Adenoid & Adenoidectomy

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Wilhelm Meyer used to term adenoid to describe nasopharyngeal vegetations in 1870

Santorini described nasopharyngeal lymphoid tissue aggregate as Luschka's tonsil

Adenoid is associated with:
Upper airway obstruction
As a focus of sepsis
Persistence of otitis media with effusion

In early childhood this is the first site of immunological contact for inhaled antigens

Development & Anatomy

Adenoid is supplied by facial, maxillary arteries, and thyrocervical trunk

Formation of adenoid begins in the 3rd month of fetal development. This starts with glandular primordia in the posterior nasopharynx becoming associated with infiltrating lymphocytes

Nerve supply is from sensory branches of glossopharyngeal and vagus nerves

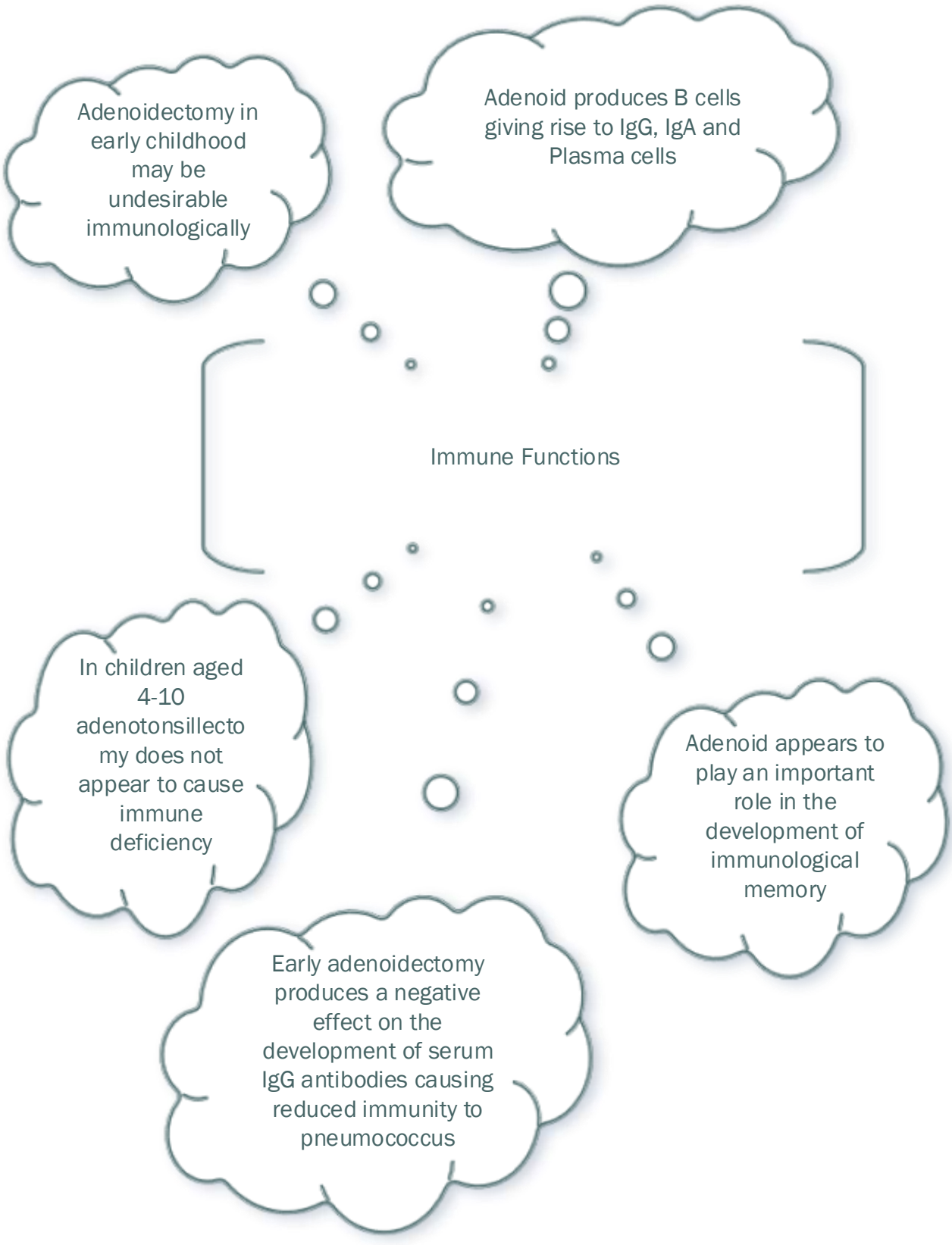
The adenoid is at its relatively largest in relation to volume of nasopharynx in 7 year old age group

