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Technical note

Childhood psychogenic hearing loss: Identification and diagnosis

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ABSTRACT

Psychogenic hearing loss, formerly known as functional or non-organic hearing loss, is a classic cause of consultation in infantile audiology. Risk factors include female gender, and age 8 or 12 years. Onset is relatively sudden, without impact on schooling or voice quality. Audiometric signs comprise non-superimposable audiometric thresholds (variable audiometric results), bilaterality, flat mean audiometric curve, and discrepancy between pure-tone and speech audiometry. The child needs reassuring during audiometric examination: attention–diversion techniques may be effective. Objective audiometry allows positive diagnosis, followed by rehabilitation and psychological care.

1. Introduction

Childhood psychogenic hearing loss (PHL) is a well known cause of consultation for infantile audiologists yet little described in the literature. It is sometimes known as functional or non-organic hearing loss. It is important to be able to identify it, so as to avoid over-medicalization and misleading diagnosis for the child and the care team.

Epidemiological data are sparse; according to the literature, PHL represents 1–3% of sudden-onset childhood hearing loss [1]. A retrospective analysis performed at the Necker Hospital Jul (Paris, France) estimated prevalence at 1% of reasons for consulting in audiology. There are 2 age groups at onset: 8–9 and 12 years.

The typical patient is female, of normal or above-average intelligence, anxious, and self-demanding. Psychologically, 3 mechanisms are implicated [2]:

1. hysteric conversion in a context of severe psychological disorder, with impact on schooling and psycho-affective life;
2. factitious disorder with beneficial side-effects: this is involuntary and often involves a trigger; schooling and social life may be affected;
3. simulation, which is intentional and aimed at attracting attention, with little impact on schooling.

In children, the context and mechanism of PHL differs from the simulation classically described in adults, not being the result of an implicit voluntary strategy.

2. Technique, tips and tricks

2.1. Consultation setting

Origin of and reasons for consultation vary: control visit after screening at school, self-reported sensation of hypoacusis, or check-up on parents' request after perceptual problems have been found at home. Paradoxically, there is generally no impact at school. The child may already be followed for hearing loss, and may sometimes already have a hearing aid.

Associated symptoms are those exceptionally associated with childhood hearing loss: tinnitus, sensation of hypoacusis, otalgia [3].

Some elements raise a suspicion of PHL even before auditory testing. In the preliminary interview, the child is able to answer questions delivered in a soft voice, without lip reading. The child's voice is normal, not deformed. It is easy to "test" the child by asking a few everyday questions softly during tympanic microscopy, when his or her head is turned away. It is obviously important to know and understand the personal, familial and school context.

2.2. Performance of the audiometric examination

2.2.1. Behavioral audiometric examination

The procedure for audiometric examination is conditioned by the patient's age. As PHL does not affect under-5 year-olds, the technique is identical to that used in adults.

In pure-tone audiometry, certain elements raise suspicion of PHL: non-reproducible hearing thresholds at a given frequency, flat audiometric curve and at least one degree of discrepancy in hearing loss between the two ears (Fig. 1a).

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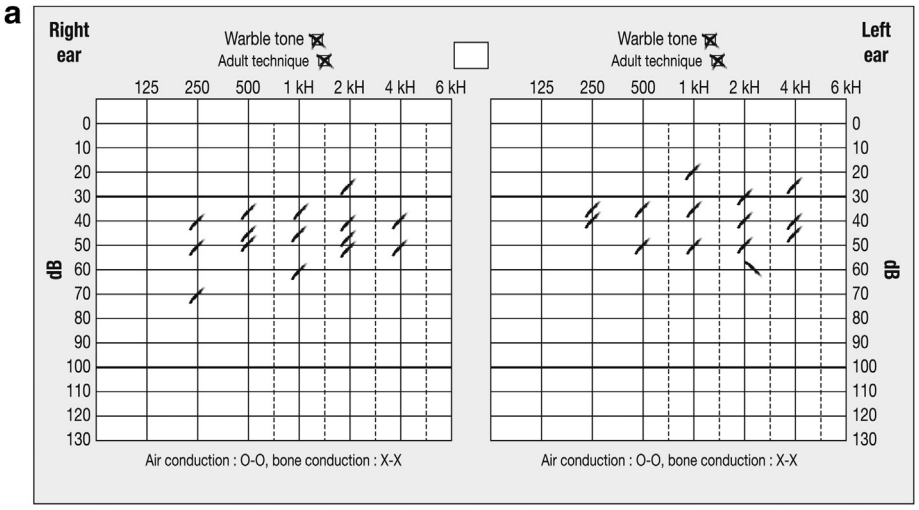

