CHAPTER II

HISTORICAL PERSPECTIVE

Cassius: But soft, I pray you. What did Caesar swoon?

Casca: He fell down in the market place, and foam’d at the mouth, and was speechless.

Brutus: ‘Tis like. He hath the falling sickness.

Cassius: No, Caesar hath it not: but you and I and honest Casca, we have the falling sickness.

From Julius Caesar, I.ii, by William Shakespeare

Epilepsy is one of the earliest recorded diseases in both Western and Eastern cultures and civilisations. It attracts the attention of doctors, scientists, and researches everywhere, who are still in search of a clear understanding of the causes of particular seizures. Different nations contribute to the ever-expanding understanding of its history, epidemiology, prognosis and mortality, along with clinical manifestations and differential diagnosis. Tracing modern diagnosis and therapies back to historical times allows one to compare both modern and ancient perspectives on the disorder; consequently highlighting the similarities and differences and the evolution of our understanding of the current perspective on epilepsy.
What follows is an overview of the history of epilepsy from a Western and Eastern (more specifically the ancient Indian) perspective.

2.1 History of Epilepsy: The Western Perspective

The subject of epilepsy has had an enormous historical legacy associated with it. This has undoubtedly shaped both individual and public attitudes towards the condition. The relationship between epilepsy and its behavioural or mental associations has always been a matter of great interest, debate and controversy (Reynolds, 1987). Since ancient times, behavioural changes both real and imagined have formed a halo around epilepsy. The myth of epilepsy as a curse has been largely vanished in modern cultures, but the disorder remains a social stigma for many.

The accepted etiology of epilepsy often vacillates between naturalistic and spiritual causes and the treatment of people with epilepsy also vacillates between naturalistic healers (e.g. neurologists and psychiatrists) and spiritual healers (e.g. magicians and religious healers) (Haynes & Bennett, 1992).
2.1 a.: Greek- Roman Period

In the ancient civilisations the earliest mention of epilepsy has been found in the Greek-Roman period. Even with regards to nomenclature, the term epilepsy derives from the Greek word "epilambien" which means "to take hold of" or "to seize." According to the Greek civilisation epilepsy was considered to be a sacred disease where in the body of the individual was ‘invaded’ by a God; as only a God could deprive a healthy man of his senses, throw him to the ground, convulse him and then rapidly bring him to his former self again (Scaravilli, 1998).

As epilepsy was considered to be a "sacred disease" which was sent by the Gods; a common form of treatment for people would be to offer sacrifices, seek expiation and take part in religious acts under the instruction of priests (mostly in the temple) in an attempt to be cured.

In the Roman era it was the first time that the term ‘aura’ was used in medical literature by Galen. It was described as signs of the onset of seizure that only the person with epilepsy was aware of (Palermo, 2003).
Till date we describe the concept of aura in a similar manner. Diagnosis of epilepsy during this period was done by providing a piece of jet (stone) for the patient, waiting to see if they would collapse, most likely encouraging the nickname, "Falling Sickness" (Temkin, 1971). Ancient Greek doctors practiced burning the horn of a Goat, (an animal considered to be prone to epileptic seizures) underneath the patients nose. It is only in recent times with the development of technology in neurological medicine that we have moved away from the "smell test" methods, and have progressed towards studying the body and brain connections. There is anecdotal evidence to support the view that in ancient Rome people with epilepsy were avoided for fear of being contagious and spreading the ‘disease’. Epilepsy in these times also came to be associated with lunacy. Since God occupied heavenly spheres such as the moon, the word lunatic (associated with lunar activity) started being associated with people with epileptics. This association of epilepsy with mental disturbance persists even today.
2.1 b.: Biblical Period

The only evidence that epilepsy was mentioned in times before the Greek and Roman civilisations is from a recent translation of an old Babylonian text dating back to 500 BC (Palermo, 2003). However, it was during biblical times that the most famous historical account of a seizure was given in St. Matthew's Gospel, Ch. 17, Verses 15-17 of the Bible:

"Lord have mercy on my son, for he is lunatic and sore vexed, for oftimes he falleth into the fire and oft into the water. And I brought him to thy disciples and they could not cure him. Then Jesus answered and said, O faithless and perverse generation how long shall I be with you? Bring him hither to me. And Jesus rebuked the Devil and he departed out of him: and the child was cured from that very hour."

