

THE COLLEGE OF GENERAL PRACTITIONERS SINGAPORE



# The SINGAPORE FAMILY PHYSICIAN



## COMMON ENT PROBLEMS

- FESS
- Epistaxis
- Fish Bone
- Ear Syringing

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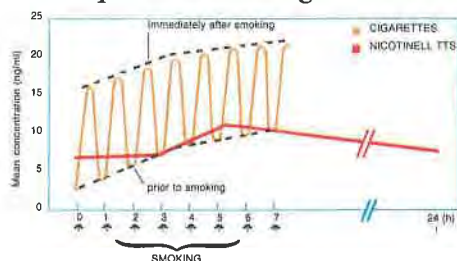
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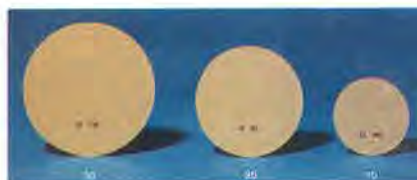
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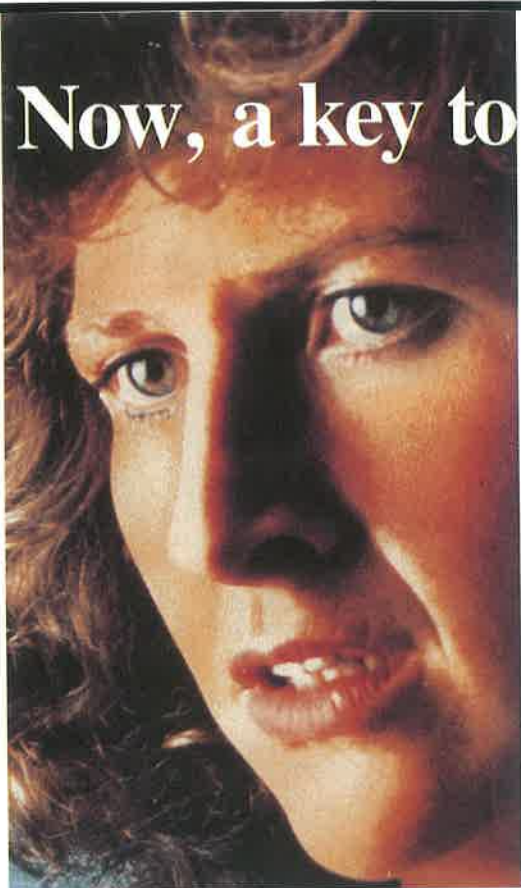
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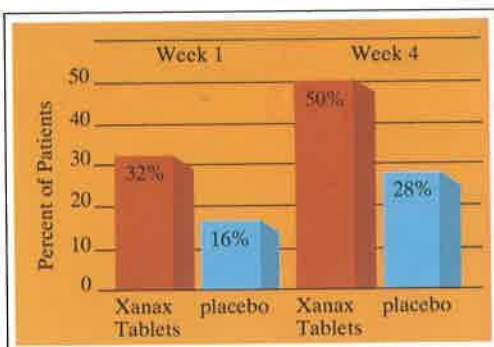


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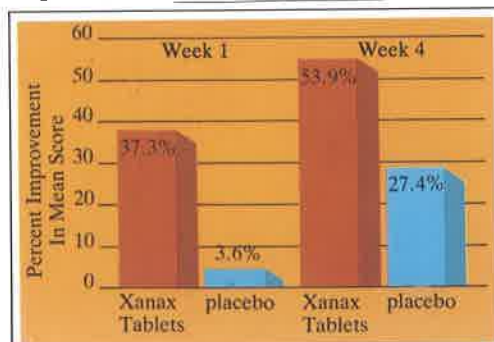
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## BEHAVIOURAL PROBLEMS IN FAMILY PRACTICE

To be a physician capable of giving truly holistic and optimal care to his patients, the family doctor must have balanced abilities in the medical and behavioural sciences. Take, for example, a patient with a "simple" but recurrent tension headache. His doctor can make a symptomatic diagnosis, an anatomical diagnosis, and even a pathophysiological diagnosis — he is even able to exclude structural disease — but this does not help the patients, unless the doctor can also make an aetiological diagnosis.

Several times daily, the family physician will be confronted with a patient presenting with symptoms which may indicate underlying organic disease and/or a primary emotional disorder. The workup to exclude an organic basis may be therapeutic in itself, but if nothing is found, the doctor must continue with equal zeal to look for emotional causes for the patient's symptoms.

All health professionals, but more so especially the family physician, must understand people — their coping behaviours, responses to stress, effects of lifestyles, etc. The success of Family Medicine in treatment and management depends upon understanding and fulfilling the *subjective* needs of patients families, as well as their *physical* needs. The family doctor cannot provide truly holistic care if he misjudges patients, misinterprets their behaviour or ignores or cannot understand the reasons for the behaviour. The very nature of family dynamics has much to do with the occurrence of illness in individual patients, as well as its response to treatment. The family physician, with his unique responsibility of caring for the entire family, is obliged to know as much as possible about the family itself as a behavioural unit. Beyond the family setting, sources of emotional disorders may be discovered in the

patient's employment situation, social activities and any recent change in life situation. Upon confirmation of the diagnosis of an emotional disorder requiring treatment, the busy physician, or one who does not have the interest to manage emotional problems, will be often tempted to refer the patient to a psychiatrist or a clinical psychologist or some other resource within the community. But the family physician has an inherent advantage over other therapists in this respect — the usually strong doctor-patient relationship which has been cultivated over the years and his intimate knowledge of the patient's past social, medical and family history facilitate successful management. Another important advantage is the fact that the patient usually perceives his problem as primarily medical rather than psychiatric. Any psychotherapy (even if it is superficial) and/or counselling by the family physician is more likely to be accepted than a suggestion of treatment by someone else, even the family physician's partner or assistant.

What then, must the young to-be family physician be taught to enable him to effectively manage his patients with emotional illness? Besides the life cycle of the family, the limits of normal behaviour and how to recognise behaviour which exceed the limits considered normal, mature interpersonal and sexual behaviour, the cultural, social, psychological and physical factors affecting health and illness, defence mechanisms and how they are used by patients in health and illness, the community and its meaning, ethics and value systems, what is of the greatest importance is the doctor's self-awareness and understanding of *himself*. The personhood of the family physician is his most important and dependable diagnostic and therapeutic tool. His whole personality is to be the instrument through which he works as a physician

to promote growth and to help restore persons to a state of wholeness or wellness.

He must accept that there is great wisdom in the dictum "Know Thyself". He must examine his values, attitudes and behaviour and understand his own feelings with regard to those patients he would normally reject, those patients to whom he would become hostile, and those patients to whom he would have positive feeling of love and affection. He who avoids the pain of revelations about himself prevents the growth of self-knowledge; he does not only reject himself but hides himself from himself. What the doctor does not know and experience in himself he will find it difficult, if not impossible, to identify in the patient, and what he has been able to find in himself, but not accept, he will find impossible to tolerate and care for in the patient.

Allowing himself, as he interacts with his patients, to gain new insights which facilitate his understanding of himself and of his patients, will allow the physician to respond to a patient's behaviour in a more productive fashion. He can appropriately use his past experiences to relate to the patient. He can intellectually recognise and accept himself as an imperfect, error-making and inconsistent person, just like his patients, and utilise his personhood or genuine self to build a realistic one-on-one interpersonal relationship with the person of the patient, different from the usual doctor-patient relationship, which will tolerate heavy usage for weighty emotional matters. It

works very well for the doctor and also for the patient. It encourages the patient's trust, trust which is durable and essential for the patient to share sensitive information with his doctor and for the patient to accept the comments and suggestions of the doctor, which leads in turn to improved compliance.

The young family physician must also cultivate a non-judgemental attitude, the capacity to find something to respect in every patient, the ability to view patients as human beings and not as disease carriers, and accept that illness includes a patient's failure on the job, deviant behaviour and unhappiness in addition to pain and organic pathology. He must hone his skills in interview techniques with patients and family members (adapting them to fairly short clinic visits) and know how and when to employ various reactions, such as empathy, confrontation, interpretation, reflection and silence, during the consultation.

Finally, the content of the behavioural sciences component of the curriculum in Family Medicine must include lessons on the family physician's role and function and on psychotherapies and counselling skills. He must also be able to discern when and what kind and how much help to render or, on certain occasions, *not* to render, realising that help sometimes may end up being unhelpful and that, in fact, true help may even be given through withholding help.

*Moti Vaswani*



## THEME EDITORIAL

# WHAT IS NEW IN THE EAR, NOSE AND THROAT?

The theme of this issue of the Singapore Family Physician is ear, nose and throat (ENT) problems. The theme papers cover practical aspects in dealing with epistaxis, ear discharge and foreign bodies. These are commonly encountered problems in general family practice. Functional endonasal sinus surgery (FESS) as a new approach to the management of chronic and recurrent sinusitis is also highlighted<sup>1</sup>.

A survey of the papers in the MEDLINE medical literature database on ear, nose and throat published in 1992 showed otitis media and its management to be the most commonly written subject, accounting for 35 papers out of the 47 obtained with the search words "ear, nose and throat" published in 1992. Functional Endoscopic Sinus Surgery (FESS) accounted for 8 papers. There was one paper on tinnitus and none on epistaxis or foreign bodies. There are 2 studies on general practitioner training in ENT.

### TRAINING IN ENT

Although ENT problems are common in general practice, yet undergraduate and postgraduate teaching in the subject is variable and often sparse<sup>2</sup>. The assumption that direct experience in otoscopy in practice will compensate for inadequate previous tuition was tested by assessing a group of 53 general practitioners and 59 medical students. Confidence in otoscopy was assessed using a visual analogue scale and skill was assessed by clinical examination of four ears. Otoscopy was divided into identifying the tympanic membrane, distinguishing a normal from an abnormal membrane and identifying specific features of the membrane. The medical students and general practitioners were comparable in both confidence and skill for all parameters except for skill in

identification of specific features of the tympanic membrane, in which the students' ability was greater. In both groups the percentage of false negative observations was reassuringly low — for students the mean was 3.6% and for general practitioners was 4.3%. It was concluded that supervised tuition is essential and cannot be compensated by unsupervised experience.

The results of a questionnaire on the individual's undergraduate and postgraduate training on 220 general practitioners in the Trent region<sup>3</sup> in the United Kingdom indicated that there is great demand among final year vocational trainees and principals in general practice for an increase in the amount of formal postgraduate training in ENT. Nearly 85% of those questioned welcomed the opportunity for further training, primarily through attending courses, lectures or consultant clinics. Only 13% requested a formal attachment as a senior house officer (SHO) in an ENT unit. Just over one in three of the respondents had received formal postgraduate training during their training years but even in this group 75% felt they would benefit from further training.

### FUNCTIONAL ENDONASAL SINUS SURGERY

Functional endonasal sinus surgery is also synonymously referred to as functional endoscopic sinus surgery. Antrostomies and Caldwell-Luc procedures were the surgical approaches most often used to treat patients with chronic or recurrent sinusitis, and plain radiographs were the principal adjuvant diagnostic modality. In the late 1970s, Messerklinger<sup>4</sup> developed the concept of the ostiomeatal complex and radically altered our understanding and management of chronic sinusitis. The practical result of his theories was

the introduction by Kennedy et al<sup>5</sup> during the 1980s of functional endonasal sinus surgery (FESS) for adults and the application of the procedure to children by Gross et al<sup>6</sup>.

Since then, FESS has been accepted as the surgical procedure of choice for treating chronic or recurrent sinusitis in patients of all ages. Retrospective analysis of the records of 513 adults and 260 paediatric patients who underwent FESS after failing to respond to optimal medical treatment revealed an improvement rate of approximately 80% for both age groups. It must be remembered however that there are differences in indications, preoperative evaluation, operative technique and methods of postoperative follow-up for children<sup>7</sup>. There is also a need for adequate training for the specialist operator as well as the drawing up of guidelines for otolaryngologists to perform FESS<sup>8</sup>. Even with the direct visualisation and clear illumination supplied by the fiberoptic light source of the endoscope, the surgeon must use extreme care in manipulating tissue. In children, tissues are more vulnerable to trauma, and the smaller anatomy makes atraumatic surgery more challenging. The closing line of Prof KH Yeoh's paper<sup>1</sup> in this issue of the Singapore Family Physician reiterates the point of importance of operator skill: "As is so often the case in medicine, it may be the singer, and not the song, that determines the outcome."

The goal of FESS is to establish normal drainage and ventilation of the paranasal sinuses by removing diseased tissue and opening the obstructed ostiomeatal complex, which is the anatomic region of the middle meatus where mucociliary flow converges from the frontal, maxillary, and ethmoid sinuses. Although the obstruction can be initiated by anatomic changes or systemic diseases, upper respiratory tract infection and allergy are the most common causes.

Sinusitis is rarely an isolated process. Adenotonsillar hypertrophy or infection and chronic otitis media with effusion are commonly associated with sinusitis in children. In adults, septal deviation and turbinate hypertrophy are common. Allergy plays an important role in both age groups. Sinusitis may exacerbate asthma in patients of any age, and treatment of sinusitis often improves asthmatic symptoms.

The diagnosis of sinusitis is usually based on the clinical manifestations, but children rarely demonstrate the characteristic adult symptoms of sinusitis. Cough, rhinorrhoea, and chronic otitis media are common in children, but adults usually present with chronic headache, nasal congestion and discharge.

Radiographic studies are essential for the diagnosis of sinusitis. Plain radiographs offer quick and accessible diagnostic assessment, especially for cases of acute sinusitis, but CT is considerably more reliable in documenting cases of chronic or recurrent sinusitis. Coronal CT scans of the sinuses, essential for every patient before FESS, aid in surgical planning, reveal pathologic changes, and display anatomic variations.

## OTITIS MEDIA

### *Acute otitis media*

One of the key issues in the management of otitis media is whether antibiotics should be given in acute otitis media. Epidemiological data suggest that viral infection is frequently associated with acute otitis media. Clinically, what the GP encounters in the consulting room or the patient's home is an acutely painful red ear and attempts to decide whether the cause is bacterial are often difficult.

