Real-time Japanese Telecaptioning System using Two Stenographic Systems

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We developed Real-time Japanese Telecaptioning system using two stenographic systems and superimposer. These systems are connected with TV conference system, which makes it possible to input speeches of speakers from a long distance through ISDN telephone network. The outline of the system flow is as follows. (1) The operator (A) who is a long distance from the conference place inputs words on real-time with the keyboard, listening the voices of remote speakers, through TV conference system and ISDN. (2) The inputted words are sent to keyboard port of the INPUT-PC and the CORRECT-PC, through a proofreader processor, and then are converted form Kana to Kanji in each PC. (3) Another operator (B) who is in charge of correcting the words firstly checks wrong or omitted letters in the sentences with the function of Kana-Kanji conversion in the CORRECT-PC, and the checks if they should be changed or not. (a) In the case of no correction The CORRECT-PC sends the sentences, which have been converted into Kanji, from RS-232C port to TV conference system as word codes and then to the conference place through ISDN. (b) In the case of corrections The operator (B) corrects the errors of wrong or omitted letters, pressing 'delimiter' key. The corrected words are sent from RS-232C port to TV conference system as word codes and then to the conference place through ISDN. We report on the functions of this system and the results (dependence on caption, speed of speech and rate of accuracy, etc).

Pre-Operative Hearing Assessment in Young Cochlear Implant Candidates

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Early implantation of congenitally deaf candidates is now a goal of most cochlear implant clinics. This objective can only be achieved through the use of audiological tests that are able to identify and quantify hearing loss in infancy. Behavioural conditioning techniques provide the most accurate indication of hearing acuity in older subjects, but these procedures are unreliable in young (<6 months) or developmentally delayed children. This paper investigates the degree of accuracy with which two electrophysiological test techniques (click-ABR & steady-state evoked potential [SSEP]) can be used to assess auditory function in infants with significant hearing loss. ABR and SSEP findings from 108 children were compared with hearing levels obtained behaviourally. The results suggest that each of these procedures has strengths and weaknesses as a means of assessing young cochlear implant candidates. The SSEP technique was able to provide accurate, objective estimates of the behavioural audiogram in each of the children with cochlear hearing loss (105 of the 108 subjects). This test was however unable to identify the three cases with retro-cochlear abnormality (auditory neuropathy). The click-ABR procedure on the other hand with it's broadband stimulus and presentation level restrictions (±100 dBnHL), could not quantify the sensorineural losses in the severe/profound range, but was able to identify the neuropathy patients. Overall, our results indicate that the SSEP and ABR techniques when used in combination, can provide important safeguards in the paediatric selection process, potentially identifying those children whose hearing is better than suggested by behavioural test results, and those children whose hearing deficit may be due to retro-cochlear rather than cochlear dysfunction.

The Management of Auditory Neuropathy

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Auditory neuropathy is a new term for retrocochlear problems which affect the auditory pathway and central auditory processing mechanism. The presence of an auditory neuropathy may adversely affect the performance after cochlear implantation. Auditory neuropathy can be classified into four main categories: loss of spiral ganglion cells, loss of cochlear nerve, auditory brainstem dysfunction, and problems with central auditory processing. Loss of spiral ganglion cells can be suspected by undertaking preoperative electrical tests such as electrocochleography and electric auditory brainstem responses (EABR). Confirmation is obtained after surgery by implant EABR and possibly by neural response telemetry (NRT). Loss of Eight nerve is suspected after MRI examination and confirmed by EABR. Brainstem dysfunction is suspected from EABBR recordings but seems uncommon. Lack of central auditory processing development is a major problem for congenitally deaf candidates who are older and have lost the neural plasticity needed to develop the mechanisms. Subjects with auditory neuropathies may benefit from cochlear implantation if the surgery is performed at a very young age.
OR18A

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PAPER SESSION 19

OR19.1

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OR19.2

Assessment of Young Cochlear Implant Candidates

Gerry O'Donoghue

The University of Sydney, Australia

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