did not object.

St John was a patron of epilepsy and in France epilepsy was named after him (le mal Saint-Jean) although it is unclear why, nor is clear either to which John reference is made – John the Baptist or John the Evangelist. One version notes the head of St John the Baptist fell to the ground when he was decapitated. According to another, St John was a patron of a curious mass dancing mania (also called St Vitus’ dance) where sufferers danced until they fell down exhausted [1]. Crowds of dancing pilgrims went to pray to Molenbeek where a church of St John the Baptist was founded. Pilgrims traveled in the summer; John the Baptist’s Feast Day is June 24 and John the Evangelist’s December 27, which argues in favor of St John the Baptist [3]. John the Evangelist might be connected with epilepsy only through revelation to John of ‘the great dragon, the ancient serpent... the Devil and Satan’ (Revelation 12:9) which was connected with epilepsy.

One more mysterious and undoubtedly gripping illness is mentioned by hints in the New Testament and it is the illness of the most important and earnest advocate of Christianity – St Paul. An obvious hint and some kind of diagnostic key is a line from his letter to the Corinthians:

‘And because of the transcendence of the revelations, in order that I might not be exceedingly lifted up, there was given to me a thorn in the flesh, a Messenger of Satan that he might buffet me, in order that I might not be exceedingly lifted up. Concerning this I entreated the Lord three times that it might depart from me (2 Corinthians 12:7,8) [2].

What is that ‘thorn in the flesh’? A few versions were styled: malaria attacks or headache attacks. However, the most likely interpretation of ‘thorn, a Messenger of Satan’ is epileptic seizure as epilepsy was considered an illness sent by a demon or devil. On a famous trip to Damascus St Paul fell down from a horse experiencing a fateful insight and out of an earnest and ruthless enemy of the first confessors of Jesus’ teaching became the most earnest preacher of Christianity. One possible version says that during the trip St Paul experienced an epileptic seizure that started as a complex focal seizure with visual and auditory aura and led to a generalized seizure with post-ictal amaurosis [4,5]. Other possible versions of the event include vertebrobasilar insufficiency, syncope, sunstroke, and concussion [4,6].
We find references to other neurological disorders too.

**Paralysis**

And there was a man there, and his right hand was withered.... He [Jesus] said to him, Stretch out your hand. And he did, and his hand was restored (Luke 6:10) [2].

Although this episode mentions neuromuscular pathology in one limb, it is not possible to name the illness more clearly. It might be a consequence of a paralytic form of poliomyelitis or atrophic paralysis caused by shoulder plexopathy.

The Acts of the Apostles (Acts 3:1–10) describes the mysterious healing of a man lame from his mother’s womb [whose] feet and ankles instantly were made strong. It is probably this episode describes a person who has suffered from cerebral palsy.

**Dissociative movement and other disorders**

Movement disorders that appear to be obvious organic neurological affections and yet that recover suddenly are often described as psychogenic, functional, or dissociative movement disorders; these might indeed be healed ‘with magic’ and this raises public astonishment and admiration. Surely psychogenic (dissociative) disabilities, so frequent in modern-day neurological practice, were also widely prevailing during those ages of fanatic belief, mystical interpretation, and mean medical knowledge. The authoritative approach of a doctor or a prophet and his commanding manner could have been an effective means of healing:

And behold, they brought to Him a paralytic, lying on a bed... Then he said to the paralytic, Rise, take up your bed and go to your house (Mt 8:2,6,7) [2].

They brought to Him a dumb man possessed with a demon. And when the demon was cast out, the dumb man spoke. And the crowds marveled, saying, Never has anything like this been seen in Israel (Mt 9:32,33) [2].

Peter and other apostles successfully used miraculous healing methods in the name of Jesus too. The Acts of the Apostles report how Peter successfully healed paralysis, perhaps because of a conversion reaction:

And he found there a certain man named Aeneas, who for eight years had been lying on a mat, for he was paralyzed. And Peter said to him, Aeneas, Jesus Christ heals you. Rise up and make up your own bed. And immediately he rose up (Acts 9:33,34) [2].

Amongst the healing descriptions, an episode from Mark’s Gospel distinguishes it from others and properly describes the ritual of a probable psychogenic or hysterical blindness healing:

And he took hold of the hand of a blind man and led him forth outside the village. And He spat on his eyes and laid His hands on him and asked him, do you see anything. And he looked up and said, I see men, for I see them as trees, walking. Then again He laid His hands upon his eyes, and the man looked intently and was restored, and he began to see all things clearly (Mark 8:23–25) [2].

