• Infection around the tube, and ototo-
  rhoea secondary to middle ear infec-
  tion (could be viewed as a
  side-effect of grommets).

The most common negative conse-
quence associated with the insertion of
grommets is permanent scarring of the
tympanic membrane (tympanosclero-
sis), which occurs in 30 - 50% of
patients. However, it almost never
causes significant hearing loss and is
therefore of no clinical consequence.
Permanent perforations occur in as
few as 3% of patients and are often
seen in conditions requiring long-term
ventilation tubes.

The side-effects associated with grom-
mets are often more troublesome. The
most frequently encountered side-effect
is secondary infection — in up to 30%
of patients. This is associated with
ototrhoea, which, apart from being
socially unacceptable, may also cause
blocking of the tube. This, in turn,
could promote earlier extrusion of the
tube, and/or be associated with a per-
manent small perforation. Aural toilet
in combination with antibiotic steroid
drops is helpful for this condition.

Small perforations after insertion of
grommets need to be dealt with on an
individual basis, as they may either be
left or repaired later by tympanoplas-
ty.

Summary
• Most cases of OME spontaneously
  resolve over a period of time (from
  3 to 6 months).
• When indicated, the insertion of
grommets remains a very useful
  intervention for the following rea-
  sons:
  1. it is a minor procedure
  2. the associated side-effects/com-
     plications are minimal
  3. it is of great value in normalis-
     ing hearing thresholds
  4. it therefore assists with speech
     development in these children
  5. it may allow a child to ‘out-
     grow’ Eustachian tube dysfunc-
     tion, and thus avoid anatomical
     changes to the tympanic mem-
     brane such as retraction/atro-

Conclusion
In private practice OME remains one of
the most commonly seen conditions and
the grommets have become one of
our most effective ways to manage this
condition.6

References available on request.

SNORING — MORE THAN A SOCIAL NUISANCE!

ISMAIL A Patel, MB BCh, FCORL (SA)
Consultant Specialist, ENT Department,
University of the Witwatersrand and
Christ Hanri Baragwanath Hospital,
Johannesburg

SYLVESTER D MASEGE, MB BCh,
FCORL (SA), DCH
ENT Specialist: Anglogold Health
Service, Carletonville

Snoring is an undesirable sound origin-
nating from the soft tissues of the
upper airway during sleep. It has
more often than not been part of a
social dogma that has plagued society
through the sands of time. However, it
is a manifestation of a large group of
sleep disorders loosely termed sleep-
disordered breathing (SDB). SDB is a
broad term encompassing obstructive
sleep apnoea (OSA), obstructive sleep
hypopnoea (OSH), excessive daytime
somnolence and upper airway resist-
ance syndrome (UARS).

There are numerous sleep disorders
that are organised in the International
Classification of Sleep Disorders by
the American Sleep Disorders
Association. The predominant prob-
lems that may warrant a patient seek-
ing assessment and possible surgical
intervention is snoring (adults) and
obstructive sleep apnoea (adults and
children). A brief approach to under-
standing these conditions is discussed
with special attention being paid to
clearly defining certain sleep disor-
ders.

Definitions
• Snoring: noisy breathing arising
  from upper respiratory tract during
  sleep.
• Hypopnoea: nasal airflow falling
  by 50 - 75% for longer than 10 sec-
  onds.
• Apnoea: nasal airflow falling by
  > 75% for longer than 10 seconds.
• Obstructive sleep apnoea
  (OSA): cessation of airflow at the
  nose or mouth for at least 10 sec-
  onds.
• Apnoea/hypopnoea index
  (AI): number of apnoea/hypopnoea
  episodes in 1 hour.

OSA is a sleep disorder in which there
are repeated reductions or cessations
in airflow at the nostrils or mouth
and can be either central, obstructive
or mixed. In obstructive apnoea there
is absence of airflow with continued
inspiratory effort and in central
apnoea there is no inspiratory effort
— the latter is not amenable to surgi-
cal correction. The mixed type pres-
ents with symptoms of both obstructive
and central apnoea.