A good succinct review of this subject is given in the paper by Burke<sup>9</sup>. The aim of management of the acutely red ear are to relieve pain, to eliminate any bacterial infection, to avoid relapse and recurrence, and to prevent short- and long-term complications. Most of the evidence in favour of antibiotics concerns short-term outcomes. Of the many placebo-controlled trials that have been carried out since 1960, none shows better outcome with placebo than with antibiotic. In general, the papers from North America are concordant in strongly favouring antibiotics, particularly where speed of resolution of the original infection is concerned. The earlier studies used amoxycillin and penicillin while more recent ones have used amoxycillin. Similar conclusions were reached in the only randomised controlled trial in the UK on this subject<sup>10</sup>. Doubts on antibiotic use have come from several European countries, particularly the

studies of van Bachem et al<sup>11</sup>, Appleman et al<sup>12</sup> and Myind et al<sup>13</sup>. These are however flawed by the research design used: small sample size in the case of Bachem and Appleman and the use of penicillin V as the antibiotic of choice, which is hardly a gold standard, in Myind et al's study. On balance there seems to be good basis for continuing to prescribe antibiotics, at least in high-risk groups which are: those children aged under two years old, those with bulging tympanic membranes and those whose pain has been present for more than 48 hours. Even when these groups are excluded, in Burke's study<sup>9</sup> it was found that illness does seem to be shortened by antibiotics.

With regards to the choice of antibiotics, amoxycillin is a reasonable choice for *Streptococcus pneumoniae* but there is an increasing problem of *Moraxella catarrhalis* and some strains of *Hemophilus influenzae* causing otitis media. If these are suspected, for example where initial treatment has failed, then co-trimoxazole or co-amoxycylav (Augmentin) are probably preferred. Co-trimoxazole is also useful in patients allergic to penicillin. Erythromycin may also be used.

Another issue is the place of myringotomy in acute otitis media. This is the artificial perforation of the tympanic membrane. It is often used in Europe on the basis that it is both diagnostic and therapeutic. On surgical principles, draining pus should promote healing. However, there is little research evidence to support this, and the procedure either is painful or carries anaesthetic risks. Other interventions, for example decongestants, although used, have little or no scientific basis.

### *Chronic otitis media*

It is doubtful if chronic otorrhea is viral in origin, although it is possible that viral infection may predispose the patient to chronic bacterial infection<sup>13</sup>. The bacteria responsible for chronic otitis media are the same as those found in the acute condition. In young children, *H influenzae* is the most common pathogen; in older children *Streptococcus pneumoniae* is the usual pathogen. Like in acute otitis media therefore, amoxycillin would be the usual antibiotic to start with. If the condition does not respond, co-amoxycylav or an oral cephalosporin (for example, cefaclor) may be

used. Microbiological culture and sensitivity testing will guide the clinician further. In addition, appropriate advice about aural cleaning (including warnings about using cotton-tipped swabs) should be given. Advice about steps to prevent bath water, swimming pool water or sea water from getting into the ears should also be given.

### **GLUE EAR**

The natural history of glue ear in children is that spontaneous resolution usually takes place (50% at three months and 95% at 12 months without active management). One approach advocated<sup>14</sup> is careful clinical observation for a period of up to six months. The small minority of children who continue to have a persistent severe hearing deficit at that point should be referred with a view to surgical intervention and management.

### **JUST HOW PREVALENT IS ACUTE OTITIS MEDIA?**

It is clear from the literature that acute otitis media is a common condition in the United States, Australia, the United Kingdom and other European countries. It is mentioned in the Australian Family Physician for instance, that two-thirds will have at least one episode by the child's second birthday<sup>15</sup>. My impression is that acute otitis media is not as prevalent in Singapore (and neither is glue ear). There may be a place to confirm this with a community survey.

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*Goh Lee Gan*

# MANAGEMENT OF EPISTAXIS BY CAUTERIZATION

A G Gibb, FRCS, DLO

## SUMMARY

Chemical cauterization of the nose is useful in the management of suitable cases of epistaxis. It involves a simple technique which can readily be acquired by a competent general practitioner.

### Key words:

Cautery. Epistaxis

Nasal cauterization is a useful means of treating epistaxis in selected cases.

*Can it be used by the general practitioner? Surely this is a treatment for the ENT specialist.*

This depends on the type and purpose of the cautery employed. Some forms of nasal cautery are undoubtedly specialist procedures.

*What forms of cautery are available and for what purposes are they used?*

Cautery is employed for two main reasons. Firstly, it is invaluable in epistaxis, two forms of cauterization being available – electrical and chemical. The former should be regarded as a specialist procedure but chemical cauterization is relatively simple and well within the competence of a capable general practitioner.

Secondly, cautery is used extensively, either as galvano-cautery or diathermy, to improve the nasal airway in cases where the inferior turbinates are hypertrophied. This type of electrocautery which involves a special technique different from that

applied to epistaxis, is always carried out by a specialist.

*If I carry out chemical cautery what equipment will I require?*

Anyone undertaking this procedure requires forehead illumination (head mirror or head lamp), nasal speculum, angled dressing forceps and the appropriate pharmaceutical preparations.

*Which cases of epistaxis are suitable for cautery?*

You must be able to identify the bleeding site. This applies equally to cases with active bleeding and to recurrent cases, inactive at the time of examination.

*Where should I look for the source of bleeding?*

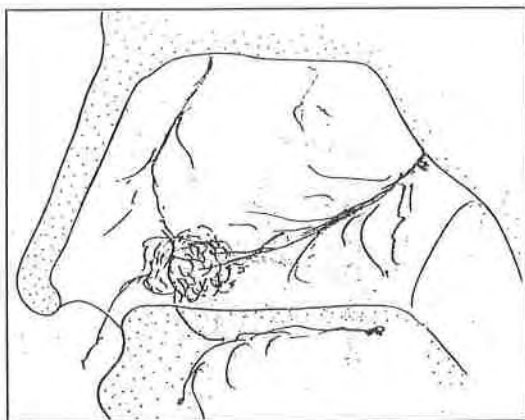
Here we are lucky, since in the vast majority of cases, including nearly all those under the age of fifty years, the bleeding site is located in the anterior part of the nasal septum just behind the muco-cutaneous junction, making it easy to find and treat. This area contains a rich vascular anastomosis (Fig 1) and is commonly referred to as Little's or Kiesselbach's area. The mucous membrane in this location, which is thin and lies directly on cartilage, is often exposed to minor

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trauma: nose picking in children is a common cause, while in hot dry climates or in air-conditioning, drying and crusting may lead to bleeding.



**Fig 1** Blood supply of the nasal septum showing Kiesselbach's plexus (Little's area)

***If I can't find a bleeding point what should I do?***

In an active nose bleed you'll need to insert a pack to stop the bleeding. If there is no active bleeding when you see the patient you should look very carefully for enlarged vessels on Little's area. This is made much easier by decongesting the mucous membrane.

***How can I achieve decongestion?***

The method which I favour has the dual action of decongesting and anaesthetising the mucous membrane so that no additional preparation is necessary if cauterization is required.

Method: Soak a pledget of cotton wool in a solution of either 10% cocaine or a mixture of equal quantities of 4% lignocaine and 1:1,000 adrenaline; place the cotton wool carefully over Little's area; leave in position for 3-5 minutes; remove and inspect.

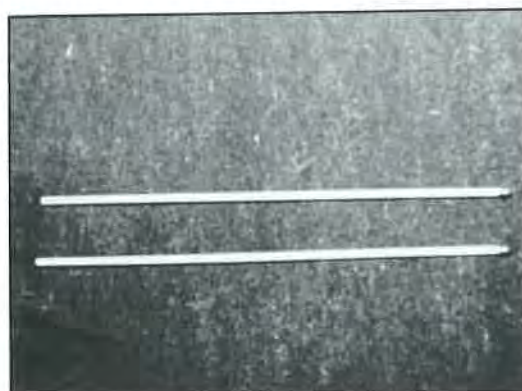
You will now find that the mucosa is pale with all the blood vessels standing out in relief.

***If I find a large vessel which requires cauterization, which form of cautery should I choose?***

Chemical cautery cannot cope with severe active bleeding and electric cautery will be necessary. In such cases you should refer the patient to a specialist, but meantime insert a pack to limit the bleeding. On the other hand, if bleeding is slight or absent, chemical cauterization is the method of choice and you can proceed with this right away.

***If I decide to carry out chemical cautery, what substances are available?***

The agents commonly used are trichloroacetic acid (crystals or 50% solution), chromic acid (crystals fused on a probe) or silver nitrate. Silver nitrate 75% is likely to be the most convenient preparation in Singapore as it is available from the N.U.H. pharmacy (on prescription)\* in packets of disposable wooden sticks, the tips of which have been impregnated with the chemical (Fig 2).



**Fig 2** Wooden applicators impregnated with silver nitrate at the tip

\* Manufactured by: Bray Health and Leisure Ltd., Faringdon, Oxon., SN77BP, England.

***How to apply the cauterizing agent?***

Simply touch the problem area or blood vessel and it will turn white. Be gentle in case you set the vessel bleeding!

***Are there any special precautions?***

Yes. You should be careful not to touch the patient's skin with the caustic; the skin is not anaesthetized and will burn and sting. You may select a large sized aural speculum in preference to a nasal



speculum to afford greater protection for the skin (Fig 3). Limit the cautery to the area required and do not cauterize both sides of the septum at the same time or a perforation may result.



*Fig 3 Using an aural speculum to protect the skin during cauterization of the nose*

Be careful also, if using silver nitrate, not to touch your own skin, since after a few minutes, it will turn black and the stain won't wash off!

*Is any particular "after care" required?*

Not really. There should be no pain. At the finish of the cauterization procedure the nose is normally left unpacked unless there is active bleeding, in which case a pledget of dry cotton wool should be placed on the affected area for 24 hours. Explain to the patient that a crust will form at the site of cauterization, separating in 7-10 day's time, and that slight bleeding may occur until healing is complete in 2 weeks: minor episodes of bleeding can be safely ignored, but further treatment will be required if severe bleeding occurs.

# HOW TO MANAGE A PATIENT WHO HAS SWALLOWED A FISH BONE

H K Leong

## INTRODUCTION

The commonest ENT emergency seen at the Accident & Emergency Departments in Singapore is a patient who has swallowed a fish bone. Fish bones are the most frequent foreign bodies found in the pharynx and oesophagus in the local setting. This probably reflects the popularity of fish in the diet of Singaporeans as well as the style of cooking (unfilleted).

It is not uncommon for the family physician to be faced with a patient with this problem. Therefore having the theoretical knowledge and basic surgical skill to remove a bone in the throat will not only add to the satisfaction of the doctor but also save the patient much in terms of waiting time at the ENT specialist's clinics and/or the A&E departments of major acute hospitals.

## BASICS OF MANAGEMENT OF A SUSPECTED SWALLOWED FISH BONE

There are four factors which would largely determine the success of the doctor trying to remove a swallowed bone:

### 1) Good Lighting

It is still common for many family physicians to depend on an ordinary torchlight for examination of the throat. This is grossly inadequate and the doctor will in most instances miss a bone except the very huge ones. A 60W

conventional spotlight or a halogen light source mounted on an angle-poised stand will make a very practical solution to overcome this problem besides enhancing the decor of your consultation room. Such a light source together with a head-mirror of aperture at least 1.5cm diameter will allow good visualization of all the pharyngeal structures using a tongue depressor and a laryngeal mirror.

### 2) Topical Anaesthesia

Many of the patients whom we encounter with a swallowed foreign body have overactive gag reflexes. Even for the specialist who looks at throats several times an hour every working day, such patients can make attempted removal of pharyngeal foreign bodies a frustrating exercise. Topical anaesthesia with 10% Xylocaine will help reduce the sensitivity of the gag reflex.

### 3) Basic Instruments

Figures 1a), 1b) & 1c) show the basic instruments that will enable a doctor to remove most of the pharyngeal bodies. The metal right-angled tongue depressors are used to depress the anterior two-thirds of the tongue so as to open up the view of the oropharynx. Tilley's forceps, featured in figure 1b), are used to grasp the foreign body. They are also helpful to help retract the anterior faucial pillars to look for suspected bones in the superior tonsillar poles. Laryngeal mirrors are used to inspect the tongue base, valleculae and piriform fossae where some bones can be impacted. Nagashima forceps, featured in figure 1d), are very useful for bones impacted deep in the tongue base and vallecula.

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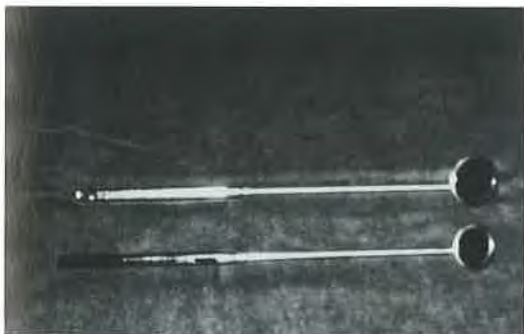
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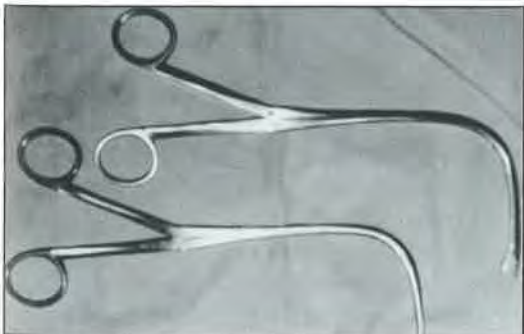
*Fig 1a) Tongue depressors used to depress the anterior two-thirds of the tongue*



*Fig 1b) Tilley's forceps used for removing foreign bodies from oropharynx.*



*Fig 1c) Laryngeal mirrors used for inspection of the tongue base, valleculae and piriform fossae.*



*Fig 1d) Nagashima forceps used for removal of bones in the tongue base and valleculae.*

#### **4) Knowledge of Sites of Impaction**

The following table shows the respective frequencies of the different sites of impaction of swallowed bones in a local prospective study.

Sites of Impaction	Percentage
Tonsils	31.8%
Base of Tongue	18.2%
Vallecula	4.5%
Piriform fossae	1.9%
Cervical oesophagus	7.1%
Thoracic oesophagus	1.9%
Undetermined	35.8%

As can be seen from the table, in about one third of cases no foreign body could be found despite an exhaustive search. In some of these cases a superficial ulcer could be seen at the site of pain. In such cases the bone has most likely been dislodged when the patient swallowed rice in the traditional way of treating his problem. In the remainder of cases in which a foreign body was eventually found, more than half were in the tonsils and base of tongue, and therefore within reach just using tongue depressors, Tilley's forceps, laryngeal mirrors and Nagashima forceps.