**Coma**

Neurological pathology of a different kind is illustrated by the healing of Jairus’ daughter (Fig. 2):

And he fell at Jesus feet and treated Him to enter into his house, because he had an only daughter, about twelve years old, and she was dying.... While He was still speaking, someone came from the house... saying, Your daughter has died; do not trouble the Teacher any longer. But Jesus, hearing it, answered him, Do not be afraid – only believe, and she will be healed. And He came to the house.... And all were weeping and mourning for her; but He said, Do not weep, for she has not died but is sleeping. And they laughed scornfully at Him, knowing that she had died. But He took hold of her hand and called out saying, Child, arise! And he spirit returned and she rose up instantly; and He directed that something be given to her to eat (Luke 8:41,42,49–55) [2].

It is probably this extract describes a deep coma episode, from mortification to assumed death and further revival. Deep coma for the people of this ancient province was likened to death. Jesus, seeing the girl, knew she was not dead and stated that for the others. The 12-year-old child’s recovery from coma should not
cause surprise. We do not know the cause of this coma, whether because of intoxication, encephalitis, or something else. However, children often recover sooner and more successfully than the adults even after the most serious brain lesions.

Jesus reasonably asked for the girl recovering from deep coma to be fed. Less likely she might have had catatonic stupor (catalepsy), a particular state of psychomotor depression where the patient does not react to the environment and can stay for a long time in a fixed pose without voluntary movement.

Another well-known episode vividly describes 4 days of Lazarus from Bethany lying in the tomb and his resurrection (John 11:1–44) which is difficult to explain medically although, theoretically speaking, it is possible to bury a man in deep coma when a qualitative medical diagnosis is not available. There are known episodes of burial alive (although with very poor documentation) after an epidemic of lethargic encephalitis at the beginning of the 20th century and horror stories, perhaps based on some truth, in Victorian period. A phrase witnessing ‘true death’ by Martha – ‘God, it is smelling’ – may describe the hygiene of a person laid flat for 4 days in a cellar and swaddled in bandages. As only John mentions such an important event as the resurrection of Lazarus, some might claim that this event is only the creative notion of an evangelist trying to emphasize the Deity of Jesus; still and all the evangelical name of Lazarus came to neurology as ‘Lazarus complex’ and ‘Lazarus movements’. The ‘Lazarus complex’ includes various post-resuscitation experiences, usually after cardiac arrest, for example ‘presence behind your body’, ‘movement in a tunnel’, ‘emergence into light’, and other similar experiences. Supposedly these feelings are evoked by prolonged cerebral anoxia of the temporal lobes [7,8], ‘Lazarus movements’ – spontaneous opisthotonos, twitching of the shoulders, occasional movements of the hands and head, displayed in the event of brain death after interruption of mechanical ventilation. Spontaneous discharge of cerebral motorneurons has been implicated [7,9].

Head injury

Loss of consciousness caused by traumatic brain injury is described in the Acts of the Apostles:

And a certain young man named Eutychus was sitting in the window and began to sink into deep sleep while Paul conversed longer; and when he had been overcome by sleep, he fell down from the third story and was taken up dead. But Paul went down and fell upon him, and embracing him, he said, Do not make a commotion, for his soul is in him. And when he had gone up and […] had spoken for a considerable time, until daybreak, he therefore went forth. And they brought the boy alive and were comforted, and that not moderately (Acts 20:9–12) [2].

Loss of consciousness here is caused by head trauma, assumed by bystanders to be death, but if we look deeper (Paul went down and fell upon him, and embraced him) it is seen that the young man was alive. We do not know for how long the loss of consciousness lasted and what other neurological symptoms (if any) might have been found and so we do not have sufficient data to determine the exact type of brain injury described; however, falling from the third floor, to be considered dead, and being transported after a long period of time, suggests brain contusion.

Aphasia

A vivid description of aphasia is the Angel Gabriel’s revelation to Zachariah. Zachariah was a priest during the reign of King Herod and he was a very dutiful and honest priest who did not have children with his wife Elizabeth for a long time. According to Gods’ will, a child was born to them when elderly who later became John the Baptist. Gabriel communicated unexpected news about the would-be child to Zachariah in the temple:

And the people were waiting for Zachariah, and they marveled at his delaying in the temple. And when he came out, he was not able to speak to them, and they realized that he had seen a vision in the temple. And he made signs to them and remained dumb (Luke 1:21–22).

And they gestured to his father as to what he would want him to be called. And asking for a tablet, he wrote, saying, John is his name. And they all marveled. And his mouth was opened instantly, and his tongue loosed, and he began to speak, blessing God (Luke 1:62–64) [2].

