PROGNOSIS

Middle ear disease was associated with some behaviour problems at 5 and 10 years of age


Question
In young children, is middle ear disease associated with subsequent behaviour and cognitive problems? Middle ear disease was defined in 2 ways: parental reports of purulent (non-wax) ear discharge and suspected hearing loss.

Design
Cohort study with 10 years of follow up.

Setting
United Kingdom.

Participants
The original study included > 13 000 children born in the United Kingdom during the week of 5–11 April 1970. Children were assessed at birth and at 5, 10, 16, and 21 years of age. Approximately 9000 children were available for follow up at 10 years. Parental reports at 5 and 10 years indicated that 11.5% of the children had had ear discharge and 8.4% had had suspected hearing difficulty.

Main results
At 10 years, teacher reported antisocial behaviour was associated with hearing difficulty (OR = 1.40, 95% CI: 1.14 to 1.72). Poor conduct was associated with hearing difficulty (OR = 1.36, 95% CI: 1.12 to 1.67). Speech articulation was associated with ear discharge (p = 0.048) and hearing difficulty (p = 0.004). Children with hearing difficulties had lower verbal (p < 0.05) and non-verbal (p = 0.01) test scores at 5 years. At 10 years, children with ear discharge had lower language skills scores (p = 0.01).

Conclusion
Children with previous middle ear disease had subsequent parent and teacher reported behaviour and cognition problems.

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Commentary

Bennett and Haggard analysed data from the 1970 British Birth Cohort, a multipurpose longitudinal study designed to investigate educational, physical, and social development. The study has several strengths. The sample size is much larger than other studies that have examined the effects of middle ear disease.

Outcomes were measured using standardised behaviour rating scales, parents reported antisocial, neurotic, hyperactive, and poor conduct behaviour at 5 years. Parents and teachers reported antisocial and neurotic behaviour, inattentiveness, and clumsiness at 10 years. Teachers also reported speech articulation.

The study highlights the importance of treating acute otitis media in children. In addition, the value of early recognition of behavioural and cognitive problems cannot be underestimated, because early recognition can lead to early treatment, which may help to alleviate long term problems.

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