#### **SYMPTOMS OF A SWALLOWED FISH BONE**

1. History of having swallowed a fish bone. Most patients present within the first three days of the event. It is highly unlikely to find a bone in a patient who swallowed it more than a week earlier.
2. Pain or a sensation of a foreign body in the throat. The exact site of the pain is very helpful in determining where the bone is. If the patient can lateralize the pain, it is likely to be above the level of the cricoid cartilage, and therefore in the pharynx. If the site of symptoms is in the midline, it is likely to be below cricoid level in the cervical oesophagus.



3. Dysphagia in an adult or refusal to take feeds in a young child signifies that there is a strong likelihood that the bone is in the oesophagus.
4. Retrosternal chest pain after swallowing a bone should alert the attending doctor that the bone is in the thoracic oesophagus.

#### CLINICAL EXAMINATION AND REMOVAL OF AN IMPACTED FISH BONE

Using a good light source, head mirror and topical anaesthesia if necessary, the patient's throat is examined systematically. The different common sites of impaction are carefully inspected. Particularly difficult areas include the superior and inferior poles of the tonsils, tonsillo-lingual sulcus and the valleculae, especially in a patient with very prominent lingual tonsils. During this procedure, effective tongue depression is achieved with the right angled tongue depressors holding down the tongue firmly at the anterior two thirds. A pair of Tilley's forceps can be used to retract the anterior faucial pillars which may be obscuring the superior tonsillar pole. If no bone is found, the patient's tongue is held forwards with a gauze, and the tongue base, vallecula and the piriform fossae are inspected with a laryngeal mirror. Bones in the tonsils and anterior tongue base can be easily removed with the Tilley's forceps. Bones in the posterior tongue base, valleculae and piriform fossae would require the Nagashima forceps.

If at this stage no bone can be found despite a good view of the oropharynx and hypopharynx, two clinical tests have been found useful:

1. Laryngeal rocking test – during which the patient's thyroid cartilage is rocked gently from side to side. If a bone is impacted at the upper cervical oesophagus (the commonest site in the cervical oesophagus), the patient will complain of pain during this action.
2. Self digital palpation test – during which the patient is asked to palpate the maximal site of

pain with his own index finger. If he can feel a sharp bone with his fingers, it will help the doctor locate the bone so that it can be found and removed. If no bone is felt, it is most likely that the bone is not there. This will also help convince that patient that this is so.

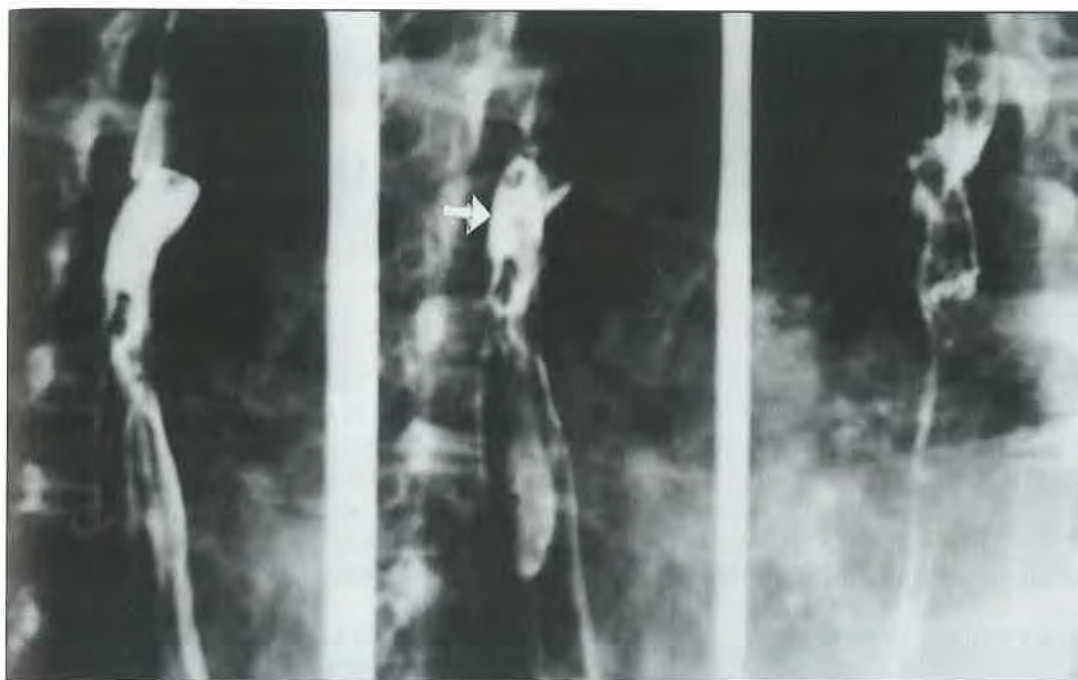
#### RADIOLOGY

Plain lateral view x-ray of the neck is useful in confirming and locating a bone in the cervical oesophagus. As seen in Figure 2, this is usually seen as a calcified vertical shadow centred at C6 level (cricopharyngeal sphincter). This x-ray is of no use in excluding a pharyngeal fish bone. Plain x-ray of the neck in the anteroposterior view and chest x-rays are of no value in the diagnosis of oesophageal fish bones.



*Fig 2 Vertical radio-opaque shadow of a fish opposite C6 (arrow)*

A barium swallow is indicated when the patient has definite symptoms of an oesophageal fish bone (chest pain, dysphagia, etc.) but the plain lateral neck x-ray shows negative or equivocal findings. In Figure 3, a bone can be seen in the midthoracic oesophagus.



*Fig 3 Barium swallow showing a bone at the midthoracic level (arrow)*

#### **WHEN TO REFER THE PATIENT TO A SPECIALIST**

Under the following circumstances, referral by the attending family physician is indicated:

1. Inability to perform a good pharyngeal examination
2. A bone is found but for various reasons, removal is not achieved
3. Positive laryngeal rocking test
4. An oesophageal foreign body shown on plain lateral x-ray of the neck
5. Patient has chest pain and dysphagia
6. A bone is shown on barium swallow

# WHAT'S ALL THE FUSS ABOUT FESS?

*K H Yeoh, FRCSE, FAAOA*

## WHAT IS FESS?

### FUNCTIONAL ENDOSCOPIC SINUS SURGERY

It was conceptualised by Prof Messerklinger and taught to the world by his pupil Prof Stammberger.

## WHAT DOES FESS DO?

FESS tries to re-establish drainage of the sinuses by removing as little tissue as possible in key areas, by an intranasal endoscopic approach.

## HOW IS FESS DIFFERENT FROM CONVENTIONAL SINUS SURGERY?

Conventional sinus surgery tries to remove disease in toto from the maxillary (Caldwell Luc), ethmoidal or frontal sinus (frontal ethmoidectomy) by an external approach. The difference with FESS is therefore:

- (a) Conventional sinus surgery involves more extensive extirpation
- (b) there are external incisions with accompanying discomfort
- (c) hospitalization is one to two days longer
- (d) conventional sinus surgery is safer, with less potential hazards.

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## IS FESS BETTER THAN CONVENTIONAL SINUS SURGERY?

For early chronic sinusitis, generally yes. But not necessarily in advanced or complicated chronic sinusitis. It complements but does not replace conventional sinus surgery.

## HOW IS FESS BETTER THAN CONVENTIONAL SINUS SURGERY?

- (i) It seeks to correct a developing chronic sinusitis earlier through:
  - (a) earlier, precise endoscopic diagnosis
  - (b) CT imaging of the sinuses which provides confirmation of disease and assessment of extent.
- (ii) It is able to deal with limited disease in key drainage areas (ostiomeatal complex) during the earlier stages which conventional sinus surgical methods are not able to do. Such limited disease, if not dealt with, can cause massive pathological changes in the sinuses (maxillary, ethmoids, frontals, sphenoids) by blocking their drainage.

## IS FESS SAFER THAN CONVENTIONAL SINUS SURGERY?

It is more dangerous and technically more tricky. The dangers are intraorbital haemorrhage, perforation of anterior skull base with CSF leak or meningitis, optic nerve injury with blindness and fatal rupture of internal carotid artery.



### **SHOULD EVERY CHRONIC SINUSITIS PATIENTS UNDERGO FESS?**

Definitely not.

FESS is indicated in chronic sinusitis only when:

- (a) Conservative treatment has failed
- (b) Nasal polyposis is present
- (c) Chronic sinusitis is advanced
- (d) Abnormal anatomical obstruction to sinus drainage is present.

### **HOW IS A GP TO MANAGE A PATIENT PRESENTING WITH CHRONIC SINUSITIS?**

- (a) Tell patient he has chronic sinusitis
- (b) Explain that the main problem is blockage of the sinuses
- (c) Treat him over a period of two weeks (vide infra)
- (d) If this fails, he will need to see an ENT surgeon

### **HOW SHOULD THE GP TREAT CHRONIC SINUSITIS DURING THE FIRST TWO WEEKS?**

- (a) Restore drainage – topical and oral decongestants
- (b) Treat infection – antibiotics, e.g. Bactrim / Septrin
- (c) Treat allergy – antihistamines, e.g. Clarityne

### **WHY TREAT ALLERGY IN CHRONIC SINUSITIS?**

Allergy is the underlying cause of at least 80% of chronic sinusitis. Recurrence occurs if it is not treated.

### **WILL FESS CURE ALLERGY?**

Definitely not.

Initially the symptoms are alleviated, but the problem will recur if the underlying allergy has not been identified and treated.

Untreated allergy is the commonest cause of recurrent disease and repeat surgery.

### **WHAT IS THE ENT SURGEON'S PLAN WHEN HE SEES THE REFERRED CHRONIC SINUSITIS PATIENT?**

His main objective is to restore drainage of the sinuses. Pharmacotherapy fails only if drainage has not been successfully established. When this happens, surgical drainage is indicated.

### **SO WHAT DOES THE ENT SURGEON DO? FESS THE PATIENT RIGHT AWAY?**

Definitely not.

Fess is indicated only if:

- (a) Drainage by the ENT surgeon has failed – nasal suction, antral lavage / washout
- (b) Nasal polyposis is present
- (c) Massive radiological disease is seen on CT Scan
- (d) Radiological evidence of abnormal anatomy obstructing drainage

### **ANTRUM WASHOUT !!! ISN'T THAT A HORRIBLE EXPERIENCE FOR THE PATIENT?**

Antrum washout (AWO) should not be a bad experience.

It should not be painful

It should not be bloody

There should be no crunching and crackling

It should be a "non-event"

### **ISN'T AWO OBSOLETE WITH FESS AROUND?**

AWO is an effective, simple and economical option that could make FESS unnecessary for many patients.

### **SHOULD AWO BE CONSIDERED IN EVERY CASE OF FAILED CONSERVATIVE TREATMENT OF CHRONIC SINUSITIS?**

It should.

It probably is the most important option, short of surgery, that must be considered for every case of failed medical treatment of chronic sinusitis or of recurrent sinusitis, because it could make surgery unnecessary.

### **WHY AND HOW DOES AWO WORK?**

AWO uses liquid under positive pressure to flush open the blocked maxillary ostium as an office procedure. In doing so, it is also evacuating diseased material / pus from the maxillary antrum, thereby encouraging the restoration of normal ciliary activity and drainage.

### **SO, WHAT IS THE DIFFERENCE BETWEEN BAWO AND FESS?**

BAWO is a water pistol used in the office to open the maxillary ostia and clean the maxillary sinuses.

FESS is a high-powered rifle like an AR 15 used in as major operating theatre to achieve essentially the same purpose if the only blockage is in the maxillary ostia. However, FESS can unblock the

other sinuses if these are also obstructed, which AWO cannot do directly.

### **SO, WHAT'S ALL THE FUSS ABOUT FESS?**

There should be no fuss really.

It is not a big deal.

It is not a cure-all for chronic sinusitis as has been represented in the local newspapers.

It should be done only by surgeons who have had special cadaveric training. The recommended norm is twenty cadaveric heads – which are hard to come by.

It has its failures in inexperienced hands.

It has its failures in the best hands, if allergy or immunodeficient states are not dealt with.

It does not cure allergy.

It is a dangerous operation. The surgeon who taught it to the world says to every patient undergoing FESS "Austrian law requires me to tell you that this is a dangerous operation".

### **SO, WHAT ABOUT FESS?**

In good hands, with proper indications, when allergy is taken care of concurrently, it is a good operation.

It is an additional surgical modality of treating chronic sinusitis.

As is so often the case in medicine, it may be the singer, and not the song, that determines the outcome.

# WAX — EAR SYRINGING

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## SUMMARY:

Syringing is the safest and easiest way for the general practitioner to remove wax. If the wax is hard it should be softened prior to syringing. Careful attention should be paid to the syringing technique and contra-indications since complications, some serious, can result if these fundamentals are neglected. Syringing is also useful for the removal of pus and foreign bodies in the ear.

## Key words:

Cerumen, Syringing, Keratosis obturans.

## INTRODUCTION

Ear wax is a mixture of the secretions from the ceruminous and pilosebaceous glands situated in the outer part of the external auditory meatus to which is added migrating epithelial debris from the canal skin. The sebaceous component is of apocrine type resembling that of sweat glands and is responsible for the characteristic odour of the wax. The consistency of the wax is largely determined by the relative proportions of ceruminous (watery) and sebaceous (fatty) secretions. These are influenced by genetic and aging factors. Although both patient and doctor may look on wax as a nuisance it plays a role in protecting the ear from the entry of small foreign bodies (e.g., dust particles) and bacteria, by its sticky consistency and its bacteriostatic and bactericidal content of lysosomes, glycoproteins and immunoglobulins.

Fortunately wax is produced only in the outer half of the external meatus where it is usually easy to remove.

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## *What complaints raise a suspicion of wax?*

Dullness of hearing – coming on either suddenly, especially after swimming, washing the hair or showering (water contact causes the wax to swell and occlude the meatus), or presenting less intrusively with a growing awareness of hearing deterioration, which may lead a hearing aid user to suspect that the aid is no longer working.

Other symptoms may be present but are seldom the reason for attending – autophony (hearing one's own voice in the affected ear), tinnitus and occasionally discomfort. Wax which does not block the meatus usually causes no symptoms.

## *Supposing wax is present what should I do?*

There are two options – instrumental removal (with curette, probe, forceps or suction) or syringing.

## *Which method should I choose?*

If the wax completely occludes the meatus syringing is the safer alternative. However, if a small piece of wax or epithelium blocks your view of the ear drum, it is often easier to remove or push it aside with an instrument. However poking in the



ear, unless you are skilled, can be dangerous or you may simply displace the wax further inwards, making it more difficult to remove.