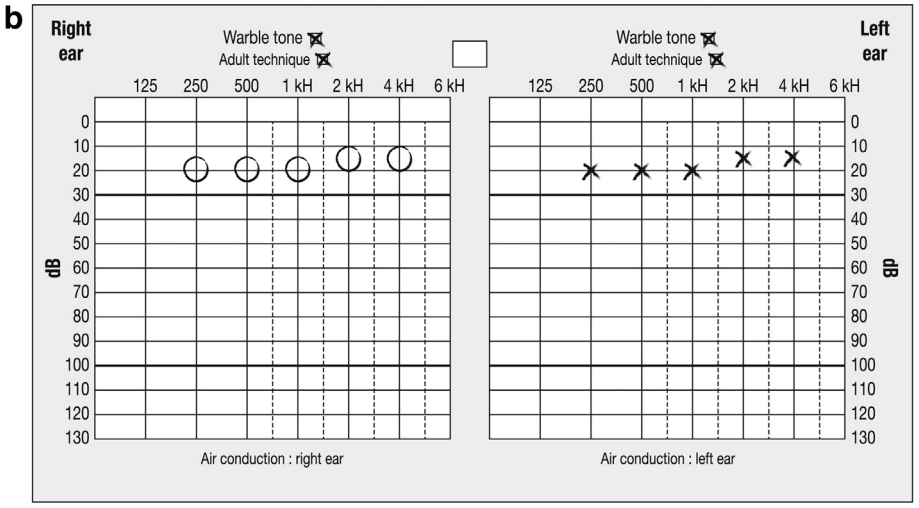

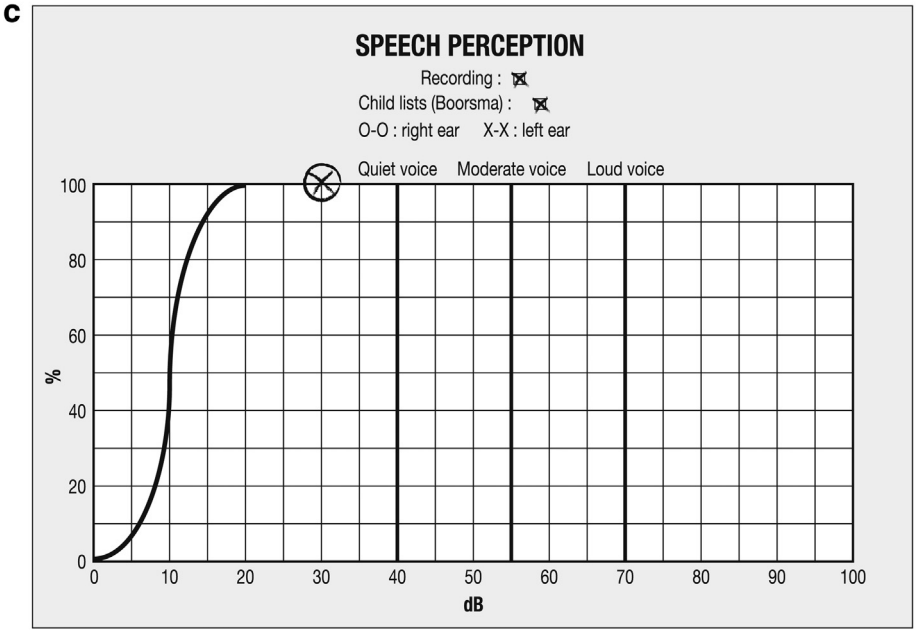

Fig. 1. Example of audiometric assessment in psychogenic hearing loss. (a) Example of audiogram: 1. Impossible to obtain reliable thresholds on pure-tone audiometry; (b) audiogram normalized after normal objective test and reassurance. Pure-tone hearing threshold >20 dB on both sides; (c) speech threshold: 100% intelligibility at 30 dB on both sides. Speech audiometry using children's word list on CD, via headphones, in separate ears. Speech reception is discordant with pure-tone audiometry. Legend: circles: right ear; crosses: left ear.

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