



OBSTRUCTIVE SLEEP APNOEA SYNDROME IN CHILDREN

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OBSTRUCTIVE SLEEP APNOEA SYNDROME IN CHILDREN

Sleep disorders in children form a spectrum from snoring (mostly thought to be benign), upper airways resistance and hypopnoea to apnoeic episodes, i.e. obstructive sleep apnoea syndrome (OSAS).

Paediatric OSAS is characterised by partial or intermittent complete airway obstruction during sleep, which affects the child's ventilation and disrupts their normal sleep pattern. In general, all children with OSAS will snore.

OSAS is a common and serious cause of metabolic, cardiovascular and neurocognitive morbidity in children. OSAS in children is a similar condition to the form in adults but there are important differences too. There is sleep disruption due to respiratory pauses that last more than ten seconds. There may also be hypopnoeic episodes (usually >5-10 episodes per night, with oxygen saturations <85%). The main differences relate to the presentation.

EPIDEMIOLOGY

It is common in children, especially in preschool children; the peak age is 3-6 years, which coincides with the growth of adenoids and tonsils.

It has been estimated to occur in 5-6% of children.

OSAS is becoming an increasing concern as obesity in children increases and as hyperactivity may be related to poor

sleeping. Congenital abnormalities associated with narrow pharyngeal airways (e.g., Down's syndrome or achondroplasia) have an increased risk of OSAS.

AETIOLOGY

Adenotonsillar hypertrophy. However, many children with adenotonsillar hypertrophy do not have OSAS.

Obesity - the likelihood of an obese child developing OSAS is four to five times greater than in a non-obese child.

Neck-to-waist ratio, an index of body fat distribution, predicts OSAS in older children and youth, especially in those who are overweight or obese.

Neuromuscular diseases - eg, presence of craniofacial abnormalities.

A small maxilla and/or mandible may predispose children to OSAS

PRESENTATION

Snoring - usually parents seek attention; many will just get better as they grow older.

Mouth breathing.

Witnessed apnoeic episodes.

Daytime sleepiness and somnolence is less important in childhood OSAS, in contrast with adults who often fall asleep during the day.

Not doing well at school due to poor concentration.

Failure to thrive.

Behavioural problems.

Cor pulmonale, or pulmonary hypertension, can develop in severe cases.

INVESTIGATIONS

The majority of cases are diagnosed on clinical grounds.

In children, apnoeic episodes may only need to be a few seconds long before desaturation occurs.

The overnight in-laboratory polysomnography (PSG) continues to be the gold standard instrument for the investigation of sleep-disordered breathing in children

OTHER INVESTIGATIONS THAT MAY BE NEEDED

Airway assessment - to determine the cause of OSAS - eg, video photography (invasive).

Several radiological techniques (eg, lateral neck radiography, CT and MRI) may be used to investigate the role of any possible structural alterations.

NB: pulse oximetry alone is inadequate for the diagnosis of OSAS.

MANAGEMENT

Children who have intermittent snoring only, with no history of apnoeas, no underlying medical conditions and no daytime features, can be managed conservatively. The goal of treatment is to restore optimal breathing during the night and to relieve associated symptoms.

MEDICAL

Continuous positive airway pressure (CPAP) can effectively treat OSAS in selected groups of children, improving both nocturnal and daytime symptoms. However, poor adherence is often a limiting factor.

Weight loss is very important in obese children.

There is no role for antibiotics (unless tonsillitis is present) or for steroids.

SURGICAL

For uncomplicated cases in children, surgical intervention with removal of the tonsils and adenoids can lead to significant improvements.

Uvulopalatopharyngoplasty - thick soft palate and long uvula. (May also be combined with adenotonsillectomy if there is severe OSAS.)

Tracheostomy - very rarely indicated and only as an exceptional last resort.

COMPLICATIONS

If left untreated, OSAS is associated with adverse effects on growth and development, including deleterious cognitive and behavioural outcomes. Evidence exists also that untreated OSAS impacts on cardiovascular risk.

Daytime hyperactivity.

Cognitive deficits.

Cardiovascular problems - eg, hypertension, left ventricular hypertrophy, raised pulmonary artery pressure.

Failure to thrive.

Association with insulin resistance.

Some studies have shown that children with OSAS have greater impulsivity when crossing streets which increases their risk of injury.

School-aged children are at risk of developing future obesity if they have OSAS.

PROGNOSIS

Treatment is associated with improved learning and behaviour and quality of life. Adenotonsillectomy improves short-term and long-term quality of life in children with OSAS.



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THE LOCATION

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