Venous drainage is into the internal jugular and facial veins

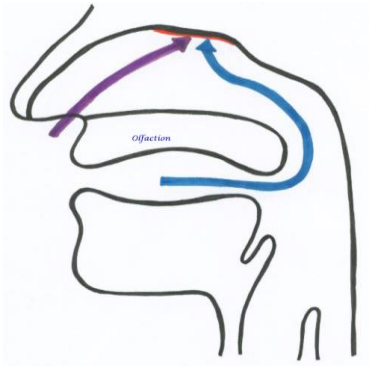
Lymphatic drainage is into retropharyngeal node and upper deep cervical nodes

The adenoid is visible using MRI from the age of 4 months in 18% of children and by 5 months of age it was visible in 100% of children

Immune function of Adenoid



Pathological Effects of adenoid enlargement



Otitis Media with Effusion

Adenoid size and physical obstruction alone cannot account for the benefit following adenoidectomy when the adenoid is small

Adenoidectomy benefits in the management of OME. This is due to the anatomical obstruction of ET

Formation of bacterial biofilm has been indicated as a cause of OME

Recurrent acute/chronic infection of adenoid has demonstrated an increased load of Haemophilus influenza

Recurrent Acute Otitis Media

Adenoidectomy was found not to be effective in reducing episodes of infection in children

Adenoidectomy is not recommended for the management of AOM

Partial maturational selective IgA deficiency is a contributing factor in otitis media prone children

Low dose prophylactic antibiotic treatment is preferred to adenoidectomy in children as a means of preventing recurrent acute otitis media

Upper airway obstruction and sleep-disordered breathing

Childhood sleep apnoea improves after adenotonsillectomy

Airway obstruction due to adenoid hypertrophy could produce depressed arterial PaO_2 and elevated $PaCO_2$. These values return to normal after adenoidectomy

Radiological assessment of adenoid size correlated with the severity of obstructive sleep apnoea

Rhinosinusitis

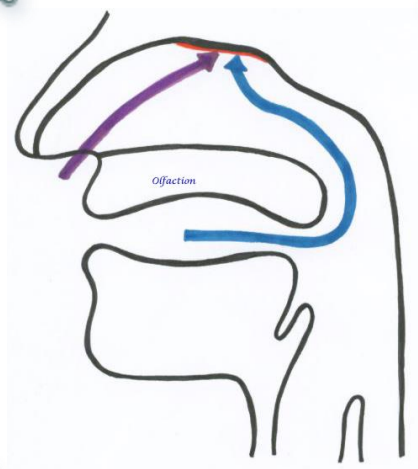
Studies reveal that children with recurrent sinusitis showed improvement following adenoidectomy

In childhood adenoid is implicated in rhinosinusitis acting as a reservoir for pathogenic bacteria

Olfaction

Retronasal smell and taste is affected by adenoid hypertrophy

Adenoid hyperplasia may reduce olfactory sensitivity



Anosmia and taste disturbances showed improvement following adenoidectomy

Loss of smell is not caused by physical obstruction of airway alone but is attributed to changes in olfactory epithelium

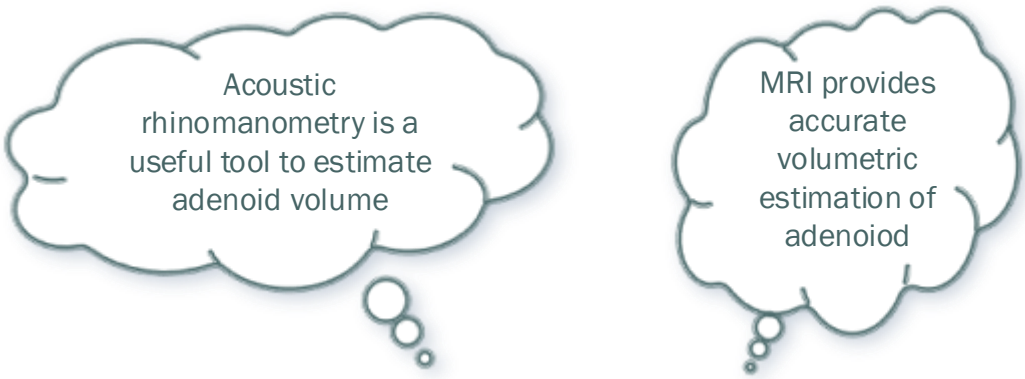
Neoplasia

Unilateral enlargement of tonsil combined with adenoid hypertrophy is an indication for biopsy

