

● Rhinosinusitis

Green nasal discharge in children

Consultant ENT Surgeon, **Mr Michael Harney**, on managing the child with a green discharging nose

The child with a green discharging nose is a frequent clinical problem. The clinician must be able to determine which cases need active intervention and which cases need supportive treatment only.

The diagnosis is based on the duration of symptoms:

- Symptoms present for less than 10 days or not worsening after five days; treat as a common cold – supportive measures only.

- No antibiotics.
- Symptoms present for greater than 10 days or worsening symptoms after five days. Diagnosis – acute sinusitis.
- Symptoms present for longer than three months. Diagnosis – chronic sinusitis.

Acute sinusitis

The EPOS (European Position Paper on Sinusitis) guidelines state that children with coloured nasal discharge and a blocked nose lasting longer

than 10 days, or worsening after five days, satisfy the clinical criteria for a diagnosis of an acute rhinosinusitis (sinusitis is now more correctly termed rhinosinusitis, as the mucosal lining of the sinuses is continuous with that of the rest of the nose, and therefore a 'sinusitis' is always associated with a 'rhinitis').

This duration differentiates it from the common cold; rhinosinusitis and a common cold are frequently symptomatically indistinguishable from one another.

The recommendation is that these patients, with an acute rhinosinusitis, should be treated with an antibiotic, such as amoxycillin or co-amoxiclav. Saline lavage has been shown to reduce bacterial counts, improve ciliary function and induce vasoconstriction, reducing nasal congestion. It is safe, and can be used in the younger infant.

Decongestants can be given for symptomatic relief; xylometazoline (Otrivine) can

be given from the age of two years old; pseudoephedrine (e.g. Sudafed) from the age of six years.

Chronic sinusitis

A green discharging blocked nose of three or more months' duration is defined as a chronic rhinosinusitis. This would indicate that the problem lies in a chronic infection of the paranasal sinuses. The typical narrative states that an obstruction in the sinus drainage pathway causes an accumulation of secretions, which act as a nidus for a chronic bacterial infection. The reality is probably somewhat more nuanced. Children with allergic rhinitis are more symptomatic when they get a head cold; and display symptoms of an URTI more frequently.

The adenoids can act as a reservoir for infection; infecting the nasal and sinus lining; and being infected from sinonasal infections. Allergy can cause adenoid hypertrophy. The interplay of sinusitis, allergic rhinitis and adenoiditis needs to be considered when treating this subgroup of children. The EPOS guidelines suggest that these children should have the allergic component of their disease treated.

Diagnosis of allergic rhinitis is difficult in the younger child less than four years of age. The more typical symptoms of sneezing, itchy nose, watery and itchy eyes develop later. A clear, watery discharge is the symptom most typical of allergic rhinitis.

All children should have a saline rinse (e.g. Sterimar, Nasomist). Antihistamines can be given by the age of one year (e.g. desloratadine (Neoclarityn)). Most nasal steroids can be used from the age of six years; fluticasone propionate (Flixonase) is the only nasal steroid licensed for use from the age of four years; however, the higher-volume prescription version is no longer available, and the lower-volume, over-the-counter preparation has to be used instead. Montelukast can be considered, particularly in children with concomitant asthma.

The EPOS guidelines suggest that these children with chronic sinusitis should be considered for a two-six week course of antibiotics. Gastroesophageal reflux disease has been proposed as a cause of chronic sinusitis, and certain proponents recommend treating with proton pump inhibitors. However, the evidence for this is scant and this author, quite frankly, thinks the association somewhat fanciful.

Surgical options

Adenoidectomy can be offered to the child more than three years of age, with a chronically blocked, mucopurulent discharging nose. The principle behind adenoids causing



Diagnosis of allergic rhinitis is difficult in a child aged less than four

symptoms of 'chronic sinusitis' is two-fold. Firstly, by virtue of their large size, the adenoids can cause a physical nasal obstruction. Secondly, the adenoids can act as a repository for biofilm-forming bacteria, which can become quiescent during periods of antibiotic treatment, and reactivate afterwards.

The size of the adenoids can be assessed by a GP with a postnasal space X-ray. In a child more than five years, an endoscopic assessment is possible in an ENT setting. An enlarged adenoid pad on X-ray increases the likely improvement in nasal blockage from surgery, though it is less sensitive for improvement in nasal discharge, which can occur with adenoidectomy, independent of size.

Adenoidectomy is the first-line surgical management for chronic/recurrent acute rhinosinusitis in kids. This is usually an overnight procedure. Formal FESS surgery is rarely performed in children, as there are concerns that surgery may impair growth of the mid-face.

Polyps are rare in kids and their presence requires investigation for the presence of cystic fibrosis. Polyps are frequently identified in children, but these usually turn out to be enlarged inferior turbinates, secondary to allergic rhinitis.

Elevating the tip of the nose and inserting the otoscope to inspect the anterior nasal cavity for mucopurulent discharge can usually perform a quick examination of the anterior nose easily and painlessly and to detect enlarged inferior turbinates, usually indicating allergy.

A green-discharging nose is characterised as a common cold, acute or chronic sinusitis, depending on its duration. Symptoms lasting less than 10 days (or not worsening after five days) need supportive treatment only.

Treat acute sinusitis (symptoms longer than 10 days or worsening after five days) with saline sprays and antibiotics, with additional oral or topical decongestants as required. Consider long-term antibiotics (two-six weeks) in the chronic cases. Treat underlying allergy if the symptoms are persistent. Adenoidectomy can be useful in recalcitrant cases.

● **Mr Michael Harney**, ENT Consultant, Bon Secours Hospital, Cork.

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