**Instrumental removal.** Do not consider mechanical removal unless you feel sure that all of the following conditions are satisfied:

- technical skill (training or practice essential)
- good lighting (forehead lamp or mirror)
- special instruments
- wax which is firm or hard

**Syringing.** In contrast to instrumentation syringing is a relatively simple and safe procedure which requires very little training.

*How to proceed if wax is present?*

If the wax is soft, go ahead and syringe.

If the wax is hard, soften the wax before syringing.

*What should I use to soften the wax?*

Softening agents fall into three categories:

**Lubricants.** These include olive oil, liquid paraffin and glycerine. They are essentially trouble-free but are slower in action than the other preparations. They are best used once daily for a week. Three or four drops should be instilled with the patient's head tilted to the side and affected ear uppermost. Stay in this position for at least 3 minutes. Do not warm the solution before – oily solutions retain heat more than one might suspect.

**Effervescent (oxidising) agents.** These include hydrogen peroxide and sodium bicarbonate. Both preparations work by their mechanical action in breaking up wax. This is rapid so that the main advantage of these preparations is their speed of action. Indeed soda bicarbonate is often added to the syringing lotion itself. Repeated application of these preparations may prove irritant to the skin and lead to otitis externa.

**Cerumenolytic agents.** These are popular in the form of proprietary preparations, but only one

appears in DIMS (Singapore), namely Waxsol (docusate sodium). These drugs have a definite solvent action on wax rendering its removal easy but do not have the capacity to dissolve large masses of wax. Three to four drops are instilled into the ear once daily for at least 2 days (usually for a week) prior to syringing. Waxsol should not be used if a perforation of the ear drum is suspected as it is irritant to the middle ear mucosa and can cause intense pain. Otitis externa may also follow its application.

*Are there any precautions to be taken prior to syringing?*

Make sure there is no perforation of the tympanic membrane.

Ask the patient and check the history and case records.

Avoid syringing, whenever possible, if the ear is acutely inflamed. If you must syringe under these circumstances, be warned – it is going to be painful!

Make sure the lotion used is near to body temperature. Otherwise giddiness may occur due to caloric stimulation resulting from warming or cooling the labyrinth.

*What lotion should I use?*

Tap water is all that is required. Remember the ear is lined only with skin. There is no logic in using normal saline as is sometimes suggested. Also strict sterility is unnecessary. Tap water is adequate. Add soda bicarbonate if you wish (5g / 500 ml)

**Types of syringe.** There are three basic models from which to choose (Fig 1):

**Metal model.** This syringe is favoured by most specialists. It is powerful but at the same time heavy and difficult to control. Movement or jerking of the tip of the nozzle may occur as the hand muscles are contracted sharply to activate the plunger. The syringe must have an easy smooth action so occasional lubrication of the barrel may be necessary if sticking occurs.

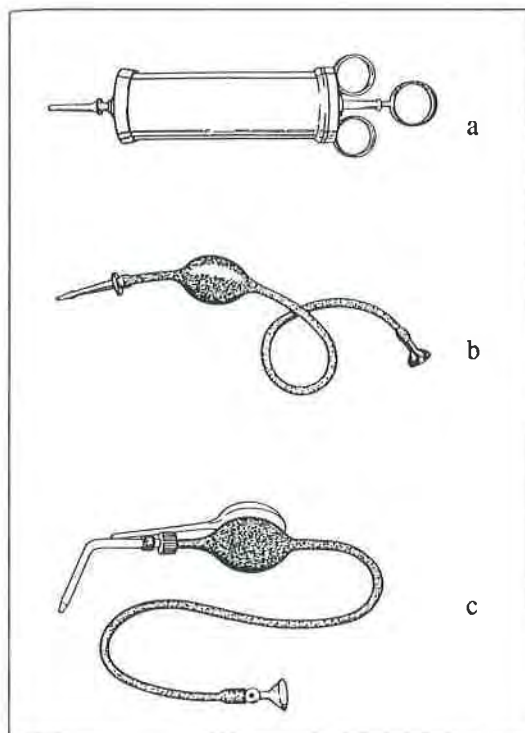


Fig 1

#### Types of syringe

(a) Metal model

(b) Higginson syringe

(c) Bacon model

**Bacon design.** This model is popular with general practitioners in U.K. It is easier to handle than the metal model, but is less powerful. Note that both Bacon and metal syringes can be controlled using one hand only.

**Higginson model.** I usually recommend this syringe for nurses. It is similar in power to the Bacon model. However the bulb and nozzle are held in separate hands, thus eliminating the hazard of jerking the nozzle when the bulb is squeezed. However the lack of a free hand makes it impossible to hold the patient's ear or steady the head while syringing is in progress. Nonetheless the ability to keep the syringe steady offsets this disadvantage.

#### What points make for safe and comfortable syringing?

1. Most important – good vision.

It amazes me to see even specialists neglecting

the fundamental principle of good illumination when to them it is always easily accessible. Good vision makes for safe and effective syringing. If you do not have forehead illumination, use the best lighting available - anglepoise lamp, daylight, etc.

2. Avoid giving the patient a bath. That is not what he is paying for! Put a towel round his neck and then cover him with a waterproof cape. Ask him to hold a kidney dish firmly against his cheek to collect the returning water. Then it's up to him to stay dry!
3. After filling the syringe, check to make absolutely sure that all residual air is expelled. The noise of gurgling air bubbles in the ear is very frightening.
4. If the nozzle of the syringe is removable, make sure that it is firmly re-attached (vide infra).
5. Carefully place the tip of the nozzle close up to the wax. If it is too far away much of the force of the water jet is lost and, if the wax is hard, the syringing is likely to fail.
6. Direct the stream of water against the postero-superior canal wall aiming for a gap in the wax, if present. The water must be flushed past the wax so that the build up of pressure in the deep meatus forces the wax out with the returning stream of fluid. Avoid syringing directly against the drum (Fig 2).

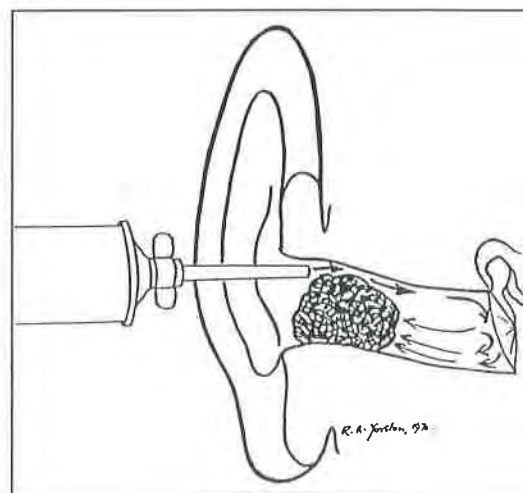


Fig 2 Technique of syringing

7. After the wax has been removed inspect the ear to ensure that all is well and that no pieces of wax remain.
8. Finally, empty the remaining water out of the ear canal by turning the patient's ear downwards and drying with a towel. If any water remains, dry out the meatus with cotton wool on a forceps or wool carrier.

*What complications am I liable to encounter?*

1. **Giddiness.** This probably means that the water is too cold, or less commonly too hot. However it might indicate that the ear drum is perforated and that water is entering the middle ear (where temperature differences are more critical).
2. **Pain.** Although pain may result from bad technique such as striking the meatal wall with the syringe tip, its occurrence suggests the possibility of a pre-existing perforation of the ear drum. If pain is severe it is wise to stop syringing at once.

Pain can also occur if the wax is very hard and considerable pressure is required to remove it. In this event, the wax may actually tear the canal skin as it is forced out with resultant pain and bleeding.

Finally, if the syringing is painful and yet the wax shows little or no sign of coming out, the possibility of an underlying keratosis obturans should be considered. (vide infra)

**3. Damage to the walls of the meatus.**

This may be caused by trauma from the tip of the syringe or from the evacuation of hard wax.

**4. Damage to the tympanic membrane.**

This is an uncommon occurrence. There are three possible ways it might happen:

- (a) Damage from the tip of the syringe. This may occur in children who will not sit still. It is also much more likely to happen if syringing is carried out "blind".

(b) Water pressure. The average pressure exerted in syringing is very unlikely to damage a normal ear drum, but if the membrane is already abnormal and scarred by disease, it is possible that a thin area in the drum could rupture.

(c) A much more serious problem has occasionally been encountered with metal type syringes. In these the nozzle is detachable and can be removed for sterilization. Failure to secure the nozzle firmly when re-assembled has in rare instances had disastrous consequences. The nozzle has been known to fly off under pressure, perforating the drum and damaging the middle ear structures. The stapes may even be forced inwards into the inner ear leading to a total deafness.

**5. Otitis externa**

This may occur if the ear is not dried out after syringing.

*What is keratosis obturans?*

This is a local disturbance of epithelial migration in the ear canal which results in the accumulation of keratinous debris. The condition leads to progressive expansion of the deep meatus where large masses of keratin, firmly applied to the underlying skin, pile up in "champagne cork" fashion. The keratin is usually obscured by a mass of wax and the nature and extent of the condition are unlikely to be appreciated at the initial inspection. Syringing is invariably ineffective and may cause considerable pain, and in these circumstances keratosis obturans should always be suspected. The diagnosis is confirmed by the presence of smooth grey sheets of keratin, like layers of paper, on the deep surface of the "wax". All cases in which this condition is suspected should be referred to a specialist, who will invariably require to use local or general anaesthesia to clean out the ear effectively. The condition is likely to recur and further specialist referral may be necessary.



***Are there any other indications for syringing?***

Syringing is invaluable in removing foreign bodies and pus.

***Why use syringing for foreign bodies?***

Smooth round foreign bodies like beads, pearls, ball bearings, etc. are very difficult to remove by probe or forceps and yet syringing it is so simple – try it and see for yourself!

***What about pus?***

Cleaning out an ear which is full of pus for diagnosis or treatment is often difficult, slow and tedious. Syringing is quick and effective.

***But can I syringe a perforated ear?***

The answer to this question is “yes” and “no”!

It is mistakenly believed that syringing should never be carried out if the drum is perforated. This holds true for dry perforations, and most cases with wax fall into this category; since water entering the middle ear may irritate the mucosa and convert an inactive otitis media into a wet discharging ear. However, if the ear is already discharging, gentle syringing is a comfortable, quick and effective method of cleaning out the pus for diagnostic or therapeutic purposes.

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# VISION SCREENING FOR PRESCHOOL CHILDREN IN THE PRIMARY HEALTH CARE CLINICS

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## ABSTRACT

The Maternal and Child Health (MCH) section of the Primary Health care clinics in Singapore offer visual acuity screening to children aged 3 to 6 years old as part of the health surveillance programme for preschool children. The majority of the children are screened at about 5 years old using Snellen's chart. Children who are at high risk for visual problems are screened at 3 years old with Otago chart which is a visual chart using single alphabet optotype. A one month survey of all the 1955 children screened in all MCH clinics in December 1991 was carried out to find out how the programme performed in the field. 98.4% of the children had vision successfully tested. 20.6% of the children were found to have visual acuity of 6/12 or worse. The screened out rate of abnormal visual acuity in the 5 year olds was much higher (25.5%) than that of the 3 year olds (3.8%). The referral rate was 13.4%, 11.6% refused to be referred when offered referral. After evaluation by secondary centres, 189 children (9.7%) were confirmed to have refractive error and/or amblyopia. The prevalence of refractive error was 9.5% (2.3% in 3 year olds; 11.6% in 5 year olds). The prevalence of amblyopia was 1.5% (0.7% in 3 year olds; 1.7% in 5 year olds). In conclusion, it appeared to be more cost-effective to screen children at slightly older age when the more sensitive Snellen's chart can be used.

**Key Words:** Vision screening, Refractive errors, Amblyopia, Preschool children.

## INTRODUCTION

Visual examination in the early years of childhood is important because in these years, much of a child's learning is done through visual channels,

and treatment for visual disorders is also more successful. Early detection of squint, amblyopia and refractive errors that have amblyogenic potential are the main objectives of mass visual screening in preschool children.

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The Maternal and Child Health (MCH) clinics in Singapore offer vision screening as part of the health surveillance programme. Visual acuity screening is offered at 3 to 6 years old. Before that age, no formal visual screening except gross inspection of eyes, torch light test for squint, visual tracking behaviours and visual histories from parents are done. Visual acuity screening of

preschool children was first introduced into the programme from 1977. Initially, the children were screened at 4 to 5 years of age, using Stycar chart tested at 6 metres distance. Only about 30% of the birth cohort were screened. 6/18 (in Snellen's equivalent) was the cut off for abnormal vision and only about 1% of the vision tests were "abnormal" then. From 1985 the cut off point for abnormal vision was lowered to 6/12.

A pilot study was done in 1987 to study the feasibility of screening three year olds for squint and visual acuity by MCH nurses. A summary of the findings of the pilot study will be presented in this paper. From 1987, based on the findings of the pilot study, the screening age was lowered to include 3 year olds for children in the high risk group. Otago chart, a single optotype eye chart similar to Stycar chart, has since been used to test 3 year old children. Snellen's chart, which is more sensitive in detecting amblyopia than single optotype vision charts, was gradually introduced for testing children who are older than 4 years. By 1991 most children 4 to 6 years old were tested with the Snellen's chart. An average of 27,000 vision tests was done yearly in the last 5 years in the 17 Polyclinics and MCH clinics located all over Singapore<sup>1</sup>, covering about 60% of the birth cohort.

In December 1991, a one month survey of visual acuity screening done in all 17 MCH clinics was carried out to evaluate the MCH vision screening programme. The findings will be presented in more detail in this article.

#### FINDINGS OF THE PILOT STUDY IN 1987

A random sample of 302 children residing in 2 clinics' catchment zones was studied. We took visual risk history based on birth, family risk factors and abnormal visual behaviours; Gross inspection of the eyes; Hirschberg's torch light test for squint; Cover tests for squint with fixation targets at 0.3 and 6 metres distance; Oculomovement examination and Otago chart for visual acuity. With special co-operation from Dr Cheah Way Mun, the then head ophthalmologist of Tan Tock Seng Hospital, all abnormal cases, 9 cases of untestable and 29 normal cases were referred to the hospital for evaluation.

