Complications common, often linked to trauma in children receiving cochlear implants

January 18 2010

Some complications may occur in children receiving cochlear implants, and are highly correlated with trauma to the ear area and inner ear malformation, according to a report in the January issue of *Archives of Otolaryngology-Head & Neck Surgery*.

Cochlear implants are electronic devices that can help provide a sense of sound to individuals who are deaf or severely hearing-impaired. "The success of cochlear implantation as an auditory rehabilitative tool requires a thorough knowledge of indications, limitations and potential risks," the authors write as background information in the article. "Since 1990, the number of pediatric cochlear implants has increased significantly, and more specific pediatric evaluation of the medical and surgical risks can be collected."

Natalie Loundon, M.D., and colleagues at Hôpital d'Enfants Armand-Trousseau, Paris, studied 434 patients who underwent cochlear implantation at one facility between 1990 and 2008. All patients were younger than 16 at the time of operation (average age 4.7 years), 41 (9.4 percent) were younger than 24 months and 43 (9.9 percent) had inner ear malformations. They were followed up for an average of 5.5 years, with complications tracked and classified as early (zero to eight days) or delayed (more than eight days after surgery), and major (requiring a new admission and/or extended hospital stay) or minor.

A total of 43 patients (9.9 percent) experienced complications during the follow-up period. Of these, 28 (65.1 percent) were delayed, with an average delay of 2.2 years. Thirteen of the 43 patients (30.2 percent) underwent re-implantation as a result of their complications.

Twenty-four (5.5 percent) of the patients had major complications, including severe infections (15 cases), displacement of the magnet (three cases), meningitis (two cases), skin cyst in the middle ear (two cases), cerebrospinal fluid leak (one case) and misplacement of the electrode (one case). Nineteen (4.4 percent) of the participants had minor complications, including vertigo (nine patients), soft-tissue infections (five patients), persistent inflammation of the middle ear (four patients) and facial paralysis (one patient).

"Trauma to the mastoid [bony projection behind the ear] area (14 patients) and inner ear malformations (51) were highly correlated with major delayed complications and early minor complications, respectively," the authors write. "Young age at cochlear implantation was not correlated with any type of complication."

The findings show that complications associated with cochlear implants are not rare and can often be delayed, they note. "The finding of complications several years after surgery highlights the need for long-term medical follow-up in this population and the importance of repeatedly providing information to the patients and their family," they conclude. "The specific features of pediatric cochlear implantation warrant a specialized, experienced care center."

More information: Arch Otolaryngol Head Neck Surg. 2010;136[1]:12-15.