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ORIGINAL ARTICLE

Water protection after tympanostomy (Shepard) tubes does not decrease otorrhea incidence – retrospective cohort study☆

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KEYWORDS
Otitis media with effusion;
Serous otitis media;
Glue ear;
Tympanostomy

Abstract
Introduction: Myringotomy for tube insertion is the most common otologic surgery. Otorrhea is a frequent complication of this procedure and, to prevent it, most surgeons strongly recommend avoiding contact with water as this is thought to adversely impact on post-operative quality of life.
Objective: To understand the benefit of this recommendation.
Methods: Observational study – retrospective cohort study comparing the incidence of post-operative otorrhea and its impact on patients' quality of life, in two groups of patients comprising children under 10 years of age who underwent bilateral myringotomy and tube placement for chronic otitis media with effusion between May 2011 and May 2012. One group received water protection care after surgery, the other did not. Data was collected through telephonic interview, after one year of follow up (one year after the procedure). Water exposure without protection was considered the exposure event. Incidence of otorrhea and perceived impact on quality of life were the outcome measures. Results were compared after logistic regression.
Results: We included 143 children: 116 were not exposed to water without protection and 27 were exposed. In the not exposed group 36.2% had at least one episode of otorrhea, compared to 40.0% of the exposed group. Odds ratio for otorrhea on exposed was 1.21 (95% CI 0.51–2.85, $p = 0.6$). Negative impact on quality of life was reported by parents of 48.2% on the not exposed children, compared to 40.7% on the exposed group. This difference was not significant ($p = 0.5$).

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Conclusion: We found that recommending water protection did not have beneficial effect on the incidence of otorrhea after myringotomy with tubes on chronic otitis media with effusion. However, such measures did not appear to have a negative impact on quality of life. This is a populational observational study with few cases (143 cases); these final statements would be better stated by a very large populational study with another large control group.

PALAVRAS-CHAVE
Otite média com efusão;
Otite média serosa;
Tubos de ventilação;
Timpanostomia

Proteção contra a água após colocação de tubos de ventilação (Shepard) não diminui a incidência de otorreia – estudo retrospectivo de coorte

Resumo
Introdução: A miringotomia para inserção de tubo de ventilação é a cirurgia otológica mais comum. Otorreia é uma complicação frequente deste procedimento e, para evita-la, a maioria dos cirurgiões recomenda evitar o contato com a água, pois acredita-se que isso possa afetar negativamente a qualidade de vida pós-operatória.
Objetivo: Verificar o benefício dessa recomendação.
Método: Estudo observacional - estudo de coorte retrospectivo, comparando a incidência de otorreia pós-operatória e seu impacto na qualidade de vida dos pacientes, em dois grupos de pacientes com crianças menores de 10 anos submetidas à miringotomia bilateral e colocação de tubo de ventilação para o tratamento de otite média crônica com efusão, entre maio de 2011 e maio de 2012. Um grupo recebeu cuidados de proteção contra a água após a cirurgia, o outro não. Os dados foram coletados através de entrevista telefônica, após um ano de seguimento (um ano após o procedimento). A exposição à água sem proteção foi considerada o evento de exposição. A incidência de otorreia e o impacto percebido na qualidade de vida foram as medidas de resultado. Os resultados foram comparados após a regressão logística.
Resultados: Incluímos 143 crianças: 116 não foram expostas à água sem proteção e 27 foram expostas. No grupo não exposto, 36,2% apresentaram pelo menos um episódio de otorreia, em comparação com 40,0% do grupo exposto. A razão de chances (*odds ratio*) para otorreia no grupo exposto foi de 1,21 (IC 95%: 0,51-2,85, $p = 0,6$). O impacto negativo na qualidade de vida foi relatado pelos pais de 48,2% nas crianças não expostas, em comparação com 40,7% no grupo exposto. Essa diferença não foi significante ($p = 0,5$).
Conclusão: Não verificamos um efeito benéfico sobre a incidência de otorreia ao recomendar a proteção contra a água após colocação de tubos de ventilação para otite média com efusão. Entretanto, tais medidas não parecem ter tido um impacto negativo na qualidade de vida.

Introduction

Otorrhea (ear drainage) is the most frequent complication of myringotomy with tympanostomy tube insertion, with an incidence of 30–83%.[1–3] Upper respiratory tract infections are the single most common risk factor for otorrhea in children with tympanostomy tubes.[2,3]

Water passing through the eardrum to the middle ear causes acute mucosal inflammation.[4,5] This has traditionally led surgeons to advise against exposure to water following insertion of tympanostomy tubes. Most surgeons prescribe ear plugs in situations where there is a risk of exposure to water, such as showering, bathing, or swimming, and some would even forbid swimming or going to the beach[1,4] to minimize the risk of post-operative middle ear inflammation.

These cases can have an impact on quality of life, not only for the children who must carry plugs and bands, or even be prevented from swimming, but also for parents and carers who must enforce these restrictions. To our knowledge this impact has not yet been assessed.

Most general practitioners and many otolaryngologists (53%) continue to recommend restricted contact with water.[1] In 2013, we surveyed all the Hospitals in greater Lisbon, Portugal, and found that in all of them patients were advised to avoid contact with water following tympanostomy tube placement (this survey was published in the Portuguese Otolaryngology Society Meeting in 2014).

However, there is growing evidence in recently published epidemiological studies, that water does not cross tympanostomy tubes unless under significant pressure (corresponding to diving deeper than 60 cm in water).[2,5,6] However, most of these studies present multiple limitations and confounding factors, with only one randomized controlled trial (RCT) presenting grade B evidence,[3] and the remaining few being observational studies. This RCT concludes there is evidence of some statistically significant benefits