In the Bible, Mark in Chapter 9, Verses 17-18, confirms the initial suspicion that the description which follows is that of epilepsy; "he has an evil spirit in him and cannot talk. Whenever the spirit attacks him, it throws him to the ground, and he foams at the mouth, grits his teeth and becomes stiff all over."
Today the boy's condition would most likely be diagnosed as a grand-mal seizure, but in ancient times, traditional healers would most likely claim that there had been an act committed against God, along with the presence of demons, that caused this horrific episode. The reported exorcism performed by Jesus Christ on the boy with epilepsy insured that even centuries later, approximately up to the eighteenth century, physicians supported the notion that epilepsy was caused by demonic possession (Haynes & Bennett, 1992).

There are many quotations describing epilepsy dating back 4000 years to the Mesopotamian civilisations and from the ancient Greece and the medieval period. There is even evidence to show that consumer advice was provided on the purchase of slaves who were found, after their purchase, to suffer from epilepsy (Scaravilli, 1998). According to Scaravilli (1998) it has been documented in ancient texts that the ancient method of diagnosing epilepsy using a piece of stone was prevalent during slave trade.
The physicians of these times also knew, for instance, that the glistening wet surface of a turning potter's wheel would trigger an epileptic seizure in some people. In this way it was possible for them to diagnose the disposition of some epilepsy patients to having seizures. Today we know that these seizures are triggered in such people as a result of their 'photo sensibility' and such susceptibility can be tested in an EEG laboratory using a stroboscope. In modern times seizures of this type can be provoked by computer games, the television or the flashing lights of a disco.

Evidence from the Arab literature suggests that 'Avicenna' propagated the view that, 'epileptic seizures originated in the brain which often led to a loss of upright posture (falling) and impairment of the senses i.e. twilight stated and unconsciousness (Temkin, 1971).
2.1c: Hippocrates’ View on Epilepsy

It was Hippocrates’ famous treatise on the ‘Sacred Disease’ that changed this ‘sacred’ aspect of epilepsy. His view that the human body cannot be polluted by a God and that the seat of the disease is actually the brain; was the first physiological perspective on epilepsy which still holds true even today i.e. twenty five centuries later (Temkin, 1971). The chapter ‘On the Sacred Disease’ is considered as one of the best written chapters amongst all of the Hippocratic writings and some even believe that it contains more accurate description of epilepsy than any other medical writings, up until the 19th century (Levin, 1971).

Hippocrates asserted that the brain was responsible for normal as well as abnormal psychological functions. Therefore the symptoms of epilepsy could be attributed to a function (or dysfunction) of brain activity.

He attributed seizures to an excess of phlegm that rushed into the blood vessels of the brain, filled the ventricles and created a build up of pressure which was released via a seizure (Temkin, 1971).
The supporters of Hippocratic medicine believed that epilepsy had a natural cause and tried to treat the disease using natural means (humoral pathology: the ancient physiological theory of fluids or humors as they were called). The treatment was based on dietetics, or a structured, "sensible" lifestyle. This dietetic therapy was based on three pillars: dietary regulations, the regulation of excretions, and physiotherapy. In addition to dietary regulations, medicines, which were mainly of herbal nature, played only a secondary role.
2.1d: Middle Ages

The medieval times were a stagnant era for the field of medicine. Few advances were made in the medical field as the etiology of most diseases was attributed to supernatural phenomena. It is during the middle ages that epilepsy became commonly known as the 'falling sickness' or 'falling evil', as these were terms used for all diseases in which the person suddenly fell (Haynes & Bennett, 1992). In this medieval period people with epilepsy were hunted as witches, and in the first half of the 17th century they were labelled as deviants and their marriage and reproduction were restricted by eugenic 

Methods of improving the quality of human race, especially by selective breeding (Collins Dictionary) 

Alongside the medieval Christian attempts to find a cure, various superstitious methods of treatment methods also changed and took the form of prayer, fasting, offering sacrifices, making pilgrimages or undergoing "exorcisms".
also developed e.g. spells, witchcraft, fetishism and the use of amulets. These methods continue to be used in some countries even today. So-called 'Fraisen utensils' played an important role, especially in south Germany (Temkin, 1971). 'Fraisen' was the name given to epileptic seizures in small children, e.g. febrile seizures ('fraisan' is an old gothic word meaning: to bring danger). People used the following items in an attempt to ward off seizures: Fraisenkette (a chain or necklace), Faisenpulver (a powder), Fraisenstein (a stone), Fraisenmünze (a coin), Fraisenuhrl (a clock). Nature therapy was also used to treat epilepsy during this era. During this period there was hardly a plant which was not used to treat the "falling sickness", as epilepsy was called.