Zachariah was an old man and the 9 months history of suddenly developed aphasia would suggest an acute cerebrovascular disorder in the left carotid territory. Aphasia described as an isolated clinical syndrome, at the time when Zachariah could not speak although he understood everything, suggests limited injury in the posterior part of gyrus frontalis inferior sin, i.e., motor (Broca’s) aphasia. This might be contradicted by retained ability to write, which is usually lost in motor aphasia. However, continuing ability to write remains during the so-called little Broca’s aphasia or aphemia [10]. Aphemia or pure motor aphasia shows itself by a sudden disability to talk (mutism) but full ability to understand the speech of others and communication in written form. Aphemia may be accompanied by transient right hemiparesis and buccofacial apraxia, without
other neurological symptoms. Aphemia usually sets back into normal speech (usually with a ‘foreign’ accent). The pathology is located in the Broca’s area in the dominant hemisphere or a little below it [7,10]. Certainly there is no need to take the Gospel text directly as a record in the medical case history, yet a diagnosis of aphasia (aphemia) caused by cerebrovascular accident is very probably.

Other speech disorders are described elsewhere. The Acts of the Apostles depicts a very important episode that happened to the disciples of Jesus who gathered on Whit Sunday:

And they were all filled with the Holy Spirit and began to speak in different tongues, even as the Spirit gave to them to speak forth... And when this sound occurred, the multitude came together and was confounded because each one heard them speaking in his own dialect... And they were all amazed and perplexed, saying to one another, What does this mean? But others jeered and said, They are full of new wine! (Acts 2:4, 6, 12, 13) [2].

How can ‘uneducated men and laymen’ (Acts 4:13) suddenly become polyglots? The fact that people from different nations gathered and heard the apostles speak their native languages introduces doubt concerning the real possibility of this event. This can be shown indirectly by the noted skepticism of some of the spectators (they are full of new wine). One historical detail shows the apostles did not know many foreign languages: a supposed author of one of the Gospels – Mark – was a translator for Peter. Most probably the episode represents logorrhea – unstoppable volubility, a pathological accelerated expression of thinking [11] – production of thinking is poor, associations emerge quickly, one idea chases another, and so he did not actually die on the knees of his mother but gradually (until noon) lost consciousness. Loss of consciousness caused by the growing intracerebral pressure and decreased brain perfusion is a frequent complication of subarachnoid hemorrhage.

Subarachnoid hemorrhage

The Second Book of the Kings describes an episode with a Shunammite woman and the illness of her child:

The child grew, and one day he went out to his father, who was with the reapers. ‘My head! My head! he said to his father. His father told a servant, ‘Carry him to his mother’. After the servant had lifted him up and carried him to his mother, the boy sat on her lap until noon, and then he died’ (2 Kings 4:18–20) [12].

It is probably this episode is acute spontaneous subarachnoid hemorrhage, probably because of rupture of a congenital intracranial aneurysm. The note of a new and sudden intense headache and the absence of obvious focal neurological symptoms support this proposition. The prophet Elisha resurrected the child and so he did not actually die on the knees of his mother but gradually (until noon) lost consciousness. Loss of consciousness caused by the growing intracerebral pressure and decreased brain perfusion is a frequent complication of subarachnoid hemorrhage.

Neuromuscular disorders

The Old Testament Book of Judges (Judges 13–16) describes a widely known story about a Jew potentate Samson, whose hair was cut by trick and his powers melted; he was blinded by the enemy Philistines, arrested and imprisoned. After his hair grew, Samson recovered his powers and ruined the columns supporting the temple; he and 3000 Philistines died under the wreckage. This history of a few weeks’ diagnosis suggests an acute inflammatory demyelinating polyneuropathy – the Guillain-Barré syndrome. There is also a raised version of myasthenia gravis [14].

But Moses said to the Lord, ‘Since I speak with faltering lips [other version: uncircumcised lips], why would Pharaoh listen to me?’ (Ex 6:30) [12].

This has been explained as simple modesty as well as organic (structural) disorder: articulation disorder, a circumstance of lip burn or an innate malformation of the mouth [13]. The latter version is most supported by the mention of ‘uncircumcised lips’. Most probably it is only a phraseological unit of that time meaning ineloquence. One of the most convincing versions of the disorder is stammer, a disorder of vague genesis and usually met with during the maturation period that may develop as a result of a traumatic or degenerative disorder of the brain. Neuroanatomic localization has not been possible [7,10]. Although Moses mentions this speech disorder in old age, his words ‘I have never been eloquent, neither in the past nor since’ suggest he may have had a stammer from childhood.
Conclusion

We may conclude that most neurological disorders in ‘The Holy Scripture’ are short-spoken or described mystically, whereupon an exact diagnosis is hardly possible. However, it would be naive to expect the creators of ‘The Old and New Testaments’ to have modern knowledge of disease. They were writing in the context of their era and in a language understandable to their contemporaries. Finally, ‘The Holy Scripture’ is not a medical encyclopedia; its writers had nothing to do with medical precision.

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References