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Epidemiology of pressure regulation. Incidence of ventilation tube treatments and its preliminary correlation to subsequent ear surgery

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Purpose: Treatment with ventilation tubes (VT) in secretory otitis media and related conditions is a very common procedure based on the rationale of equilibrating the middle ear pres-sure (MEP) with ambient. Repeated VT treatments are also common in more severe cases, which associated with chronic otitis media and an increased the risk of permanent perforation of the tympanic membrane. The purpose of the present study was to described the current incidence VT treatments in children (<15 years) during 2000 to 2005 in a Danish County, and to analyse the number of these children later admitted to a tertiary hospital setting for subse-quent reconstructive ear surgery.

Materials and Methods: Database information was achieved from the County Health Authorities with information on all VT treatments in children in primary otological practices for the period. Cross reference of this information for year 2000 was made with our database on ear surgery for the identification of patients, who subsequently had been referred for surgery at our department.

Results: During the period of 2000 to 2005 the number of VT insertions was constant around 6000 per year corresponding to an incidence rate of 1200 per 100,000 inhabitants per year. One or more repeated VT's were found in 32 % of the children. The majority of children were 1-2 years old (37 %) with a minor predominance of boys (ratio 1.3). A total of 3218 children were treated with one or more VT's in 2000 corresponding to a prevalence of 3.5 %; in the following observation period 42 of these were identified in our department, where the major-ity had surgery in 2004 (31 %) and 2005 (19 %). A total of 45 surgical procedures were per-formed in these children: 38 myringoplasties (84 %), 4 tympanoplasty type II (10 %), 2 tym-panoplasty type III (4 %), and 1 mastoidectomy (2 %); cholesteatoma was found in 8 cases (18 %).

Conclusions: The occurrence of VT treatments was stable in the period of 2000 to 2005 with a prevalence of 3.5 % of children. In ⅓ of the children ≥2 VT were inserted. During our lim-ited period of 5 year follow up only few children (1.3 %) were submitted for ear surgery; the majority of children had simple myringoplasties performed (84 %) explained by the risk of permanent perforation, whereas more severe cases with structural damages consisted of 16 %. The numbers of children submitted for reconstructive surgery are low estimates of the epide-miological weight and clinical significance of MEP regulation, since our preliminary period of observation is short to this point.