Adenoid hypertrophy in the absence of infection should cause suspicion of lymphoma

Lymphoma of adenoid could be part of post transplantation lymphoproliferative disorder causing nasal obstruction in these patients

Clinical grading of adenoid size



Grade I : Adenoid tissue filling one third of the vertical portion of the choanae

Grade II: Adenoid tissue filling from one third to two thirds of the choanae

Grade III: From two thirds to nearly complete obstruction of the choanae

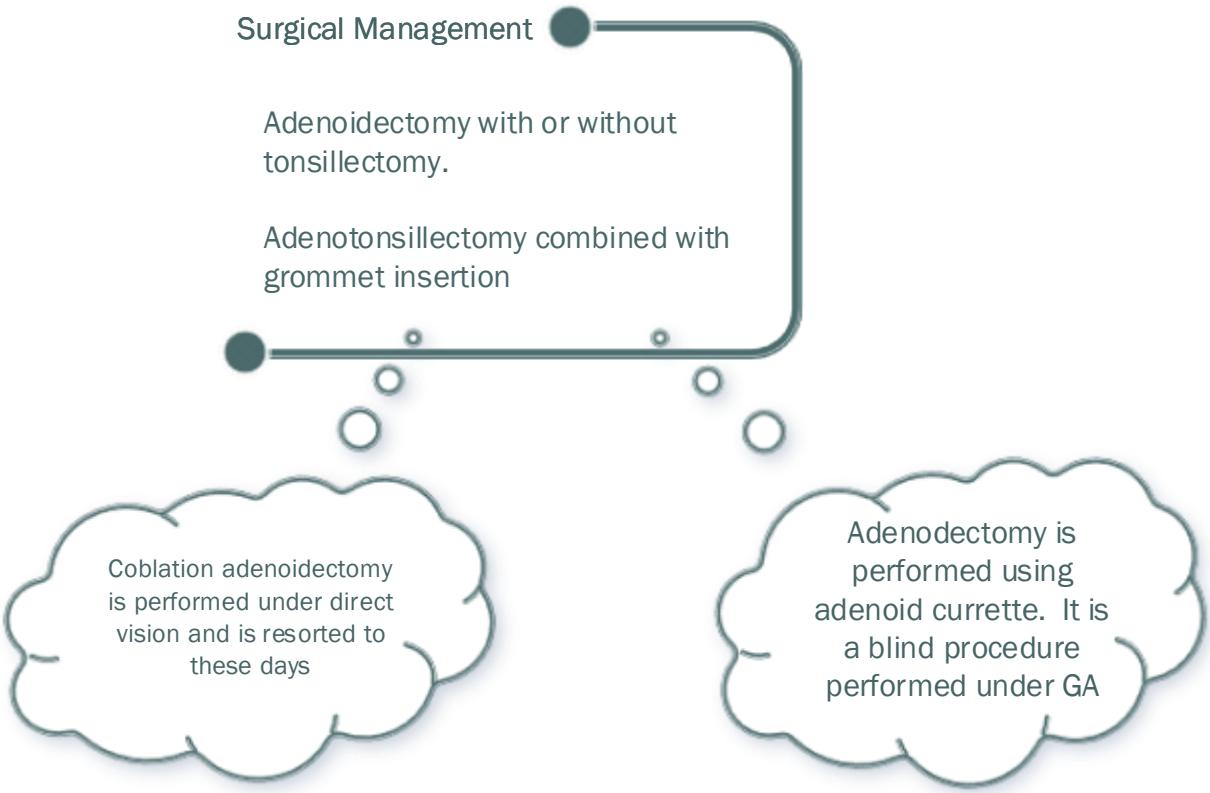
Grade IV: Complete choanal obstruction

Management

Studies suggest that use of topical nasal steroid sprays can cause a reduction in adenoid size with improvements in the presence of middle ear fluid.

Audiometric thresholds showed improvement

Rhinorrhea, cough, and snoring also improved



Complications of surgery

- Bleeding
- Infection
- Dental trauma
- Griesel syndrome
- Retained swab
- Velopharyngeal dysfunction
- Nasopharyngeal blood clot
- Adenoid regrowth