The most important plants were: valerian, peony, mugwort, thorn-apple, common henbane, mistletoe, belladonna, foxglove, bitter orange and peruvian bark. During the Renaissance period the use of chemical substances were initiated to treat the "falling sickness". The most important of these were: copper (which had already been used by the Ancient Greeks), zinc oxide, silver nitrate, mercury, bismuth and tin.
2.1e: Renaissance

The field of medicine started coming out of the dark ages during the renaissance period. New facts about anatomy were being discovered and applied to diseases, including epilepsy. It was in the 18th century that the treatise of epilepsy or the falling sickness made a distinction between idiopathic and sympathetic or symptomatic epilepsy (Auguste & Tisot, 1771).

Idiopathic epilepsy was described as epilepsy caused mainly due to the inherent tendency to the disease. Symptomatic epilepsy was described as a symptom of a primary disease (e.g. brain tumour, metabolic disturbance or cerebral scarring after injury).

In spite of attributing natural causes as opposed to supernatural ones for seizure occurrence, the belief in demonic possession was slow to fade among both lay people and physicians. Epilepsy continued to be looked down upon and was considered to be complicated disease which was difficult to treat where
the person with epilepsy was socially stigmatised (Temkin, 1971).

2.1f: The Nineteenth and Twentieth Century

The process of making a distinction between epilepsy and lunacy or madness began in the nineteenth century. This was a consequence of the development of neurology as a new and independent discipline in the field of medicine. By the late 1800's, hundred's of articles were printed on the topic of epilepsy in journals such as 'Brain'. This research was aided by the progress made in the study of neurology over the previous centuries (Haymaker & Schiller, 1970). Research was initially conducted mainly on institutionalised patients and it was only in the nineteenth century that it was realised that institutionalised persons usually presented far worse symptoms than those not requiring hospitalisation. Therefore to obtain a true picture of epilepsy, research had to extend beyond the hospitalised patients (Temkin, 1971).

In spite of this new development epilepsy continued to be of interest mainly for psychiatrists throughout this century.
The French psychiatrists, Morel and Esquirol were influential in endorsing the view that most epileptic patients were mentally disturbed, and this was further perpetuated by famous English psychiatrists including Maudsley (Reynolds, 1987). Although the field of neurology pertaining to epilepsy was developing, a constant attempt was being made to keep epilepsy under the clutches of psychiatry. In the absence of overt seizures, new and obscure forms of epilepsy such as ‘masked’ epilepsy or the ‘epileptic equivalent’ were hypothesised (Berrios, 1984). In recent times these newer forms of epilepsy have been termed as ‘sub clinical’ and ‘sub ictal’ with the discovery of EEG. Contrary to the ancient times this terminology is accepted not only by psychiatrists but also by neurologists and neurophysiologists even today.

Terminology for various forms of epilepsy was getting clearer in the century. Louis Florentine Calmeil coined the term ‘absence’ to distinguish between brief mental confusions and epileptic seizures. Calmeil also introduced the term ‘status epilectus’ to describe uncontrollable series of seizures resulting in death (O’Leary & Goldring, 1976).
William Gowers in his 1881 classic, 'Epilepsy and Other Chronic Convulsive Diseases' gave a detailed description of the etiology, pathology, diagnosis, prognosis and treatment of epilepsy. An important aspect of epilepsy which was particularly highlighted by Gowers was that of the intellectual deterioration and deficits in memory and attention in people with epilepsy (Haynes & Bennett, 1992). Personality changes associated with epilepsy were also specified, particularly those of hypo sexuality, mania and bouts of rage.

It was in the latter half of the nineteenth century that Hughlings Jackson radically changed the perspective on epilepsy. He suggested that the word epilepsy should be redefined in neuro-physiological terminology as opposed to any other clinical terminology (Reynolds, 1987). He defined epilepsy as the name for occasional, sudden, excessive, rapid and local discharges of grey matter in the brain (Jackson, 1873). This definition of epilepsy was the first since ancient times that was based on the neuronal theory and therefore was the foundation of the existing modern understanding of epilepsy.
Jackson investigated the simplest form of seizures, the unilateral seizures and demonstrated that symptoms of seizures could start in the periphery and stiffen a limb and then generalise. These seizures till date are popularly known as 'jacksonian seizures' (Haynes & Bennett, 1992). Most importantly Jackson used clinical observation in his research as noted common personality changes in persons with epilepsy and therefore advocated an entirely new way of viewing epilepsy.

In the early twentieth century, in spite of the constant development of the neurological perspective of epilepsy, it was the psychiatrists view on the subject that still dominated the literature.

