ALLERGIC RHINITIS AND THE ENT PRACTICE

RL Friedman | MBBCh, FCS(SA) ORL
M Hockman | MBBCh, FCS(SA) ORL

ENT Surgeons, Mediclinic Sandton, Johannesburg
Email | friedmanr@surgeon.co.za

ABSTRACT
The term allergic rhinitis implies nasal inflammation with a specific allergic cause. Despite excellent clinical guidelines for the management of this condition, therapy is often unsatisfactory in many patients. A number of reasons for this phenomenon are possible, including the presence of local disease, ongoing and unrecognised allergic triggers, but also comorbid or unrelated pathologies in the nose and sinuses. Careful nasal and facial examination is mandatory in patients, but especially those who fail first line therapy for allergic rhinitis.

INTRODUCTION
Allergic rhinitis (AR) refers to two significant clinical areas:

1. Rhinitis – inflammation of the nasal mucous membranes;
2. Allergy - the specific cause of the rhinitis.

The literature, including Allergic Rhinitis in Asthma (ARIA), reviewing and researching into clinical allergic rhinitis, has focused extensively on these two factors. In doing this, the underlying pathophysiology, the diagnosis and the management have been extensively covered - arguably with good controlled clinical trial outcomes. Excellent practical guidelines have flowed from this. Good medical advice, following extensive continuing medical professional development programs, has been at hand and the correct treatment products have readily been available and reasonably priced.

AR is the most common presenting allergic disease. In one study, it was shown that at a particular time, up to 40% of patients will demonstrate a positive skin prick test to one of the common aeroallergens, while 30% of this randomly tested population exhibit a clinical diagnosis of allergic rhinitis. AR is also stated currently to be the most common of all chronic conditions in children. AR has a significant effect on quality of life (QOL) with a host of consequences if left untreated. The disease burden includes the obvious physical and social functional impairment but also a very significant financial burden. This is important, especially when considering the host of comorbid conditions associated and probably caused by AR. In the context of this paper, failed AR management must add to this burden considerably.

Clinically the disease is said to be categorised by very specific symptoms - nasal obstruction, nasal itch, sneeze and rhinorrhoea and a positive allergy test. Some authors now include specific eye symptoms. In this context, two specific issues need to be addressed:

1. Local allergic rhinitis: Patients with non-allergic rhinitis might have local nasal specific IgE antibodies in the absence of systemic specific IgE. In suggestive cases with negative conventional test results, local nasal allergen provocation should be considered as the management and clinical outcomes, in the various non-allergic rhinitides and AR, may differ considerably.

2. Geographic importance of allergy test panels: The importance of identifying the aero-allergen distribution within specific geographical distributions cannot be overstated when attempting to diagnose allergy and specifically AR. In South Africa, the South African Allergic Rhinitis Working Group, in association with the Allergy Society of South Africa and in collaboration with major laboratories within the country, have developed a test panel of allergens more specific to the various biomes within the country. These will be updated as the needs arise to increase local specificity within South Africa. Specific allergen extracts for our modified test panel are being negotiated with the manufacturers. This particularly applies to the tree pollen extracts.

Unfortunately though, despite this, there is a consistently worrying statistic that an unsatisfactory number of “well diagnosed”, “well managed” and “compliant” patients do not achieve the real satisfaction that studies predict, and
we believe, should be achieved. In some circumstances up to 20% of patients manage very unsatisfactory results and remain highly symptomatic, significantly more have only a partial response. In children, health related quality of life (HRQOL) has been shown to overestimate patients’ and parents’ satisfaction with disease management and the benefit of treatment.

Amongst the reasons previously given for this are poor management choices as well as inadequate compliance. Personal practical clinical experience has suggested additional issues relating to this.

One very common practical issue noted by the authors is the confusion in the choice between intranasal corticosteroids (INCS) and antihistamines as primary treatment protocol after avoidance measures – especially in children. This despite the literature concurrence that INCS are the drug of choice where persistence or significant symptoms are the rule. This is especially practical where nasal obstruction is the predominant symptom.

This paper however would like to review the issue of this unsatisfactory response to adequate diagnostics and availability of adequate management from an otorhinologic point of view.

**ALLERGIC RHINITIS – DIAGNOSTIC AND THERAPEUTIC CONSIDERATIONS**

The outcome issue that ENT practices are faced with regularly seem to be consistent - inadequate diagnosis of treatment failure in allergic rhinitis patients. An example is provided in Figure 1.

