

## Complications Following Day Case Surgery

Readmission following adenotonsillectomy has been shown to be the leading cause for paediatric readmission [1]. There is still ongoing concern from many units who operate on children with OSA/oSDB and therefore children are routinely admitted for overnight observation.

The safety of day case adenotonsillectomy in children without co-morbidities has been demonstrated in retrospective cohort studies [3,4]. These findings have been mirrored by the recent Hospital Episode Statistic (HES) data analysis of 101,180 children undergoing adenotonsillectomy between 2014 to 2019 [5]. In this analysis, any co-morbidity which might contraindicate day case surgery was excluded (including congenital conditions, neurological conditions, and cardiovascular disease). They found no evidence in poorer outcomes between day case and inpatient adenotonsillectomy. Additionally, they found that complication rates were similar between centres performing high rates of day case surgery (>70%) compared with those performing low rates of day case surgery (<50%).

Respiratory complications are seen at a higher rate in children with co-morbidities and those under 2. Heward et al found a significant increase in complications in comorbid children (15.7%) compared to non-comorbid children (6.7%) undergoing adenotonsillectomy [4]. Gan et al found 21.6% of children with mild to moderate OSA had desaturations requiring supplementary oxygen [2], while Chorney and Zur found complications more likely in children with an AHI >5 [6]. Similarly, Marrugo Pardo et al found the majority of respiratory complications occurred within the first 24 hours and 5 of their 6 children who suffered major respiratory complications had severe OSA on pre-operative PSG [7].

However, the data for need for airway intervention in the event of post-operative complications is very poor. In a 2022 systematic review, only 5 studies reported on need for intervention, but the details of this were not consistently documented [8].

Of children admitted overnight for observation, Heward et al saw minor complications in 16.7% of <2s, 10.5% of 2s and 4.1% of >3s [4]. Three moderate complications were seen in children aged 2 and one severe complication in a child aged 11. Similarly, Chorney et al found complications more likely in children under 1.5 years [6].

Day case surgery has not been shown not to be an independent factor in readmission rate in non-specialist centres, with a modest increase (8.0% vs 7.7% in specialist centres) [5]. This finding in UK centres is mirrored in data from Australia, where no statistically significant difference between ED visits (day case rate 9.17% vs inpatient rates 10.2%) and readmission (day case rates 5.19% vs inpatient rates 5.92%) [1]. In their 2022 series, Heward et al concluded that in the case of their 3 readmissions within 28 days of surgery, none would have been prevented by overnight observation [4].

Data on the timing of post-operative complications during the observation period is very poor. Two studies suggest that the majority of events occur within 3 hours [9] and 6 hours [7] of surgery. The safety of same day discharge rates could therefore be improved by the early prioritising of younger children with OSA to ensure adequate post-operative monitoring time is available.

In a recent systematic review [8] demonstrated that in 7 studies, the successful planned day case rate was 96.1%. However, this series was largely limited to retrospective cohort studies. It may be that larger, prospective studies would reinforce the evidence for the safety of day case surgery for adenotonsillectomy in children.