The study showed that staff nurses were able to complete the visual acuity test in 282 (93.4%) children. Visual acuity findings among cases successfully tested revealed that 67.4% had 6/6 vision in both eyes and 3.9% of children had visual acuity of 6/12 or worse in any one eye. There were no children with visual acuity of worse than 6/24. Only 2 cases had differences of 2 lines in visual acuity. Among the cases referred, 10 (3.3% of total screened) had Meridional Amblyopia related to astigmatism. The criteria used for the diagnosis of amblyopia was one line or more reduction in visual acuity with the presence of amblyogenic factor. The comparison of visual acuity results with the outcome of evaluation by the hospital showed that all the 7 cases with 6/6 vision and 8 out of the 11 cases of 6/9 vision, were confirmed to be normal; 9 cases out of 10 cases of 6/12 or worse vision were confirmed as abnormal giving a false negative rate of 16.7%, false positive rate of 10%. If the abnormality criteria was lowered to 6/9, the false negative rate will be 0% but the false positive rate will be raised to 42.9%. However, the sample was too small for this to be a significant validity study for the Otago Visual Chart. There were 2 cases of squint (0.7% of the total sample), diagnosed by the hospital. Both are cases of alternating exotropia. Only one of them was referred as squint case and the other case was found among cases referred for abnormal vision. Only 1 out of the 7 cases suspected to have a squint by the clinics was confirmed to have squint at the hospital.

#### Summary:

It was concluded from the 1987 pilot study that using nurses as screeners, most three year olds could be successfully tested with Otago chart. **3.9% had visual acuity of 6/12 or worse. 3.3% were found to have amblyopia.** Only 2 cases had squint and one of them was missed by the nurses. When the Otago chart was used, children with 6/9 vision which was 28.7% of the sample, should be classified as "borderline cases". They should be followed up closely. The findings on squint detection casts doubt on the effectiveness of screening for squint by nurses.



## STUDY 2 — DECEMBER 1991

A survey of all children screened in the month of December 1992 in all MCH clinics was carried out to find:

1. The screen-out rate of abnormal visual acuity in 3 to 6 year old children by the MCH vision screening program
2. The prevalence of abnormal visual abnormality among children screened out by the program.

## SUBJECTS AND METHOD

A total of 1972 children, aged 3 to 6 years old, which was all the children attending the vision screening in the 17 MCH Clinics between 6 December 1991 and 6 January 1992, were included in the study. 17 cases were found to have known abnormal vision prior to the study; most of them were review cases screened out at the previous months. They had been excluded from the data analysis, leaving 1955 children in the sample.

**The vision test procedures were deliberately kept the same as the current routine screening programme in MCH clinics.**

All vision tests were done by staff nurses. Visual risk history (Appendix 1) was taken at three years old. Those found to be at high risk for visual abnormalities were offered vision screening at three years old and those with low risk were given appointment for vision screening at about 5 years of age. The Otago chart was used for testing all children below four years old. All children above 4 years old were offered Snellen's chart testing as the first line. If not successful, Otago chart was used at the same visit.

Otago chart is a single optotype eye chart similar to the well known Stycar chart. The optotype used are 7 reversible alphabets (VHOAUXT). The letters are presented singularly at 4 metre distance. The child indicates the letter seen by pointing to one of the letters in a card that contains all the 7 letters. Most consultation rooms can accommodate the 4 metre testing distance and at that distance, it is also easier to get compliance of young children. The visual acuities are converted to Snellen's

equivalent (eg.  $4/4 = 6/6$  vision). The chart was developed by Prof. J C Parr, Dept of Ophthalmology, Otago University, Dunedin, New Zealand. It is cheap and is used widely in New Zealand.

The well-known Snellen's charts used were illuminated with a light bulb behind the alphabet or number plates. The optotype were presented in lines and tested at 6 metre distance achieved by the use of reflective mirror at three metres.

The children were classified as untestable if they could not be successfully tested after two attempts at two separate visits up to 3 months apart.

Visual acuity of 6/12 or worse in any one eye was considered "abnormal". Vision on 6/18 or worse or those with 2 lines or more difference in acuity between 2 eyes are a definite indication for referral. Children with 6/12 vision were either referred or followed up in the clinics. Unlike Study 1, there was no special arrangement with referral centres other than the routine practice. The outcome of the referral was traced either from the reply letters or by writing to referral centres for information. The refractive error and amblyopia were coded for analysis. A child was defined to have refractive error when he was reported to have the condition or was reported to be fitted with glasses. A child was defined to have amblyopia when he was reported to have the condition by the referred centre. Children with abnormal vision but not referred or refused referral were called up for a repeat test in the clinics within 3 months.

## RESULTS

A total of 1955 children were tested. 98.4% of the children were successfully tested. 32 children were untestable.

### Screen-out rates of the programme

Table 1 shows the results of the visual acuity test by the method of test and the age group. The overall screen-out rate was 20.6%. The screen-out rate in 3 year olds was 3.8% and in 5 year olds was 25.5%. Looking at different methods used, using Otago chart, the screen-out rate in 3 year olds was 3.1%. Only 17 cases of 3 year olds were screened

with Snellen's chart; the screen-out rate was 23.5%. The difference was significant ( $Z=4.31$ ,  $p<0.01$ ) despite the small sample in Snellen's method. In the 5 year olds, using Otago chart, the screen-out

rate was 9.0%; using Snellen's chart, the screen-out rate was 28.6%; the difference was significant ( $Z=6.43$ ,  $p<0.01$ ).

**Table 1 : Cross Tabulation of Visual Acuity by Age and Method**

Age	3 years		5 years		Sub-Total		Total
Method	Otago	Snellen	Otago	Snellen	Otago	Snellen	
Normal	401	13	214	893	615	906	1521
Abnormal	13	4	22	363	35	367	402
Not Successful	12	0	8	12	20	12	32
Sub-Total	426	17	244	1268	670	1285	1955
Total	443		1512		1955		

**Legends:**

3 years = 3 to <4 years (clustered at 3 years)

5 years = 4 to 6 years (clustered at 5 years)

Vision = Visual acuities presented in Snellen's equivalents of worse eye

Normal = 6/6 or 6/9 vision

Abnormal = 6/12 or worse vision in one or both eyes

Not successful = Not able to carry out or complete visual acuity test

**Calculation of Screen-out rates based on Table 1.**

Overall Screen-out rate :  $402 / 1955 = 20.6\%$

Screen-out in 3 year olds :  $13+4 / 443 = 3.8\%$

Screen-out rate in 5 year olds :  $363+22 / 1512 = 25.5\%$   
( $Z=10.2$ ,  $p<0.01$ )

Screen-out rate in 3 year olds

with the Otago method :  $13 / 426 = 3.1\%$

Screen-out rate in 3 year olds,

with Snellen's method :  $4/17 = 23.5\%$   
( $Z=4.31$ ,  $p<0.01$ )

Screen-out rate in 5 year olds

with the Otago method :  $22 / 244 = 9.0\%$

Screen-out rate in 5 year olds

with snellen's method :  $363 / 1268 = 28.6\%$   
( $Z=6.433$ ,  $p<0.01$ )

### Rates of referral

Table 2 shows the referral pattern in different age groups and at different levels of visual acuity. A total of 261 children were referred. The overall referral rate was 13.4%. In the 3 year olds, the rate

of referral was 2.3%. In the 5 year olds the rate of referral was 16.6%. 37 children's parents refused referral which represented a refusal rate of 11.6% of those offered referral. 21 children were referred to the private sector by their parents' choice.

**Table2: Cross Tabulation of Referral by Age and Visual Acuity**

Vision Referral Pattern	6/12		6/18		≥6/24		Not Successful		Normal Cases		Total
	3 yr	5 yr	3 yr	5 yr	3 yr	5 yr	3 yr	5 yr	3 yr	5 yr	
Referred	8	139	0	67	2	41	0	4	0	0	261
Not Referred	2	74	1	5	1	4	12	16	414	1107	1636
Private	0	11	0	7	2	1	0	0	0	0	21
Refused	1	23	0	12	0	1	0	0	0	0	37
Total	11	247	1	91	5	47	12	20	414	1107	1955

### Legends:

- Referred* = Referred successfully
- Not referred* = Tester did not refer the case
- Private* = Child managed by private sector
- Refused* = Refused to be referred
- 3 years* = 3 to <4 years (clustered at 3 years)
- 5 years* = 4 to 6 years (clustered at 5 years)
- VISION* = Visual acuity of worse eye expressed in Snellen's equivalents
- Not successful* = Not able to carry out or complete visual acuity test
- Normal* = 6/6 in both eyes or 6/9 vision in both eyes or the worse eye

### Calculation of referral rates based on Table 2.

- Overall referral rate =  $261 / 1955$  = 13.4%
- Rate of referral in 3 year olds =  $8+2 / 443$  = 2.3%
- Rate of referral in 5 year olds =  $139+67+41+4 / 1512$  = 16.6%
- Rate of referral in children with 6/12 vision =  $147 / 258$  = 57.0%
- Rate of referral in children with 6/18 vision =  $67 / 92$  = 72.8%
- Rate of referral in children with ≥6/24 vision =  $43 / 52$  = 82.7%
- Refused referral rate =  $37 / 261+21+37$  = 11.6%



### Outcome of the Referral

Table 3 shows the number of cases with refractive errors and amblyopia in the 2 age groups. The data includes all cases whose outcomes could be traced, whether they had been referred to secondary centres or managed by the private sector.

Among the 1955 children, 189 children were confirmed to have refractive errors and / or amblyopia. This gave a prevalence rate of 9.7% who had at least one condition. One case referred was found to have exotropia. The prevalence of

refractive error was 9.5%. It was 2.3% in 3 year olds and 11.6% in 5 year olds. The difference between the two age groups was significant ( $Z=6.03$ ,  $p<0.01$ ). The prevalence of amblyopia was 1.5% (0.7% in 3 year olds; 1.7% in 5 year olds). The difference was not significant ( $Z=1.56$ ,  $p>0.10$ ).

### Correct-referral and Over-referral

261 children were referred to secondary centres (excluding cases managed by the private sector). However, the outcome of 16 children could not be

**Table 3: Number of Refractive Errors and Amblyopia in the 2 age groups**

Age Condition	3 - <4 years	4 - 6 years	Total
Refractive Error	10 +(0)	175 +(1)	185 +(1)
Amblyopia	0 +(3)	4 +(22)	4 +(25)
Total	10 +(3)	179 +(23)	189 +(26)

*The data includes all cases whose outcomes could be traced, whether referred to secondary centres or managed by the private sector.)*

*The figure in brackets represents the second condition of the children as one child can have more than one condition.*

### Calculation of Prevalence of Refractive Error and Amblyopia based on Table 3:

Rate of children confirmed to have Refractive Errors  
and / or Amblyopia  $= 189 / 1955 = 9.7\%$

Prevalence of Refractive Error  $= 186 / 1955 = 9.5\%$

Prevalence of Refractive Error  
in 3 year olds  $= 10 / 443 = 2.3\%$

Prevalence of Refractive Error  
in 5 year olds  $= 176 / 1512 = 11.6\%$   
( $Z= 6.028$ ,  $p<0.01$ )

Prevalence of amblyopia  $= 29 / 1955 = 1.5\%$

Prevalence of amblyopia  
in 3 year olds  $= 3 / 443 = 0.7\%$

Prevalence of amblyopia  
in 5 year olds  $= 26 / 1512 = 1.7\%$   
( $Z= 1.56$ ,  $p>0.10$ )

traced and 10 had unsure outcome. The outcome of the rest of the 235 cases are presented in Table 4. 76.6% were correctly referred. The over-referral rate was 23.4%. The over-referral rate in children with 6/12 vision was 33.8%, and was 9.2% in children with vision of 6/18 or worse.

### Repeat Tests

In the study, 166 children with abnormal vision (6/12 or worse) were not referred to secondary centres. They were cases who refused referral or were not referred by the staff for various reasons or preferred to be served by the private sector.

They were given appointments to return for a repeat test at the clinic within 3 months. Only 130 of these children actually came back for the repeat tests. Table 5 shows the cross tabulation of the result of the repeat test and their first vision test result in the clinic. Of the 108 cases of children with abnormal first vision test result, 66 cases had normal results in the repeat test, 41 cases remained abnormal and 1 case was not successfully tested. The 41 cases (2.1% of the total study sample) with two abnormal test results can be considered likely to be truly abnormal. Of the 22 cases who were not successfully tested at the first test, only 3 remained not successful, 18 had normal and 1 had abnormal repeat test results.

**Table 4: Cross Tabulation of Vision by Outcome in Referred Cases**

Outcome Vision	Normal	Refractive Error	Amblyopia	Others	Total
6/12	45	86	1 +(4)	*1	133
6/18	6	49	1 +(7)	0	56
≥6 / 24	3	37	2 + (7)	0	42
Not Successful	1	3	0	0	4
Total	55	175	4	1	235

*Figures in brackets represent the second condition of the children*

\* : A case of unilateral exotropia

### Legends:

**OUTCOME** = Outcome of referral as stated in the reply letters from secondary centres

**VISION** = Visual Acuity of the worse eye expressed in Snellen's equivalents

**Not successful** = Not able to carry out or complete visual acuity test

### Calculations based on Table 4:

Rate of correct-referral =  $175+4+1 / 235$  = 76.6%

Rate of over-referral in children with 6/12 vision =  $45/133$  = 33.8%

Rate of over-referral in children with ≥6/18 vision =  $6+3 / 56+42$  = 10.7%

**Table 5: Cross Tabulation of the First Vision Test and Repeat Test for Children who were not Referred.**

First Test \ Repeat Test	6/12	6/18	≥6/24	Not Successful	Total
Normal	55	10	1	18	84
Abnormal	33	7	1	1	42
Not Successful	1	0	0	3	4
Total	89	17	2	22	130

**Legends:**

- Repeat Test* = Repeat visual acuity test done in the clinic within 3 months of first test.  
*Normal* = 6/6, 6/9 vision both eyes or 6/9 in the worse eye  
*Abnormal* = 6/12 vision or worse in any one eye  
*Not Successful* = Not able to carry out or complete repeat visual acuity test  
*First Vision Test* = first visual acuity test done in the clinic with the result of the worse eye expressed in Snellen's equivalents  
*Not successful* = Not able to carry out or complete first visual acuity test

**DISCUSSION**

Screening of vision of 3 to 6 year old children by nurses in highly feasible. 93.4% of three year olds were successfully tested with Otago chart as shown in the first study. It is higher than the 80% success rate reported by Mary Sheridan in doing the similar Stycar chart in UK 3 year olds<sup>2</sup>. In the second study, the 83.9% success rate of 4 to 6 year olds tested with the linear Snellen's chart, is a surprisingly high success rate as the test is normally recommended for testing school children. This may have something to do with early exposure of Singapore preschoolers to numbers and letters.