In this example (Figure 1), failed allergic rhinitis treatment should have been a diagnostic issue. Due to the prevalence of AR, and the fact that presentation of AR presents primarily to the non-rhinologist, the diagnostic science may require re-evaluation especially where the patient response to management was inadequate.

Dealing with the above two facts, AR diagnostic features seem to be an issue. Allergy and rhinitis are the two basic features of the pathology but not the total clinical phenotype. More appropriately, the problem exists in an exceptionally complex and variable organ, both in form and function – the nose.

Nasal anatomy and airflow dynamics, non-allergic nasal inflammatory diseases, muco-ciliary dynamics, the “nasal cycle” including temperature regulation and humidity control issues, exercise, age and external pollutants and toxins have a significant impact on the nose and its response to AR treatment.

Even without the use of available rhinologic examination technology such as a nasal endoscope and modern radiology, a routine general nasal examination can be extremely useful. Unfortunately this is a seldom performed ritual in routine cases. Training for this skill is also generally very limited. The authors have reviewed these practical problems and attempted to categorise general clinical observations that are clinically very recognisable and quite specific for physical nasal pathology, especially where nasal obstruction is the dominant symptom.

It must be emphasised, and not ignored, that although the cardinal symptoms mentioned above are the more specific and diagnostic symptoms of AR, they are definitely not exclusive. At the coal face, many other signs and symptoms present and some of the failures in AR management outcomes must relate to co-morbidities, complications and other nasal conditions that commonly are not diagnosed.

Itching of the ears, palate, or throat (not just nose), sleep disturbance, anosmia, parosmia, mouth breathing, snoring, dry mouth and throat (may be sore), behavioural changes (especially in children), concentration issues, cough (commonly non-productive), headache, blocked ears, and facial fullness, are all relatively common symptoms in AR. These symptoms, as with the cardinal symptoms mentioned above, are not specific for AR and are commonly associated with non-AR causes. Nasal

**Figure 1: Vague nasal “discomfort”; severe anterior & posterior rhinorhoea; multiple failed AR and “sinus” treatments. Many years duration.**
(Note: “hypertelorism”, expansion of ethmoids into orbits, severe frontal sinus bone destruction into anterior cranial fossa.)

**Figure 2: Years of unsuccessful AR treatment for nasal obstruction**
itch, sneeze, rhinorrhoea and nasal obstruction in clinical studies, however, have shown better specificity and sensitivity for AR. There is also a major difference in non-verbal paediatric, verbal paediatric and adult presentations, especially with regard nasal obstruction.

PROBLEMS RELATING TO NASAL OBSTRUCTION (CONGESTION) AS A SYMPTOM:

1. In adults, chronicity and persistence of the symptom and compensatory mouth breathing, often lead to “normalisation” of the nasal obstruction symptom. Often during an acute allergy attack these patients refer the nasal obstruction to their “better” nose as this is the side that they relate to with their breathing. Adults with long standing symptoms, relatively frequently are only aware of their obstruction when it is finally relieved.

2. One common adult symptom, more related to the mouth breathing aspect of nasal obstruction, is the fear of “facial proximity”. These patients avoid close personal contact, are uncomfortable in crowds and large queues and have many avoidance measures and manoeuvres such as hand to face protective actions in these situations. Air hunger is a relatively common symptom in these situations. When questioned appropriately, these patients often unburden themselves of multiple efforts to get to the root of these issues.

3. In young children, nasal obstruction (congestion), is a relatively late sign in AR.\(^1\)\(^2\)

4. Nasal obstruction is an early predominant sign in rhinosinusitis, as well as in adenoidal hypertrophy (with or without tonsil hypertrophy) and less frequently, in tumours of the nose and post-nasal space.

5. Obstruction may be a significant symptom in internal and external nasal deformities.

Rhinorrhoea may also be multifactorial in origin. AR comorbidities and complications, physical nasal issues and non-allergic rhinitides are all commonly present with anterior and/or posterior nasal discharge. In this vein, it should be emphasised that “post-nasal discharge” is not a diagnosis but a symptom of many nasal conditions.

Figure 3: Lip retraction and tongue thrust with nasal obstruction and obstructed nasal airway in a deviated nose

Figure 4: Important signs in nasal obstruction

Important further questioning regarding family history, seasonality, obvious allergen causes, surgery and injuries to face and nose, as well as questioning about other potential allergic organ systems and comorbid conditions, are vital.