It was in this period that a specific kind of a personality started being associated with epilepsy where in an epileptic patient could be identified by his vulnerability to certain personality traits which were mostly unfavourable and anti social in nature (Guerrant et al., 1962). It was only later with the studies of Lennox in the 1930’s and 1940’s that the concept of ‘normalcy’ was associated with people suffering from epilepsy (Lennox & Lennox, 1960).
It is since the past three decades that the term 'epilepsy per se' has been finally removed from the national and international classifications of psychiatric illness and this is a consequence of the discovery of EEG and with better understanding of the neurological perspective of epilepsy (Hill, 1981).

Treatment practices in the second half of the nineteenth century were also no longer in the form of performing superstitious rituals, or forms of exorcisms or using strange plants or metals. As more and more facts about epilepsy were discovered, drugs were finally invented which did have an effect on epileptic seizures.

The first two substances which were proven to have an anti-epileptic effect and which are still used today, were bromine (first used in 1857) and phenobarbitone (first used in 1912). It is only in recent times that the detrimental side effects of these drugs have been studied and most neurologists have excluded these drugs from their line of treatment.
It has been mentioned time and again in the literature available that although majority of people with epilepsy are normal there is a significant percentage of people with active epilepsy who have severe disabling psychological problems (Pond, 1981). These can range from cognitive impairment and behavioural disorders to affective disorders such as depression and anxiety disorders.

It can be inferred from the literature mentioned above that although mental disturbance was associated with epilepsy since ancient Greek and Roman times; it was only in the latter half of the twentieth century that research focussed on the complex interplay of physiological and psychosocial factors which affect children, adolescents and adults with epilepsy in varying degrees.

These factors include different seizure types, the duration and severity of the epilepsy, the age of onset of the disorder and effect of medication. According to Trimble & Reynolds (1976) it was evident that very little emphasis had been given to the effect of antiepileptic medication and its metabolic consequences in the mid twentieth century.
It is also evident that there has been a remarkable growth in interest and study of the subject using newer methods of research techniques to quantify behaviour and sophisticated techniques for clinical, electrophysiological and pharmacological monitoring and brain imaging.

Literature suggests that the scientific study of epilepsy only commenced in the latter part of the twentieth century. With increased understanding of the origin and neuropathology of epilepsy much research since the mid 1950’s has been focussed on the cognitive, personality and psychosocial consequences of epilepsy. As a result psychologists and neuropsychologists have played an important role in the study, assessment and treatment of epilepsy.

2.2 History of Epilepsy: Indian Perspective

In India, the cultural diversity and staggered levels of its development in different regions has made epilepsy difficult to comprehend historically. Although it is common knowledge that exorcism to drive away the evil spirits, incantations, and herbal remedies are practiced for epilepsy control in various
parts of the country (Srinivas & Subbulakshmy, 2000).

In the Indian context, epilepsy finds a mention in the oldest forms of medicine i.e. Ayurveda. Ayurveda is based on the vedic philosophy of long healthy living, and emphasises on the prevention of sickness and disease rather than treatment. Epilepsy or rather its Indian equivalent has been referred to as 'Apasmar' and is mentioned in the ancient vedic and post vedic literature of Charaka and Sushruta around 1000 B.C. (Maheswari et al, 1999). The explanation of 'Apasmar' in these works of science and literature provided the basic understanding and description of Epilepsy in Ancient India.

The scholars, Charaka and Sushruta have also provided a detailed record of the symptomatology, classification and management of epilepsy or Apasmar. Amongst the four Veda's written, the Rig Veda (2000 B.C.) and the Atharva Veda (1000 B.C.) mention 'Apasmar' and attribute its genesis to various non-human forms like spirits, goblins, rakshasas (demons) etc which possess the human body. This description of epilepsy bares resemblance to that of
the Greek–Roman period where in the cause of epilepsy was attributed to supernatural phenomenon.

The English translation of the ancient literary work Charaka Samhita written in Sanskrit approximately 5000 years ago was done by Prof. Priyavarat Sharma in 1981. According to Charaka, epilepsy was described as follows:

‘Clinical experts pronounce that epilepsy is a disease syndrome characterised by derangements of the mind and memory. Therefore, victims of this disease experience disturbance or loss of consciousness and undergo all kinds of ugly scenes (convulsive movements).’ -Charaka, Chikitsa 10/3

It is interesting to note that according to the Susruta Samhita, there is a distinction made between seizures and fits where in seizures are known as Amanusopasarga and fits are described as Apasmar (Singhal & Patterson, 1993). As per this description when an individual has seizures, demons enter the body while remaining invisible as the rays of the sun.

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3 As mentioned in Prof. Sharma’s translation of the original Charaka Samhita
enter the sunstone and demons afflict people who are dirty, who do not keep the proper regime of life. When an individual has fits, there is loss of memory and it may lead to death. The causes of fits are abuse of the body or mind, suppression of the natural urges intercourse during menstruation, or preoccupation with sex, fear, anger or grief.