The large group of eye defects cannot be detected without screening<sup>3,4</sup>. The high positive screen-out rate of abnormal vision (20.6%) and the relatively high prevalence of refractive error (2.3% in 3 year olds and 11.6% in 5 year olds), and amblyopia (0.7% in 3 year olds and 1.7% in 5 year olds) found during our second study confirmed the screening exercise as a rewarding one.

The screen-out rate of visual acuity of 6/12 or worse in 4 to 6 years old was 25.5%. It is higher than the 5.08% reported by an earlier local study of visual acuity in kindergarten children screened by their teacher, using Snellen's chart<sup>5</sup>. More recently in 1991, the School Health Service reported 18.4% of primary one school student screened to have 6/12 or worse vision<sup>6</sup>. Although both our study and school screening used Snellen's chart, it is likely that the false positive rate is higher in younger children as they are more difficult to screen. It is also possible that some of them develop towards normality as they grow older.

It was not the intention of our study to find the prevalence of refractive error and amblyopia of Singapore children. Our sample included only children attending MCH clinics and we did not have the financial resources to ensure diagnostic evaluation for a large sample of normal cases and all abnormal screened out cases. Moreover, in the second study, without special cooperation of all the referral centres, the diagnosis of refractive



error and amblyopia could only be loosely defined. The figures however, can be seen as an under-estimation of the true picture since the screened out cases who defaulted evaluation and all "normal" children were presumed to have no refractive error or amblyopia. We can say that, in screening the preschool population (excluding known cases of visual abnormality), *at least* 1.7% had amblyopia and 9.5% had refractive errors. In the MCH 1987 pilot study which used a liberal definition, 3.3% of preschool children was found to have amblyopia. The rate of 3.3% amblyopia was close to the 3.8% reported in a local study of 10 year old school children using a similar definition<sup>7</sup>.

The screen-out rate was associated with age and method of screening. It stresses the importance of careful choice of screening method and screen-out criteria in a screening programme. In the 1991 study, the screen out rate of 5 year old children was 6.7 times higher than children screened at 3 years of age despite the fact that the 3 year olds were supposed to be a higher risk group. The screen-out rate in 5 years old using Snellen's chart was 3.2 times higher than the Otago method at the same age. It is likely that the increased rate of abnormal vision from 3 to 5 years old was due to the higher sensitivity of the test used rather than an increased prevalence of abnormal vision alone.

When resources permit only one screen to be done at preschool age, it appears to be more cost effective to screen the children at a slightly older age when Snellen's chart can be used. However we do not know if the two years delay in detection and treatment of these children will make any difference in the final outcome.

The over-referral rate of 13.4% is acceptable and we should keep to the screen out criteria of 6/12. However in children screened with Otago chart, children with 6/9 vision must be followed up closely. For children with 6/12 vision, doing a repeat test will help to cut down on over-referral but there is a danger of losing some patients who do not return for the repeat test.

A local 1989 study<sup>8</sup> of 6556 18-19 year old males in the Singapore Armed Forces showed that the vast majority of the amblyopes were diagnosed late, at the age of 7 years or later, and only 4

subjects received treatment at the age of 6-7 years old and they were all unsuccessfully treated. In the seventies, the low coverage and low screen-out rate of 1% indicated an ineffective MCH vision screening program when these young men were preschoolers 15 years ago. Can we change this picture for our future army recruits? Today, vision screenings done in MCH still cover only about 60% of the birth cohort in Singapore. For the rest of the children, the first vision test is likely to be done only at Primary 1 in school. Should more resources be used to lower the first mass screening age for all Singaporean children?

The argument against screening at preschool is that the more severe visual abnormalities, which are unlikely to benefit from detection at preschool age, would have presented earlier. For this group, treatment needs to be very early in infancy to be effective<sup>9</sup>. Below two years old, conventional ways of screening for visual defects was found to be not useful<sup>10-12</sup>. Some newer methods for screening infants have been explored e.g. electrophysiologic tests, preferential looking method, photo-refraction. They are yet to be established as cost effective mass screening instruments<sup>13-15</sup>. The Health Ministry should closely monitor the progress of these newer methods for future programmes.

At 3 to 5 years old, we are aiming at screening out a larger group of milder, straight eyed amblyopia or amblyogenic conditions and they are likely to benefit from detection at preschool years. The Swedish studies<sup>4,16</sup> concluded the usefulness of population screening at 4 years old using linear acuity testing. There are obvious advantages of detecting and treating this group of children before they go to school. Besides gaining a few years in the sensitive period of treatment for amblyopia, the compliance should be better because the treatment will not interfere with school work. Even if the refractive error detected was mild and not amblyogenic, the screening visits can serve as an opportunity to educate the mother and child in establishing good visual practices before the child faces high visual demands in school.

However there is still doubt about the benefit of screening at 3 to 5 years old as compared to mass screening at school age<sup>17</sup>. Before a national

program, aiming to cover nearly all preschool children in Singapore can be justified, studies to prove that the detection and treatment of amblyopia is more effective at 3 to 5 year olds than in primary 1 (6 to 7 year olds) need to be done.

In the meantime, other methods, e.g. the Random-dot-E Stereotest<sup>18,10</sup>; and other eye charts like the one with confusion bars around the single optotype, should be explored in order to find a more sensitive yet cheap and simple test to replace the single optotype Otago chart for testing 3 year old children. There is a large group of preschool children who do not make use of MCH clinics. More children will benefit if the private sector also contributes to screening. We believe the experience of the MCH vision screening program as presented here, will encourage all doctors to offer visual screening to all preschool children they see.

#### ACKNOWLEDGEMENT

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#### Appendix 1

#### RISK HISTORY FOR VISUAL ABNORMALITY

A child is considered at "high risk" if any of the following points in the history is positive:

##### I Significant birth history:

1. Evidence of congenital infection
2. Prematurity (Birth weight < 1500 gm)
3. Birth asphyxia with oxygen therapy
4. Pregnancy with fever and rash or high fever

##### II. Family history (first and second degree relatives) of poor vision / squint:

5. Any one with squint
6. Any one has poor vision (unilateral or bilateral; not correctable with glasses) from young
7. Any one with high refractive errors (>5D) or started to wear glasses at preschool age or at first screening in Primary 1.

##### III. Abnormal visual behaviour

8. Parents suspected visual abnormality before screening
9. Observation of deviation of eye / eyes all the time or sometimes, e.g. when the child is tired or on looking far or near.
10. Furrows brows or squeezes eye lids to see
11. Must watch TV at very close range
12. Adjusts head position to see
13. Strongly objects to one eye being covered
14. Excessive tearing

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# HEALTH EDUCATION IN GENERAL PRACTICE ON LIFESTYLE-RELATED SUBJECTS: OPPORTUNITIES AND OBSTACLES

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**Abstract**—The role of health education in the primary care encounter between doctor and patient has received little attention to date. This study employed a postal questionnaire to survey the perceptions and practices of General Practitioners. Results showed that a large percentage of doctors attached high priority to a healthy diet (94.7%), exercise (90.6%) and not smoking (95.9%) as important preventive behaviours and a significant proportion actively initiated discussion with their patients with regard to lifestyle-related topics. Important barriers to health education were found to be a lack of time (58.7%) and poor patient cooperation (51.8%). Further research is needed in order to provide effective support for health education in primary care and to encourage its use as a tool in disease prevention and health promotion.

**KEYWORDS:** primary care, health-related behaviour, counselling, resources for health education

## INTRODUCTION

Lifestyle-related diseases, in particular heart disease and cancer, have emerged as major causes of morbidity and mortality in Singapore in the past two decades, together accounting now for more than two-fifths of all deaths in the population<sup>1</sup>. The risks factors associated with these chronic diseases are well-known, and include among them smoking, alcohol consumption, improper nutrition and physical inactivity<sup>2,3</sup>. Other significant causes of death and disability, namely injuries and mental illnesses have also been linked to personal behaviour such as safety practices and stressful lifestyles. In the light of the multifactorial nature of these diseases, it is apparent that the control of chronic degenerative diseases will involve reducing the levels of these diverse risk factors. Health education, which is an integral part of the overall health promotion strategy<sup>4</sup>, has a role both in increasing awareness of, and in preventing and changing harmful lifestyles. It has also been

recognized that, in order to be effective, preventive efforts must be aimed at both the 'high risk' individuals as well as the general population, with the aim of promoting healthy social norms<sup>5</sup>. Despite the call for interdisciplinary participation in health promotion<sup>4</sup>, the role of the General Practitioner in providing health education and advice on lifestyle-related subjects has received little attention to date.

Primary health care, being "first contact" and continuing care, offers a promising substrate for health education and prevention of diseases where lifestyle factors are important<sup>6</sup>. Doctors in primary health care have access to the majority of the population who are ambulant, mostly healthy or in the early stages of disease. The general practitioner who practises in a housing estate also has first-hand knowledge of the patient's family and environment. The one-to-one setting of a typical doctor-patient consultation has also been described as an ideal environment for effective lifestyle counselling<sup>7</sup>. In Singapore, it has been estimated that the private sector provides two-thirds to three-quarters of the total outpatient care. The majority (about 80%) of these attendances are to general practitioners. This underscores the frequency of contact between general practitioners and the public and the potential role they can play in

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preventive medicine. On the other hand, it has been said that doctors, by the nature of their training, are more 'disease-oriented' rather than 'health- or prevention-oriented'<sup>8,9</sup>, and that the busy practitioner has little time to think of behaviour and lifestyle counselling when dealing with his patients.

There has to date been no published local study on the attitudes and practice of general practitioners with respect to health education and disease prevention. This study, based on a self-administered postal questionnaire, has therefore been attempted with this in mind.

## SUBJECTS AND METHODS

The study population consisted of one-third of the total number of General Practitioners listed in the Medical Gazette of 1991, obtained by simple random sampling. Three hundred and twenty two doctors were selected. The survey was conducted by means of a postal questionnaire which was mailed to the clinics of each of these doctors, with a covering letter explaining the purpose of the study. Part I of the questionnaire elicited basic information on the nature of the practice setting and the type of patients seen. Part II included questions relating to the felt needs of the doctors with regard to support for health education activities. Although most questions were closed-ended, provision was made for the doctor to write in additional comments. The entire questionnaire was designed so that it could be completed within 15 minutes. To ensure confidentiality as well as to facilitate follow-up of non-respondents, each doctor was asked to return a 'response card' with his name and address separately from the completed questionnaire. A reminder letter with a second copy of the questionnaire was mailed a month later to non-respondents, and a final effort was made subsequently to contact by telephone those who had not returned their questionnaires.

The questionnaire was first mailed out on 3 September 1992 to the 322 doctors selected and this yielded 91 replies. A reminder letter was sent out on 23 October and further yielded 79 replies. In addition, 6 forms were returned by the postal department. The final response rate was 53.8%.

All 170 replies received were found to be complete. Data entry was performed using DBase III plus and the SAS package for personal computers was used for the analysis.

## RESULTS

### Characteristics of Respondents

Of the 170 respondents, the proportion in single (51.5%) and group (48.5%) practices were nearly equal. The majority (86.5%) of the doctors had a patient population spanning all age groups, while a further 4.7% saw mainly working age adults. The remaining 7.5% indicated that more than 50% of their practice was confined to a particular age-group, i.e. children, women or the elderly. About one-third (31.2%) of the respondents saw more than half of their patients under contract.

The year of graduation of the responding GPs and the number of years spent in private practice are shown in Table 1. The distribution of respondents with respect to their year of graduation was compared with that of the sample population and the total general practitioner population in Singapore to detect a possible selection bias. There was no significant difference found (chi-square = 0.90 ( $p = 0.82$ ) and 0.73 ( $p = 0.87$ ) respectively).

TABLE 1. Profile of Respondents by Year of Graduation and Number of Years in Private Practice

Characteristic	Percent (number)
1. Year of Graduation	
Before 1960	11.8% (20)
1960 - 1969	21.2% (36)
1970 - 1979	34.1% (58)
1980 and later	27.6% (47)
Not stated	5.3% (9)
2. Number of years in private practice	
5 years or less	16.5% (28)
6 - 10 years	22.9% (39)
11 - 15 years	20.6% (35)
16 - 20 years	13.5% (23)
> 20 years	22.9% (39)
Not stated	3.5% (6)
Total	100.0% (6)

Just over three-quarters (78.8% or 134) of the respondents received their basic medical training in Singapore, a further 10.1% in Malaysia, Hongkong and other parts of Asia, 7.1% in the United Kingdom and 3.5% in Australia. Altogether, 21 (12.3%) doctors had postgraduate training. Twelve doctors (7.1%) were either Members or Fellows of the College of General Practitioners and 5 (2.9%) possessed a Master of Medicine degree or equivalent.

### Lifestyle-related Factors

Respondents were asked to assign health-related behaviours according to whether they personally considered these of 'very high', 'high' or 'low' priority or 'unimportant' in promoting health. These were selected, with the exception of two, to

reflect the targets set by the Review Committee on National Health Policies<sup>10</sup>. The results shown in Table 2 indicate that not smoking, limiting saturated fats and excess calories, and exercising were considered by more than 90% of respondents to be of at least 'high' priority. In contrast, about 30% of responding GPs considered moderating salt and alcohol consumption of 'low' priority or 'unimportant'. Respondents were also asked about the extent to which they discussed matters of lifestyle and health-related behaviour with their patients, by specific topics (Table 3). 80% indicated that they would broach the subject of smoking even if this was unrelated to the presenting complaint. Diet (65.5%) and exercise (65.2%) were ranked next. Fewer said they would do the same for topics like stress and job or career.