Exclusion criteria, necessary in clinical studies, ensure that the quoted results relate to the treatment protocol and the disease itself. Unfortunately these “clinically pure patients” are rarely seen in practice with the consequent divergent outcome issues possibly resulting.\(^1\)\(^3\) Treating physicians must be aware of these possible outcome shortfalls.

Specific to this paper is nasal obstruction as a symptom in AR.

In the diagnosed AR patient where, despite all the above as well as compliant adequate guideline based treatment, management shortfalls are experienced, follow up must be active both in the short and medium term. Further clinical evaluation at the primary level or ORL referral must be undertaken at this point prior to more extensive, often costly and time consuming allergy workup or costly polypharmacy.

IMPORTANT EXAMINATION IN THE MANAGEMENT OF AR:

1. Non-Specific
   - Adenoid face/long face – in children: It appears to develop with any long term pre-pubertal nasal obstruction.
   - Allergic shiners: This may be present with any long term nasal congestion. Looser skin in the older patient tends to lead to discoloured bagginess below the eyes.
   - Allergic line: A skin crease just above the nasal tip area, results from continuous upward rubbing of the nose – “allergic salute”. It occurs mainly in allergic patients, probably related to itch.
   - Facial eczema: Especially in children.
Lip retraction: The “cupids lip” usually starts in childhood and often persists to adulthood. It appears to be a permanent adaptation to long term nasal obstruction – maintains an open oral airway even when the jaws are closed. There is some experimental evidence that forced oral breathing may lead to long term muscle changes in oral and diaphragmatic musculature.\(^\text{14}\)

All the above have been referred to as the so-called “allergy face” in children but they really indicate persistent and long term nasal obstruction. In adults especially, but in children on occasion, the shape and form of the outside of the nose may also be indicative of more permanent nasal obstruction.

A narrow or pinched middle third of the nose may suggest middle third of the nose cartilage collapse, sometimes exhibiting the “inverted V” sign. Similarly, over prominent nasal dimples are suggestive of nasal inlet obstruction, (nasal valve area). This area is responsible for 50% of total airway resistance. In health it is the rate limiting step of airflow to the lungs. These nasal valves may only collapse on inspiration and may be unilateral. Narrowing here increases airway resistance according to Poiseuille’s Law; “The effective resistance in a tube is inversely proportional to the fourth power of the radius change.” Halving the radius of the tube effectively increases the resistance by a factor of 16.

A deviated external nose may be suggestive of a deviated nasal septum which may be complex and obstructive. A nasal ptosis (overhanging tip) often accompanies this with a caudal nasal septal deformity or shortening. Caudal nasal septal deformities are especially important as they effect the nasal valve areas. More importantly they are easily seen without any special instrumentation.

When examining airway competence the physician should place a finger below each nostril delicately on alternate sides, so as not to distort the nose and assess the airway with gentle diaphragmatic breathing as well as with a deep sniff. Sometimes these lateral walls may only collapse on deep inspiration. These patients may complain of nasal obstruction with exercise.

The “Cottle” sign, gently drawing the sidewall of the nose away from the midline, will give information relating to the nasal inlet – internal nasal valve area.

In patients with nasal obstruction, a good nonspecific examination, such as the above, is quick and within the capabilities of all physicians and might alert the physician prior to AR treatment failure or if after treatment failure, prevent unnecessary additional medication and investigation.

2. Specific examination
Should the above red-flag a patient prior to or after treatment failure, then referral for a more thorough nasal examination including nasal endoscopy and CT scan evaluation is indicated. Basic geographic and personal specific allergy testing at primary care and specialist level is mandatory. Total IgE testing value is limited.
CONCLUSION

Despite significant increased current literature and continuing professional development training, the required response to adequate guideline based compliant diagnosis and treatment is inadequate for patients with nasal disease. Many postulates have been advanced, but from a practical and rhinologic point of view, nasal diagnostic issues have been understated. Ethically, this may be a problem from an “evidentiary uncertainty” point of view, if not on a personal level, likely from a group level.

Finally, a significant issue directly related to this, relates to the poor outcomes in nasal surgery where nasal allergy has not been diagnosed and or treated.

REFERENCES


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REFERENCES


For further information, please contact Dr Jaco van Zyl at 021 917 5620.