The descriptions are clear in indicating the fact that epilepsy whether in the form of fits or seizures were attributed to phenomena supernatural and physiological but other than that of function or dysfunction of the brain

Even where nomenclature is concerned, the evolution of epilepsy related terminology can be traced back to ancient India. Originally the word ‘Grand Mal’ was spelt ‘Grahn Mahl’ (quoted from Dorland’s illustrated medical dictionary). Grand Mal is still used to denote a major attack of epilepsy even in today. Researchers point out that it cannot be a mere co-incidence where in the Sanskrit word ‘Grahan Maha’ or ‘Maha Grahan’ literally also means a major attack (Murthy, 1999). Therefore it is reasonable to believe that the earlier scholars of
modern western medicine might have taken the work 'grand mal' from the Sanskrit terminology 'maha grahan'.

It is important to mention that Charaka Sushruta, the ancient Indian scholars had classified epileptic seizures into four major groups caused by vata, pita, kapha and sannipata thousands of years ago.

In Western literature a classification of this kind was done only in the later half of the 19th century. It was Hughlings Jackson who classified epilepsy into four sub groups i.e. grand mal, petit mal, psychomotor and Jacksonian sensory. Therefore we can conclude that there might have existed a correlation between ancient Indian wisdom and modern perceptions about the classification of epilepsy. However with the discovery of the electroencephalogram i.e. EEG and other scientific aids epilepsy in today's world has been categorised into several types and syndromes (Maheshwari et al, 1999).

Even as early as 800 B.C. Charaka proposed that epilepsy may be related to certain circulatory disturbances of the brain and Sushruta mentioned
other causative factors such as anxiety, mental trauma, apprehension and fear. It has been quoted that 'excessive indulgence of sex, anger, sorrow, fear, excitement and mental trauma are some of the causes of seizures in mankind'. A similar description of clinical manifestations of the epileptic attack is mentioned by Sushruta.

A description of grand mal epilepsy in the charaka samhita is as follows, 'a patient afflicted with Vata type of seizures perceives red or black images (visual aura or hallucinations) followed by convulsions, clenching of teeth, dribbling of froth and laboured breathing.

In ancient times treatment for epilepsy varied as per the type of epilepsy. According to Charaka Samhita, the causes of epilepsy are vata, pitta and kapha and the fourth one is sannipata which is rejectable. The wise physicians treat the curable ones cautiously with strong evacuative measures. According to the Ayurvedic medicine treatment should start very cautiously with hymns, religious ceremonies and offerings of garlands, food, garments, wine, flesh or blood according to the nature of the
demon (Singhal & Patterson, 1993). These have to be made on the day corresponding to the day of affliction and a proper place such as a temple, cross road, river bank, mansion, jungle or deserted house. Drugs during this period were used in the form of fumigation with animal skin or hair mixed with asafoetida and goats urine or plant extracts in various forms. Common plants used in Ayurveda as form of treatment are Brahmi (Indian pennywort), Satawari (Asparagus racemosus), Vaca (Sweet Flag), Mulethi (Glycyrrhiza alba), Agastya leaves (Sesabania grandiflora), Garlic, Ginger, Hing (Asafoetida), Pumpkin, Uncaria rhyncophylla and Gastrodia elata (Maheshwari et al, 1999).

In India people with epilepsy still opt for Ayurveda as a form of treatment. Common ayurvedic drugs that are in use are Ayush 56, Ayushman 13 and 14, and Dhanvantaram and Ayushman 18.

Some of these drugs have been scientifically studied and appear to be only marginally effective in uncontrolled epileptics (Maheshwari et al, 1993).
To summarise, throughout human history the true nature of epilepsy has been shrouded in ignorance. Western Literature from Biblical times or Greek and Roman civilisations have attributed epilepsy to supernatural phenomena.

Even the ancient Indian texts of Ayurveda, popular all over the world associate epilepsy with demonic possession therefore reiterating the supernatural phenomena. This stigmatisation exists even in our contemporary comprehension of epilepsy.

In spite of great advances in the medical field which broadens and objectifies our understanding of epilepsy; even today people believe that epilepsy is of a mystical origin.

As discussed in detail in the next chapter, ignorance surrounding epilepsy extends beyond just its aetiology. Even today people with epilepsy face discrimination from employers and insurance companies don’t entertain people with epilepsy, also entrance into military services is not encouraged, and even driving licenses are not issued if people disclose their status of having epilepsy irrespective of seizure
type; consequently restricting the person with epilepsy in his or her struggle to lead a normal life.