**TABLE 2. Priority attached to various Health Related Behaviours in promoting the Health of the average Person**

Health-related behaviour	Total high <sup>a</sup>	Very high priority	High priority	Low/unimportant	n
Eliminate cigarette smoking	95.9 <sup>b</sup>	61.5	34.3	4.1	169
Avoid foods high in saturated fats / cholesterol	94.7	28.4	66.3	5.1	169
Avoid excess calories	91.6	18.9	72.7	8.4	169
Engage in regular exercise	90.6	24.1	66.5	9.4	170
Avoid undue stress	84.0	18.5	65.5	16.1	168
Decrease salt consumption	71.5	6.0	65.5	28.6	168
Drink alcohol moderately or not at all	68.6	14.8	53.8	31.4	169
Use a seat belt	51.8	17.9	33.9	48.2	168
Get seven hours of sleep a night	39.1	6.5	32.5	61.0	169

<sup>a</sup> includes percentage listing behaviour as 'very high' and 'high' priority

<sup>b</sup> percentage of respondents (n is the total number of respondents)



**TABLE 3. Distribution of GPs by Extent to which They ask their Patients about Lifestyle-Related Subjects**

Lifestyle-related subject	Even if unrelated to presenting complaint		Only if related to presenting complaint	n
	high-risk patients only	all patients		
Smoking	49.7 <sup>a</sup>	29.7	20.6	165
Diet and Nutrition	57.0	8.5	34.5	165
Physical exercise	45.7	19.5	34.8	164
Alcohol intake	50.6	10.4	39.0	164
Stress	47.2	10.4	42.3	164
Job and career	15.1	33.7	51.2	166
Home environment	29.9	9.1	61.0	164
Drug abuse	28.0	6.0	66.1	164
Travel and holidays	17.7	3.7	78.7	164
Hobbies or pastimes	14.6	4.3	81.1	164

<sup>a</sup> percentage of respondents (n is the total number of respondents)

#### Most Important Sources of Health Education Materials

Respondents were asked to 'score' the five listed sources of health education materials from 1 (most important) to 5 (least important). Almost half (47.1%) of respondents reported that their most important source of health education materials was the Training and Health Education Department of the Ministry of Health, followed by publications or pamphlets from other sources. About one fifth depended on newspaper articles and periodicals (Table 4).

**TABLE 4. Most Important Source of Health Education Materials**

Source	% rated most important <sup>a</sup>
Training and Health Education (THE) materials	47.1%
Health education publications / booklets	19.0%
Articles from newspapers or periodicals	17.8%
Pamphlets supplied by drug companies	11.2%
Articles from medical journals	9.6%

<sup>a</sup> column total is greater than 100 as some respondents rated more than one source as 'most important'

#### Topics most Commonly Distributed

Respondents were also asked to list the topics they most commonly distributed and it was found that tertiary prevention of chronic diseases such as hypertension, diabetes and asthma were frequently distributed, constituting 27.6% of all the topics cited. Dietary advice (18.7%), in particular, cholesterol-related literature) and general suggestions for a healthy lifestyle (11.4%) were second and third on the list. (Table 5).

**TABLE 5. Health Education Literature by Topics Most Commonly Distributed by General Practitioners:**

Percent of all Topic	topics cited (%)
Hypertension, diabetes, asthma	27.6
Diet and nutrition	18.7
Healthy lifestyles and related topics	11.4
Cancer Screening	7.0
Hepatitis B	6.7
AIDS and STD	4.7
Antenatal care, infant feeding	3.6
Immunization	3.3
Others	17.0

### Obstacles Perceived by General Practitioners

The responses to a question requiring doctors to classify a suggested list of hindrances to health education as 'major obstacle', 'minor obstacle' and 'not a problem' are listed in Table 6. In the main, it emerged that more than half (58.7%) felt that time was a major constraint, and a lack of

interest and / or compliance on the part of the patients was similarly highlighted (51.8%). A smaller percentage felt that more could be done in the provision of health education material and in making accessible self-help facilities (eg. smoking cessation clinic) to which they could refer patients.

TABLE 6. Obstacles Perceived by General Practitioners in Health Education

Obstacle	Major obstacle	Minor obstacle	Not a problem	n
Lack of time	58.7*	26.3	15.0	167
Poor patient cooperation	51.8	38.8	9.4	170
Lack of coordinating with self-help facilities (e.g. smoking cessation clinic)	46.3	41.5	12.2	164
Lack of health education materials	41.9	44.7	11.4	167
Lack of staff	33.1	44.6	22.3	166
Lack of economic incentive	15.1	52.4	32.5	166
Fear of intruding on patient's freedom / right of choice	12.6	49.1	38.3	167
Lack of expertise / training	11.5	58.8	29.7	165
No confidence in efficacy of intervention / counselling	10.8	49.7	39.5	167

\* percentage of respondents

TABLE 7. Areas of Need Perceived by General Practitioners with Respect to Practice of Health Education

Areas of need	Total Needed*	Very much needed	Much needed	Hardly / Not needed	n
Assistance in the form of :					
Pamphlets for distribution	89.2*	34.1	55.1	10.8	167
Seminars for doctors (eg nutrition)	78.3	9.6	68.7	21.7	166
Training in behaviour modification skills	60.1	11.7	48.5	39.8	163
Training for support staff	55.2	6.7	48.5	44.9	165
Printed risk factor questionnaires	52.4	8.5	43.9	47.5	164
Videotapes to show patients	38.0	8.0	30.1	62.0	163
Information for doctors on these topics:					
Diet	83.7	22.3	61.4	16.3	166
Child behavioural problems	80.4	22.1	58.3	19.7	163
Cancer detection and prevention	80.1	27.3	52.8	19.9	161
Infant and child nutrition	75.2	18.0	57.2	24.8	161
Exercise and fitness	73.2	15.2	57.9	26.9	164
Stress	72.4	20.2	52.1	27.6	163
Marital / interpersonal relationships	67.3	17.6	49.7	32.8	165
Antenatal care	61.2	10.6	50.6	38.8	160
Smoking	60.7	12.3	48.5	39.3	163

\* includes percentage of respondents citing as 'very much' or 'much' needed

<sup>b</sup> percentage of respondents

### Assistance needed

Among the types of assistance that the largest percentage of responding doctors felt were 'very much' or 'much' needed were the provision of health education literature for patients (89.2%) and the organization of seminars for doctors on related topics such as diet and nutrition. About 60% expressed a need for training in counselling or behavioural modification skills.

When asked which areas respondents themselves felt in need of more information on, the largest percentage indicated a 'need' in the areas of diet (83.7%), child behavioural problems (80.4%) and cancer detection and prevention (80.1%).

## DISCUSSION

### Response Rate

This survey aimed to provide a general overview of the opportunities and perceived barriers to health education among Singapore General Practitioners. Certain limitations must be considered, however, in interpreting the findings: the response rate was only slightly over 50%, despite what we felt was near-optimal follow-up of non-responders. This may be because the survey was carried out by post, a method which we felt was the only logistically practical one. Three similar surveys<sup>11-13</sup> in the United States and Canada yielded response rates of between 55 and 76%. It is likely that the GPs who responded represent those more inclined to the practice of health education and this poses a limitation in attempting to extrapolate the results to the GP population as a whole.

### Diet, Smoking and Exercise

The results of the study indicate that diet, smoking and exercise are the areas most emphasized among the group of General Practitioners studied. This probably reflects the emphasis on these aspects of a healthy lifestyle in the Ministry of Health's recent campaign, and the recognition of these as determinants of several chronic diseases and their control. Eighty percent of GPs routinely asked about smoking, and 65% reported that they asked their patients about diet and exercise even if this was unrelated to the presenting complaint, although their efforts were concentrated on 'high risk' patients, presumably sufferers of heart disease, hypertension, or the overweight. 'Diet' was also the topic that most doctors thought they needed more information on, with 83.7% rating this as 'very much' or 'much' needed.

### The Lack of Time, and Patients' Previous Beliefs as Obstacles.

The notions that time, or the lack of it, poses an important constraint on the practice of health education is borne out by 85% of the responding GPs, two-thirds of whom rated it a 'major obstacle', and one-third a 'minor' one. Although no fee is charged for an additional dose of lifestyle advice during the consultation, only 15% of respondents regarded this as a major obstacle, while a further 52% said it was a minor obstacle. The problem of poor patient cooperation was a prominent one, and several doctors commented further on this citing patients who cling on to their cultural or religious beliefs concerning health and disease as the most difficult to counsel or educate, especially when the advice is contrary to previously held beliefs.

### Resources for Health Education

It is also important to note the the GP needs resources. The main resources needed are pamphlets, as well as seminars and training in behavioural modification. In addition, at least 60% of the GPs surveyed perceived a need for more information on the various topics cited for the purpose of educating their patients.

## CONCLUSION

In conclusion, the results of the survey are generally encouraging, with a good proportion of doctors indicating both an interest, and substantial effort in health education. The Training and Education Department must be commended for their role in encouraging this by providing literature for doctors to give to their patients. With an increasingly educated and health-minded public, there is a need for more research into the patient's perceptions of their family doctor's role in providing counselling and education, and into the role of General Practitioners in the wider scheme of health promotion, which includes social and environmental aspects. Given the present emphases in health care, it is likely that the practice of health promotion and disease prevention in primary care will become even more prominent in the near future.

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## HOME STUDY SECTION

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# CHOOSING A DRUG FOR THE BLOCKED NOSE

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### SUMMARY

A blocked nose is a symptom in search of a diagnosis. Correct diagnosis will automatically lead on to choice of the appropriate treatment modality be it pharmacological, surgical, immunological or any combination. Once it is decided that pharmacological therapy is required, the practitioner has to select the appropriate class(es) of drugs. This includes antihistamines, decongestants, combinant antihistamine decongestants, steroids, cromolyn or even saline. Following selection of the appropriate class of drugs, the next step would be to choose from within the wide array of drugs within that class.

This discussion will focus on factors like efficacy, side effects, frequency of prescribing, cost and polypharmacy. There can be no ideal drug(s) but consideration of these factors will enable the practitioner to formulate his own choice(s) for the various clinical and socio-economic situations.

### INTRODUCTION

When faced with a problem of a patient complaining of a blocked nose, the practitioner first and foremost has to make a diagnosis. The commonest considerations would be infective conditions like a rhinitis or a rhinosinusitis, allergy, vasomotor rhinitis, anatomical causes like a deviated nasal septum and even adenoids in the post nasal space. All these conditions could be diagnosed based on a good history and detailed physical examination. The focus of this article is not on making a diagnosis, but it is important to mention that one should not miss foreign bodies in the nose, neoplasms or granulomas as these are eminently treatable conditions. Some factors which might increase the degree of suspicion that one is not dealing with the commoner considerations are in the following:

(i) the elderly individual

(ii) a person who complains of a unilateral obstruction, symptom of epistaxis, eye or dental symptoms and associated neck swelling.

All these should remind the doctor to be particularly careful in coming to a diagnosis.

The correct diagnosis will automatically lead on to choice of the appropriate treatment modality, and this is usually pharmacological, surgical, immunological or radiotherapy or even a combination of modalities. I mention this not just for completeness, but also as a reminder that although the rest of this discussion will focus on drugs, there are other modalities of treatment which may be more appropriate to a particular situation.

### CONSIDERATIONS IN PRESCRIBING

Having decided that one is going to start using the pharmaceutical modality, there are some general considerations in prescribing. Choose a drug with the following attributes:

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*Consultant Ear Nose Throat Surgeon*  
*Ear Nose & Throat and Allergy Clinic*  
*Mount Elizabeth Medical Centre*  
*Singapore 0922*

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- (i) Efficacious for the major symptom complained of, in this case, the blocked nose.
- (ii) Drug with minimal or no side effects
- (iii) Use the least number of medications to achieve the desired effect rather than polypharmacy.
- (iv) Use a drug which needs to be given few times a day rather than more
- (v) Last but not least is the cost consideration

There can be no perfect drug, but based on these considerations the most appropriate can be chosen. It is a very important point too to review the usefulness of your medications at the follow up with the patient and if you are not getting the desired effect at follow up, then you must reassess the correctness of your original diagnosis or whether there may be any complicating factors like an infection in an allergic person. If your diagnosis is not at fault, then the next step is to review the medication, whether it might need to be changed, whether it has been actually taken and in the right doses, or whether you might need to alter the dosage concerned. Coming to specifics, it is convenient to deal with the various drug groups individually and consider when each might be used.

### ANTI-HISTAMINES (H1)

H1 antihistamines are effective for sneezing and rhinorrhea, but are less so for the blocked nose and headache. This group of drugs is well absorbed orally. Onset of relief usually happens within 30 minutes to 1 hour and although there is some decrease in effectiveness with prolonged use of these agents, substantial degrees of tolerance do not generally develop. It is worth noting that tolerance to the sedative effects, however, may develop and this is obviously an advantage. The major side effects are the anticholinergic and central nervous system effects. Adverse anticholinergic effects include dryness of the mouth, nose and throat, urinary retention, impotence, visual disturbances, blurred vision, nervousness and irritability. The effect on the central nervous system is usually one of depression and this includes sedation, dizziness and disturbed

coordination. Children particularly, however, may experience paradoxical central nervous system excitement characterized by restlessness and insomnia. Patients should be warned about the effect of alcohol intake and also against performing potentially hazardous tasks requiring mental alertness or physical coordination while on medication.

From a practical view point, antihistamines may be divided into 4 groups based on sedating potential (see Table 1). Comparative antihistamine studies generally show that hydroxyzine, chlorpheniramine and dexchlorpheniramine are the most effective of the antihistamines. As you can see from the cost per day column, these are also the cheaper drugs; however, they do have a propensity for causing sedation, and if this is a problematic side-effect then one should look at the drugs in the rarely sedating and non-sedating groups. Cardiac ventricular arrhythmias have been reported in connection with astemizole or terfenadine usage. The United States Food and Drug Administration has advised that astemizole should not be given in patients with significant liver disease. The Food and Drug Administration has also issued a warning on excessive doses of terfenadine in the presence of liver disorder or in combination with the antifungal ketoconazole or

Table 1. Antihistamine Selection

Cost Rating /Day		
<b>Usually Sedating</b>		
Atarax	(Hydroxyzine)	+
<b>Sometimes Sedating</b>		
Piriton	(Chlorpheniramine)	+
Polaramine	(Dexchlorpheniramine)	+
<b>Rarely Sedating</b>		
Zadine	(Azatadine)	++
Semprex	(Acrivastine)	++++
<b>Non Sedating</b>		
Hismanal	(Astemizole)	++
Clarityne	(Loratidine)	+++
Teldane	(Terfenadine)	++++

\* Cost rating / day is placed on a progressive scale from cheapest (+) to most expensive (++++)

with erythromycin. It is worth noting that both of these antihistamines are still considered very safe drugs when used as directed.

### DECONGESTANTS

This is the next class of drugs and this may be in the oral or topical forms. Most forms are effective for the blocked nose. The component in the oral form is usually phenylpropanolamine or pseudoephedrine. It may be given alone, or as is commonly used, in combinations with antihistamines. The whole idea of combinations of antihistamines and decongestants is to draw on the different effects of both drugs. Decongestants are most appropriate for short term usage only due to their stimulant systemic central nervous system effects and pressor cardiovascular effects. Their indications therefore are in acute rhinitis, acute sinusitis, acute otitis media, intermittent eustachian tube obstruction and before air travel in the individual at risk. There is little rebound with the oral decongestants. There are a variety of combinant forms (see Table 2), and this is certainly not a complete list). Drugs like Fenfedrin and Dimetapp are relatively cheap and do work. However, they can draw the sedating side-effects from its antihistamine components and if this is a problem, medications like Trinalin or Clarinase would be the choice due to their lesser or even non-sedating antihistamine components. If both

sedation and cost are a problem then a cost-saving tip would be to prescribe the morning dose of Trinalin or Clarinase, and in the night when sedation would not be a problem to prescribe one of the cheaper combinant medications.

