The Mystique of Brain Death

See “Why are we Poor Organ Donors: A Survey Focusing on Attitudes of the Lay Public From Northern India,” by Panwar R, Pal S, Dash NR, et al on page 81.

“No one wants to die. Even people who want to go to heaven don’t want to die to go there. And yet death is the destination we all share. No one has ever escaped it. And that is as it should be, because Death is very likely the single best invention of life.”¹ “Those who have the strength and the love to sit with the dying patient in the silence that goes beyond words will know that this moment is neither frightening nor painful but a peaceful cessation of the functioning of the body.”² “If you don’t know how to die, don’t worry. Nature will tell you what to do on the spot fully and adequately. She will do this job perfectly for you.”³

These three direct quotes give us the essence of death: certainty, loss of all bodily function and always perfect.

Death remained unquestioned until 1958, when Molaret et al.,⁴ in Paris, France published a paper describing a condition which comes after irreversible coma and before death and called it, Coma DE ‘passé. Not much attention was paid to this new condition, though the like minded noticed it. He had described brain death, which can come in few cases prior to cardiopulmonary arrest. It was only in 1968 that a Harvard group came out with criteria for brain death, which caught the public eye. Its significance cannot be understated. Brain death is very relevant to the process of organ donation and transplant and the timing could not be better as Christiaan Bernard had just surprised the world by doing first human to human heart transplant surgeries in South Africa in 1967. Heart transplant cannot be done with live donor. Death is a necessity, brain death being ideal.

Article in this issue by Pawar et al.⁵ addresses the important aspect of organ transplant: awareness about brain death. Cardiac Death can be recognized easily as there is cessation of all functions. No heart beat or spontaneous breathing effort during observation for at least for 3 min is considered enough to pronounce death in absence of hypothermia or toxicity.

Cause for brain death is usually quite apparent: severe head trauma, anoxic brain injury or acute toxicity account for the most. Though definition and procedure to follow

may vary in different regions, generally accepted guidelines are used here.

After cerebral cortex and brain stem stops functioning, cardiopulmonary system can still function for minutes to a couple of days, giving a window for organ harvest. After brain death, the body can be medically maintained to continue perfusion and keep the organs safe and viable for transplant.⁶ It is of critical importance that a person is dead before organs are harvested instead of organ harvest leading to death⁷; hence, in most of the jurisdictions, two well-trained neurologists, not involved with the care of the person being evaluated for brain death nor with the transplant process, are required to complete the physical examination, repeating in 24 h in doubtful cases and certify brain death. In addition to the physical examination, head tilt and cold caloric testing should be checked. Head tilt normally causes eyes to move towards the tilt, in vegetative state eyes move opposite to head tilt giving it a name Dolls eye. In person with brain death, no movement of eyes is noted with head tilt. In cold caloric testing, normal brain will have slow phase towards the cold water and fast return to medial, and in brain death, there are no eye movements. EEG recording done for 30 min shows flat line, and PET scanning and angiography confirm no circulation in the brain.

The article in this issue by Pawar et al.⁵ answers the question that low awareness is the important reason for low rate of organ donation. True, we are having difficulty-understanding brain death. Death, which used to be a black and white affair in which anyone could tell when death had swallowed their loved one, has now turned into controversies even for trained neurologists. When you look at a brain dead person, he appears to be sleeping. How can a relative believe in death when there are all the signs of life except consciousness?

When the news of a brain death is given, followed by the request for organ donation, it makes it even more suspicious. In the United States, there is a rule that a doctor who participated in taking care of the patient at the time of their death cannot be part of the transplant team in any capacity. In general, the transplant team is not looking for a 90-year-old man with brain death as a candidate but instead for someone much younger for the quality of organs. In this case, it does not have to do with education of the family but the youth of the person that they do not want to talk about death. Most of the time, parents may have discussed organ donation at their own death, but not for the children. The accidental death of a young person is heart wrenching for the loved ones and the additional burden of the complex decision of altruistic organ donation is unexpected and definitely not a priority.

I am in agreement with Dr. Robert Truog that dead donor rule should be applied and no one should be

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withdrawing life support for the purpose of organ donation.⁸ If the family understands the irreversible nature of the brain damage and wants to donate, it should be done while they are still on mechanical support. I commend the effort of Pawar et al.⁵ published in this issue to increase awareness of this issue in the general public.

If Mrs. SH comes to the hospital with severe headache and collapses into coma before any of the doctor can see her, and family is clear that she would not want resuscitation, she meets the criteria for suspected brain death with hemodynamic instability, requiring mechanical support to maintain bodily functions, emergency department physician follow request for DNR (do not resuscitate) or put her on machines till decision for organ donation is made? Autonomy, non-maleficence against altruism, utilitarian principles of distribution, and beneficence.⁸

Edgar Allen Poe summarized the dilemma of Brain Death when he wrote:

*The boundaries which divide Life from Death are at best shadowy and vague. Who shall say where the one ends and where the other begins?*⁹

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