Neurology and the Bible

The Old Testament section of the Christian Bible is comprised of Hebrew Scriptures of diverse nature including history, prophecy, hymns and wisdom literature. It is accepted as divine origin and was canonised in the second century BC. The Bible contains no specific medical sections however its books encompass numerous medical conditions and observations in various contexts. There are a number of passages of neurologic significance which may be interpreted by a contemporary medical reader. Several examples are presented here which highlight the detailed descriptions of the biblical authors.

Although the Bible mentions a number of vital human organs such as the heart, blood, bowels, liver and kidneys, there is no specific mention of the brain. This is not unusual considering it is sacred literature rather than a medical or scientific text. Certainly there are references to the head as a place to be anointed or crowned but this does not necessarily support the theory that the authors recognised the primary importance of the brain. Daniel 2:28 records, “Your dream and the visions that passed through your mind as you lay on your bed.” It speaks of mind-visions and at least obliquely implies brain-centeredness. The Bible refers to the mind but apart from distinguishing the mind from the heart, it does not state where the seat of the mind is located. The ancients were divided in their opinions on this matter. Galen for example, was a vigorous advocate of the brain as the centre of function and he aligned himself with the Encephalocentric School that also included the author of the Hippocratic text, *The Sacred Disease*. The opposing school of heart centred or Cardiocentrists included Aristotle as well as the author of the Hippocratic text, *The Heart*, and the Stoics.

*Moses speech impediment*

Moses, the great lawgiver, the chief of the prophets according to Mamonides', probably had a speech defect. “I am slow of speech and tongue”\(^4\), Moses declares and pleads with God “since I speak with faltering lips, why would Pharaoh listen to me”\(^4\). Most authorities consider that these quotations mean that he had a stammer. Although no cause is evident in most people who stammer, a number of associations are recognised. Brain injury, hereditary factors and anxiety may be related to a stutter. Evidence of trauma in Moses’ early life is derived from the Midrashim\(^5\), a collection of learned books that search for meanings in the Bible which are not initially apparent. Rabbinical legend records that one-day the young Moses was playing with Pharaoh and innocently took hold of his crown placing it on his own head. Was this an omen that one day Moses would destroy Pharaoh and become the most powerful person in the country? The high tension in this scene would have been intense and perhaps enough to induce a state of profound childhood anxiety\(^6\).

*Eli’s death*

The death of Eli, priest of Shiloh is graphically recorded in 1 Samuel 4. The Philistines fought and
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defeated Israel with the death of thirty thousand soldiers and capture of the Ark of God. Eli’s two sons Hophni and Phinehas also perished. When Eli heard of this disaster, the 98 year old, nearly blind man fell over backward from his seat by the gate and his neck was broken and he died. The word neck in Hebrew is Mafreket from which the root, Perek means joint. The only neck injury which would result in sudden death is one involving the Atlanto-axial joint. Perhaps from experience in slaughtering animals, the Hebrew writer was aware of this important aspect of cervical anatomy.

Jacob’s limp
In Genesis 32:24, a mysterious man, or an angel according to Hosea 12:4, appeared and wrestled with Jacob until daybreak. When he saw he could not defeat Jacob he touched him on the sinew of his thigh (the gid hanasheh). As a result the Israelites would not consume that part of the animal’s thigh from that point on. Afterwards Jacob walked with a limp which could be attributed to neurapraxia of the sciatic nerve. There are various views on whether this mysterious being was a man, angel or God Himself. The famous incident is depicted in the art of Rembrandt and Delacroix. Subsequently Jacob was known as Israel, the one that struggled with God. To this day, Orthodox Jews will not eat that part of an animal’s thigh containing the sciatic nerve.

Head injuries in the Bible
The Old Testament records three examples of head injury, the slaying of Goliath by David, the death of Sisera by the hand of Jael and the skull fracture of Abimelech incurred in the Tower of Tevetz. Various attempts have been made to understand the mechanism of these head injuries using philology, knowledge of biblical warfare and applying modern medical knowledge. There is reasonable likelihood that Goliath was an acromegalic giant. A large pituitary macro-adenoma could result in a bitemporal visual field defect making him susceptible to an attack from the side by David. The temporal bones are the most vulnerable to trauma but the frontal bone is often thinned resulting from enlargement of the frontal parasnal sinus in acromegaly. The slingshot may have stunned him with concussion. The fatal blow was likely the severing of the giant’s head rather than direct trauma from the missile.

Sisera, the Commander of King Yabins army, fled flowing his armies’ defeat by the Israelites led by Deborah and Barak. He made his way to the neighbouring land of Kenites where he was greeted and invited into the tent of Jael. After quenching Sisera’s thirst, Jael covered him with a blanket.

“Then Jael, Hebir’s wife, picked up a tent peg and hammer and went quietly to him while he lay fast asleep, exhausted. She drove the peg through his temple into the ground, and he died.” Death most likely would have been rapid especially if he was sleeping in the supine position, the tent peg may have traversed the frontal, temporal and occipital lobes and exited through the foramen magnum. A more lateral trajectory may have injured the intracranial vessels resulting in an expanding haematoma.

Abimelech’s death appears to be triggered by a clear-cut case of concussion and skull fracture, “a woman dropped an upper millstone on his head and cracked his skull. Hurriedly he called to his armour-bearer ‘Draw your sword and kill me, so they can’t say, a woman killed him. So his servant ran him through and he died.’” Abimelech was thus able to avoid the ignominy of death at the hands of a woman.

The Old Testament Scriptures highlighted in this paper contain a variety of references to neurologic conditions in various contexts. Although the writers were not medical or scientific men, the narrative descriptions represent detailed and astute observations. Some of the cases demonstrate at least some knowledge of anatomy and function perhaps derived from experience with animals in an agrarian environment. Together they provide a rich source for analysis from a modern medical perspective.

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References:
1. Daniel, 2:28
3. Exodus, 4:10
4. Exodus, 6:30
5. Midrash Rabbah, Exodus, Section 26, Vihna Ed., 1878:12
7. 1 Samuel, 4:18
8. Genesis, 32:33
9. 1 Samuel, 17:49-51
10. Judges, 4:21, 5:25