



Computer assisted pulse oximetry for detecting children with obstructive sleep apnea syndrome

J. Vavrina

*Department of Otorhinolaryngology, Head and Neck Surgery, Kantonsspital 6000 Luzern,
Switzerland*

Received 26 January 1995; revision received 27 March 1995; accepted 1 April 1995

Abstract

A prospective study was carried out on 110 children undergoing tonsillectomy or adenotonsillectomy to evaluate the usefulness of computer assisted pulse oximetry (POM) as a screening tool for nocturnal obstructive sleep apnea episodes. Twenty-one healthy age-matched children served as a control group. A self-designed software (CAPO version 1.0) was used to analyse collected oximetric data. Pre-operatively up to 25% of children showed a characteristic pattern of repeated oxygen desaturations related to partial or complete airway obstruction, which was not seen in the matched group. Thirty-one percent had an oxygen desaturation index (ODI) of more than 2 phases/h, being significantly higher than in the matched group. These children could not be identified from history or clinical examination with an acceptable sensitivity. A second monitoring has been performed in 32 patients 5 days after surgery. The nocturnal cyclic oscillations of oxygen saturation resolved in almost all cases. Computer assisted POM is useful in predicting and grading nocturnal obstruction and adds decision making data for the treatment in children suspected of suffering from obstructive sleep apnea.

Keywords: Pulse oximetry; Screening; Obstructive sleep apnea; Tonsils; Adenoids; Tonsillectomy
