
Abstract:
**Purpose:** Sedation is becoming more commonplace for pediatric patients undergoing minor procedures. Fortunately, electronic monitors have contributed to a reduction in the associated respiratory adverse events (RAEs). To test the hypothesis that adding the pretracheal stethoscope (PTS) to standard monitoring methods (SMMs) may improve RAE detection in sedated pediatric dental patients, the frequency of RAEs detected by SMMs (i.e. visual observation, capnography, and pulse oximetry) was compared to that detected by SMMs alongside continuous PTS auscultation.

**Methods:** A prospective, randomised, controlled trial was performed with 100 pediatric patient participants of ASA≤2, who were scheduled to receive dental treatment under 0.75 mg/kg and oxygen. Patients were randomised into Groups A (n=50; SMMs) and B (n=50; SMMs+PTS). Inclusion criteria were behavioral management problems and intolerance to dental treatment despite behavioral management techniques or nitrous oxide administration. Exclusion criteria were high-risk conditions for RAEs, altered mental status, gastrointestinal disorders, parental refusal of conscious sedation and failure of previous conscious sedation. An anesthesist was present throughout the dental treatments. **Results:** RAEs were detected in 10 (20%) and 22 (44%) Group A and B patients respectively (p=0.01). The majority of RAEs within Group B were detected by PTS auscultation (n=19). Capnography produced 13 and 15 false-positive results in Groups A and B respectively, whereas the PTS produced 4 (8%) false-positive results in Group B (p=0.009). **Conclusions:** PTS was found to be useful for detecting RAEs during pediatric dental sedation with 0.75mg/kg midazolam and oxygen, in the presence of an anesthesist.