00264

NEURO-OTOLOGY

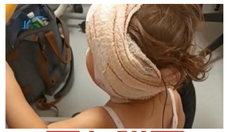
Cochlear implantation is suitable for outpatient surgery in children of all ages, even infants

F. Micaletti[1], M. Schleich[1], L. Boullaud[1], S. Pondaven-Letourmy[1, 2], E. Lescanne [1,2,3]

[1]ENT dept, CHU de Tours, 2 boulevard Tonnellé, 37044 Tours, France ; [2] Pediatric ENT dept, CHU de Tours, 49, boulevard Béranger, 37000 Tours, France ; [3]Faculty of Medicine, University of Tours, 10 boulevard Tonnellé, 37044 Tours, France.

Background

Up to date, the validated strategy for hearing rehabilitation of children with severe to profound bilateral sensorineural hearing loss is cochlear implantation (CI). CI has transformed developmental outcomes, providing access to spoken language for most children who receive implants early in life [1]. Day-surgery unit shortens the surgical stay to less than 12 hours, without overnight stay. It is a modern organization of surgical care, with reduced costs, supported by healthcare systems. The organization of the stay remains a controversial subject for this major ear surgery [2,3].



Objective

- **To evaluate the feasibility of cochlear implantation as day-surgery in children and to identify variables influencing admission, readmission and unplanned postoperative consultation.**

Materiels & Methods

Cochlear implantation procedures <16 years → *between January 2017 and July 2022*
106 cases

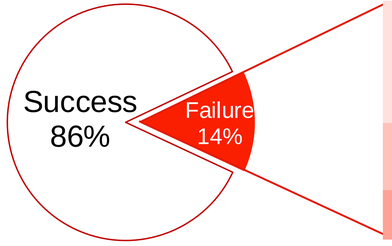
EXCLUSION
Day-surgery contralateral CI surgery: 30
Planned stay in a pediatric ENT hospital: 6
- Bilateral simultaneous CI: 3
- Comorbidities incompatible with day-surgery: 2
- Inappropriate geographical distance: 1

Explantations-reimplantations: 4

ANALYSIS
N = 66
Day-surgery cochlear implants in primary hospitalization

Results

Day-surgery sucess



Late awakening : 6 %

Non-controled pain : 4,5 %

Postoperative nausea and vomiting (PONV) : 3,5%

Results

No variables influencing admission

- Anesthetic agents
  - Propofol (p=0.706)
  - Sevoflurane (p >0.99)
  - Remifentanil (p >0.99)
- Antiemetic with ondansetron (p=0.998)
- Time spent in operating room (p=0.559)
- Analgesic agents
  - Paracetamol (p=0.996)
  - Ibuprofen (p=0.998)
  - Ketamine (p=0.602)
  - Morphine (p >0.99)
- Age
  - < 1 year (p=0.334)
  - < 3 years (p=0.162)

Rehospitalized

0 child

Early unplanned consultations

3%

- 1 child : vertex edema
- 1 child : uncomplicated otorrhea

Discussion

- All immediate or remote complications were benign.
- The failure rate was slightly higher than in the literature, but none of the studies considered late awakening as a cause of day-surgery failure.
- All infants <12 months had a successful day-surgery (n=10).
- PONV prophylaxis remains essential.

ND: No data

Author, date	Number	Age < 12 months	Average anesthesia time	Day-surgery success, n (%)	Conversion to hospitalization, n (%)	Reconsultation, n (%)	Readmission, n (%)
Powell et al. (2009)	7	0	160	7 (100)	0 (0)	ND	ND
Liu et al. (2000)	53	0	ND	51 (96)	2 (4)	0 (0)	0 (0)
Stephens et al. (2010)	21	0	ND	20 (95)	1 (5)	0 (0)	0 (0)
Sivam et al. (2017)	579	ND	ND	573 (99)	6 (1)	ND	ND
Roxbury et al. (2015)	464	ND	ND	ND	ND	12 (2,6)	3 (0,6)
Patel et al. (2018)	2436	ND	197	ND	ND	ND	66 (2,7)
Hugel et al. (2022)	190	ND	140	181 (95,3)	9 (4,7)	9 (4,7)	5 (2,6)
Boullaud et al. (2022)	47	6	ND	40 (85)	7 (15)	1 (0,2)	0 (0)
Present series	**67**	**10**	**143**	**57 (86)**	**9 (14)**	**2 (3)**	**0 (0)**

Conclusion

- **This study suggests that CI procedure is suitable for day-surgery at any age, even in infants.**
- **The risk of failure is low and not influenced by anesthetic agents, duration of anesthesia or age.**

References

[1] Papsin BC, Gordon KA. Cochlear implants for children with severe-to-profound hearing loss. N Engl J Med. 2007;357(23):2380-7.
[2] Liu JH, Roland PS, Waller MA. Outpatient cochlear implantation in the pediatric population. Otolaryngol Head Neck Surg. 2000;122:19-22.
[3] Boullaud L, Amelot A, Aussedat C, Pondaven S, Lescanne E. Safety of middle-ear day-surgery in children: A STROBE observational study. Eur Ann Otorhinolaryngol Head Neck Dis. 2022;139(5):255-259.

université de TOURS | Faculté de médecine

CHRU HÔPITAUX DE TOURS

← Scan me (QR-code publication IJPO)

WCA 19-22 September 2024 Paris, France CNIT Paris La Défense