The topical decongestion medications have the same indications but here even more so, it must be stressed that they should not be used for more than one or at the most two weeks at a time. This must be pointed out to the patients because often they will continue to use the medications on their own for a prolonged period of time due to the immediate relief offered. The decongestants available fall into two groups: catecholamines like epinephrine and phenylephrine or imidazolines like oxymetazoline and xylometazoline. This leads in the early stage to paralysis of the ciliary lining, rebound congestion and subsequently rhinitis medicamentosa. The topical decongestants do not commonly cause systemic sympathomimetic effect and the imidazoline derivatives are even less likely to do so compared to the catecholamine types.

It is worth mentioning that the position of the patient is important when applying topical nasal drops. One recommended position is to have the patient lie on the couch with a pillow under the shoulders thus extending the neck, and then having the nasal drops inserted and asking the patient to remain in that position for at least a minute. This position allows exposure of the whole nasal cavity to the drops. The usual position that most patients assume of applying the drops when in the standing position is not as favourable, for often the drops will just pass through the nose and straight into the nasopharynx and oropharynx.

### CROMOLYN

Intranasal cromolyn is mentioned as an agent which stabilizes mast cells. It is good for sneezing, rhinorrhea and itch, but has lesser effect of the blocked nose. It may take several weeks for its effect and several comparative studies have shown less effectiveness for intranasal cromolyn in comparison to the intranasal steroids. There are, however, few adverse effects but the problem may be with compliance because of its recommended 4 to 6 times a day usage.

**Table 2. Combinant Antihistamine - Decongestants**

Cost Rating /Day		
Fenfedrin	(Pseudoephedrine+ Chlorpheniramine)	+
Dimetapp	(Phenylpropanolamine+ Phenylephrine+ Brompheniramine)	+
Decolgen	(Phenylpropanolamine+ Chlorpheniramine)	++
Trinalin	(Azatadine+ Pseudoephedrine)	+++
Clarinase	Loratadine+ Pseudoephedrine	++++

\* Cost rating / day is placed on a progressive scale from cheapest (+) to most expensive (++++)

## STEROIDS

One should be very selective in the use of systemic steroids in nasal conditions. They are best reserved for severe exacerbation of nasal sinus inflammation and polyp conditions, particularly as a pre-operative preparatory mechanism or in the immediate post-operative state. This is due to their many associated adverse effects and also the fact that ultimately they are not curative. The topical steroids on the other hand are the mainstay of use not only in the blocked nose but also for the other symptoms of rhinorrhea, itch, sneezing and ocular related symptoms. They have a high topical anti-inflammatory activity and response is obtained within a few days. They are, however, ineffective in viral rhinitis and also are best administered on a regular basis. They are indicated in the patient with a longer history. There are no systemic side effects if given in the recommended dosages. Dosages of beclomethasone dipropionate below 1600 micrograms a day do not cause suppression of the hypothalamic pituitary adrenal axis. The local side-effects relate mainly to dryness, stinging, burning, transient sneezing and very occasionally haemorrhage and crusting leading to the extremely rare complication of septal perforation. The patient should be advised to clear the nasal airway before use, meaning that he should be instructed to blow his nose before spraying. The spray should be directed on to the turbinates, one on to the lower and one on to the upper areas. The patient should be cautioned against directing the spray on to the nasal septum. Comparative steroids studies do not suggest any significant difference between comparative dosages of beclomethasone dipropionate and flunisolide. Budesonide however has been shown to be slightly more potent. Fluticasone propionate is the newest entrant with a once-a-day dosing schedule (Table 3). Topical steroids are potent medications and if there is a failure of response then reconsider your diagnosis or think of additional complications such as infection.

Finally, it is worthwhile reminding that nasal hygiene is often forgotten but most valuable. The

patient can be taught how to self-irrigate his own nostrils with warm salt water, and if this is done once or twice a day there is considerable symptomatic relief. In addition, steam inhalation is also good for symptomatic relief.

Table 3. Topical Steroids

		Cost Rating /Day
Aldecin	(Beclomethasone dipropionate)	+++
Rhinalar	(Flunisolide)	+++
Rhinocort	(Budesonide)	++++
Beconase	(Beclomethasone dipropionate)	++++
Flixonase	(Fluticasone propionate)	+++++

\* Cost rating / day is placed on a progressive scale from cheapest (+) to most expensive (+++++)

## CONCLUSION

The most useful drugs available for the blocked nose are the decongestants and the topical steroids. Antihistamines and cromolyn are not as effective for the blocked nose symptom. The decongestants are best limited to short term prescriptions while the topical steroids can be used for longer term. Combination of a decongestant and a topical steroid gives greater effect than either drug alone and can be considered for short term use in the more severely affected cases.

## References

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## X-RAY QUIZ

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*Submitted by Dr Ng Hweena  
MBBS (S'pore), FRCR (UK)*

Skull X-ray

History:- 65 year old lady radiographed for head injury



1. What is the abnormality?
2. What are your differentials?

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#05-09 The Promenade  
300 Orchard Road  
Singapore 0923*

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*Answers on next page*



## X-RAY QUIZ ANSWERS

### 1. Answer:

The lateral view shows a large homogeneous area of sclerosis at the frontal aspect of the cranium. The margins are well defined with narrow zone of transition. No evidence of fractures. No radiological evidence of chronically raised intracranial pressure.

### 2. Differentials:

Those of bone origin

- **Developmental:-**

Fibrous Dysplasia  
Benign hyperostosis

- **Neoplastic:-**

Osteoma  
Metastatic - lytic metastases after treatment may be dense.  
e.g. breast, lymphoma.

- **Inflammatory:-**

Paget's Disease

- **Depressed fracture:-** Due to overlapping fragments.

Adjacent to bone

- Meningioma.  
Old calcified cephalhaematoma  
Other soft tissue tumour:- e.g. Neurofibroma  
or calcified sebaceous cyst.  
Artifact e.g. Oil coated hair bunch.

**Diagnosis:-** This is a typical benign hyperostosis also known as Hyperostosis Frontalis Interna. Cause is unknown. It is of no clinical significance. It is commonly seen in post-menopausal women (rare in men) mainly involving the frontal region. It is characteristically bilateral and symmetrical, thickening of the inner table - "choppy sea" appearance

Fibrous Dysplasia commonly involves the base of skull and facial bones before cranial changes are seen.

Neoplastic processes tend to have less well defined margins i.e. wide zone of transition except for osteoma. History of a known primary malignancy will be of help.

Paget's disease usually involves thickening of skull vault (2-5 times normal). There will be loss of differentiation between the inner and outer tables. Facial bones may be involved.

Depressed fractures are usually more linear and require confirmation with a CT scan and/or Tangential views.

The sclerosis in pathology arising from structures adjacent to bone is usually less homogeneous than that seen here.



## NEW BOOK ANNOUNCEMENTS

### **Cardiovascular Disease Risk Factors: New Areas for Research**

*Report of a WHO Scientific Group*

Technical Report Series, No. 841

1994, vi + 53 pages

ISBN 92 4 120841 4

This report identifies and assesses specific research areas where further investigation promises to yield better knowledge about the risk factors for cardiovascular disease and the most effective strategies for prevention. Addressed to scientists and research administrators, the report concentrates on new strategies for studying a number of established or suspected risks in order to clarify their significance as either predictors of disease or factors causally linked to pathogenic mechanisms. The "classical" risk factors, such as high serum cholesterol levels, hypertension, and smoking, are not considered.

The report concentrates on research aimed at finding causal pathways in a chain moving from genes and the environment, through biochemical and other bodily changes, to pathological alterations and clinical disease. Major emphasis is placed on the identification of risk factors for coronary heart disease.

The main part of the report identifies ten promising new areas for further study. For each, a review of the scientific background is followed by a discussion of implications for prevention and control and precise recommendations for further research. These areas include

nutritional factors, such as plant foods and antioxidants, and metabolic factors, including the possible roles of newly identified lipoprotein phenotypes, insulin resistance, and high levels of plasma homocysteine. Haemostatic factors are also considered, with particular attention given to the roles of fibrinogen, coagulation factor VII, platelet number, and fibrinolytic modulators. Other areas explored include biological mechanisms that help explain the protective role of alcohol, the characteristics of physical activity that lead to reduced risk, and current work on the development of DNA markers for the detection of persons with a genetic susceptibility to coronary heart disease.

Special attention is given to the need to study how hormone replacement therapy affects cardiovascular disease in women and to assess its potential benefits against the possible risks of endometrial and breast cancer. The final section discusses social, cultural and psychosocial factors that might explain the marked differences in mortality observed in different groups both within and between countries. The report concludes with a series of 28 precise conclusions and recommendations intended to guide the design of future studies and the establishment of research priorities.

### **Nursing Beyond the Year 2000**

*Report of a WHO Study Group*

Technical Report Series, No. 842

1994, iv + 21 pages

ISBN 92 4 120842 2

This report considers the ways in which the roles and functions of nurses and midwives will need to change in order to meet new challenges in health care, exploring the many factors that will shape the demand for health care in a climate characterized by growing needs and expectations, escalating costs, and dwindling resources.

The report opens with a brief review of the implications of poverty differences within and between countries, population displacement, and epidemiological and demographic transitions resulting in a growing number of elderly people and an increase in chronic illness, followed by an analysis of changing trends in nursing and midwifery and their implications for nursing practice, education and research. Problems addressed include the enormous shortage of community nurses, the need for highly educated nurses contrasting with the possibility that enhanced formal education might limit the ability of countries to provide low-cost health care, and the lack of research documenting the efficacy of nursing care activities, especially in

relation to health outcomes.

Three closely linked elements that will affect the future development of nursing are identified: a lack of formal power to participate in the formulation of health care policies; the universal status of nursing as "women's work" with the corresponding low pay, low status and poor working conditions; and the prestige associated with the practice of medicine in high technology environments. In view of the trend towards increasing self-care, the report predicts that nurses will have an expanded role as facilitators of self-care.

To meet the health care needs of the future, the report concludes that resources will need to be carefully used, interventions will need to be targeted at groups where they will have the greatest effect, and the health care system will need to be less hierarchical. The report further concludes that the contribution of nurses to the health care systems of the future is likely to be even more varied than today.

# GUIDELINES FOR AUTHORS

## THE SINGAPORE FAMILY PHYSICIAN

Authors are invited to submit material for publication in the Singapore Family Physician on the understanding that the work is original and that it has not been submitted or published elsewhere.

The following types of articles may be suitable for publication: case reports, original research work, audits of patient care, protocols for patient or practice management and review articles.

### PRESENTATION OF THE MANUSCRIPT

#### The whole paper

- \* Normally the text should not exceed 2000 words and the number of illustrations should not exceed eight.

Type throughout in upper and lower case, using double spacing, with three centimetre margins all round. Number every page on the upper right hand corner, beginning with the title page as

1. Make all necessary corrections before submitting the final typescript. Headings and subheadings may be used in the text. Indicate the former by capitals, the latter in upper and lower case underlined.

Arrange the manuscript in this order: (1) title page, (2) summary, (3) text, (4) references (5) tables, and (6) illustrations.

- \* Send three copies of all elements of the article: summary, text, references, tables and illustrations. The author should retain a personal copy.

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- \* The title should be short and clear.
- \* Include on the title page first name, qualifications, present appointments, type and place of practice of each contributor.
- \* Include name, address and telephone number of

the author to whom correspondence should be sent.

- \* Insert at the bottom: name and address of institution from which the work originated.

#### The summary

- \* The summary should describe why the article was written and give the main argument or findings.
- \* Limit words as follows: 100 words for major articles; 50 words for case reports.
- \* Add at end of summary: an alphabet listing of up to 8 keywords which are useful for article indexing and retrieval.

#### The text

The text should have the following sequence:

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Drugs must be referred to generically; all the usual trade names may be included in parentheses. Dosages should be quoted in metric units.

Laboratory values should be in SI units with traditional unit in parentheses.

Do not use patient's names, initials or hospital numbers.

- \* Results: Present results in logical sequence in the text, tables and illustrations.

- \* Discussions: Emphasise the new and important aspects of the research and the conclusions that follow from them. Indicate the implications of the findings and limitations. Relate the observations to other relevant studies.

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### Further reading

1. INTERNATIONAL COMMITTEE OF MEDICAL JOURNAL EDITORS. Uniform requirements for manuscripts submitted to biomedical journals. *Ann Intern Med* 1988; 108:258-265.
2. Bailar III J C and Mosteller F. Guidelines for Statistical Reporting in Articles for Medical Journal(s). *Ann Intern Med* 1988;108:266-273.

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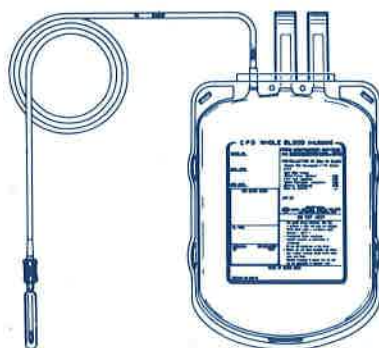
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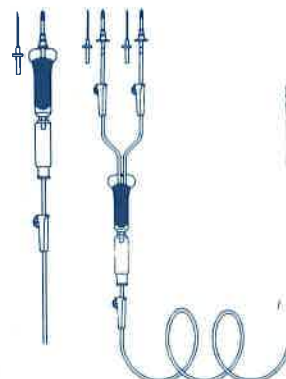
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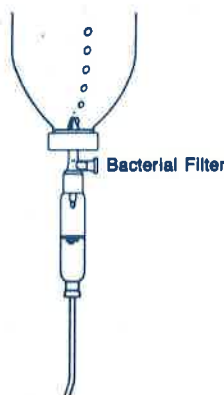
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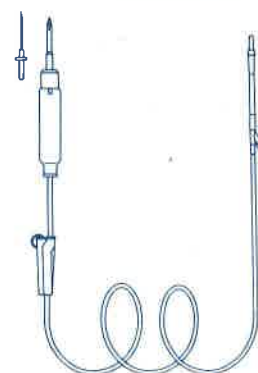
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<sup>†</sup> S-26 Health Professional Handbook, 3rd ed. Wyeth-Ayerst International Inc., December 1990.  
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