Cochlear Implant – An Answer to Deafness

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Hearing disability is a problem that segregates a person from the surrounding world. But with development in science and technology, a hearing impaired person can look forward to restore his sound by Cochlear Implant. ***DA BUREAU*** *gives the detailed analysis of the surgery.*

Sonali (name changed) will turn one in a month's time. But she is not like other 1-year olds; she is born as a special child. She was born deaf in both ears and her shortcoming was detected when she was three months old. But after knowing about Sonali's hearing impairment, her parents did not lose heart and instead decided to get her treated with Cochlear Implant.

Now, three months after the treatment, Sonali responds to the sounds. She even speaks and calls out her parents, who feel delighted after seeing their daughter playing with the sound. Sonali is actually one of those few lucky children whose problem has been corrected at an early age. After the Cochlear Implant, she is likely to develop as much language skills as any other normal child would.

Not many people know about the wonders that this treatment called "Cochlear Implant" can do. For all those who suffer from hearing impairment, hearing aids are available, but not many get benefited from these sound amplification devices. And, for such people, Cochlear Implant acts as a boon.

Hearing disability is a common problem among Indian children. At least 1 to 4 out of every 1000 births, are born with hearing loss. However, if this problem can be detected at an early stage, the cure becomes much easier, with 100 per cent results. Dr. Ameet Kishore, Senior Consultant Surgeon, ENT Department at the Indraprastha Apollo Hospitals says, "If detected early, ideally below the age of one year, the child overcomes the disability and acquires speech and language rapidly, bridging the gap with normal peers by three years".

The doctor describes that early treatment is necessary because of "Neutral Plasticity". This term denotes that a child's young brain has the ability of acquiring new skills and information at early childhood or infancy. However, this "Neutral Plasticity" gets reduced as the child gets older. Thus the critical period for speech

development is from birth to three-to-four years. This period is also known as “Early Intervention”. Any disability – whether auditory, visual or physical -- has better chances of getting corrected if intervention to rectify it is adopted at the earliest.

Early intervention requires an even earlier detection and diagnosis, ideally within a few days of birth. “A child of 3 years would have better chances of getting benefited from a Cochlear Implant, than a child of 8 or 9 years”, comments Dr. Kishore on early identification and treatment.

Cochlear Implants represent a successful human attempt at restoring the lost special sense. As per the facts over 99 per cent of the children who are born deaf (even totally deaf) have functioning hearing nerves. It is the inner ear, or “cochlea” which is damaged. Thus, when the damaged cochlea is bypassed by the implant and the intact neurons are stimulated, hearing can be restored.

Doctors make sure that thorough medical and audio-logical evaluations are done to ensure suitable candidacy. The surgery itself lasts for about three hours with subsequent hospitalization for three days. The processor is switched on and tuned three weeks later. This tuning process needs to be repeated for better results of surgery.

But the surgery is not an easy task, as the word surgery and implants scare people especially parents of small children. “Unfortunately once a child is diagnosed to be profoundly deaf, the immediate and anticipated reaction of the parents and immediate family is that of denial. Doctors or audiologists need to counsel and help them cope with the situation and encourage them to look forward to solutions to overcome the problem”, says Dr. Kishore describing the need for counseling.

The chances of acceptance are higher when the parents are told that they have excellent options for their hearing impaired child. “And if the family accepts the handicap, half the battle is over”, Dr. Kishore adds.

Once the ailment is diagnosed, the first solution given to the patient is to provide him with a hearing aid. While a child is using hearing aid, his parents are introduced to speech therapy, counseling and the need for undergoing a surgery like Cochlear Implant.

After the surgery is over, the next step is that of rehabilitation, which actually decides the success rate of the treatment. In other words, the positive result is determined by the time and effort that is put into rehabilitation after the implantation.

Rehabilitation is an essential part for those who have undergone Cochlear Implant. Doctors suggest that all the Cochlear Implant centres should have a well developed rehabilitation centre.

“Rehabilitation plays a very important role after the surgery takes place. I believe that without this, the surgery is incomplete”, says Dr. Kishore. In this case, all the patients need “Auditory Verbal Therapy” (AVT) which is different from the traditional oral rehabilitation. In Auditory Verbal Therapy, the emphasis is laid on making the child listen and speak normally, rather than on lip reading and visual cues.

Doctors and experts stress that parents are often advised to speak to those parents and children who have undergone the surgery. According to the experts, first hand experience always acts in the right direction as the parents are convinced of the positive results of the implants.

Experts believe that learning to listen takes time and requires concerted efforts from the patient, the family and the person providing habilitation services. Doctors emphasize on the fact that careful listening and reflective responses used in conjunction with information presented sensitively act as the best counseling tools.

Much research and development has gone on over the past few decades to ensure that Cochlear implantation and the subsequent rehabilitation procedures yield maximum benefit to the recipient.