The apnoea index (AI) is defined as
the number of episodes of apnoea per
hour. Reports usually define OSA as
an apnoea index of 5 or more and a
respiratory disturbance index (RDI) of
at least 10 on polysomnograph read-
ings. A typical apnoeic episode in a
patient with OSA usually lasts 20 - 30
seconds and seldom exceeds 100 sec-
onds. It generally has an AI greater
than 20. The severity is markedly
variable, and it is often associated
with other physiological sequelae (e.g.
 systemic hypertension, cor pulmonale,
cardiac arrhythmias, etc.).

Grading of sleep apnoea syndrome
(SAS) as per American Sleep
Association:

• mild: 5 - 20 apnoeic episodes
  per hour
• moderate: 21 - 40 per hour
• severe: > 40 per hour.

It is therefore of paramount impor-
tance to realise that everyone with
SDB snores, but everyone who snores
does not necessarily have SDB. Snoring in the absence of SDB is termed primary or simple snoring. There is some evidence, however, that snoring may be one end of a clinical continuum that extends to severe OSA on the other end. Although our opening statement suggests that snoring is just a social nuisance, there may be some health problems associated even with primary snoring.

Upper airway resistance syndrome (UARS) is characterised by snoring with increased resistance in the upper airway, resulting in multiple transient arousals during sleep. This results in the patient being unable to achieve a restful sleep pattern, to the point of causing daytime somnolence. There are no distinct diagnostic criteria for this entity. No major change is seen in arterial blood saturation and the RDI usually remains low (< 5). Patients with UARS can be treated with nasal continuous positive airway pressure (n-CPAP).

**Prevalence**
- An Italian series showed that 24% of males and 14% of females were habitual snorers.
- Ten per cent of males under 30 years snored compared with 60% of males over 60 years.
- If a person is over 15% overweight, then the likelihood of snoring is over 50%.

**Pathophysiology**
The pathophysiology of snoring is set out in Fig. 1.

**Approach to diagnosis**

**History**
The mainstay of management is a detailed history and a thorough physical examination. Usually in adults, it is the exasperated spouse who brings in their partner unwillingly for an evaluation, or a disconcerted parent who has witnessed an apnoeic episode in their child.

The following signs need to be assessed when taking a history:
- Loud snoring
- Witnessed breathing cessation, gasping, choking
- Frequent arousals from sleep
- Morning headaches
- Excessive daytime somnolence
- Poor concentration/ADHD
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Physical findings
The examination of a patient with SDB is concentrated on the upper airway. However, it is important to assess patients in a systematic way paying particular attention to physical characteristics (most are obese and/or may have short necks). A comprehensive cardiopulmonary evaluation is essential. The upper airway begins at the entrance of the nose and continues to the hypopharynx. Any part of this tract can cause obstruction, and sometimes obstruction is found in several areas in varying degrees.

Areas of special concern
Nose: nasal valve, septum and choana.
Nasopharynx: Particularly important in children because adenoids, the most common cause of OSA in children, are commonly hypertrophied, producing obstruction.
Oropharynx: The soft palate, tonsils, palatoglossal and palatopharyngeal arches, and the tongue are structures of concern. The cross-sectional diameter of the pharynx can be reduced in many patients, playing an important role in the pathogenesis of OSA.

Hypopharynx: The base of the tongue is the most influential structure in this area.

Diagnostic studies
These studies are directed by clinical findings.
1. The polysomnogram is the gold standard for diagnosis. It is performed overnight in a sleep laboratory and the patient’s sleep is monitored.
2. The multiple sleep latency test measures the length of time required for a patient to fall asleep — normally it is 10 - 15 minutes.
3. Other tests include cephalometric radiographs, which are commonly used. They are easy to perform and cheap. CT scan or MRI are used as clinically indicated. Fluoroscopy is a dynamic study that can be of tremendous value, if available.

Management
The management is tailored to the individual clinical picture. Usually conservative techniques are tried, with CPAP being a favoured modality of treatment. Surgery is usually indicated if CPAP is not suitable or if the patient does not tolerate CPAP.

Medical care
• Weight loss in obese patient
• Eliminate alcohol and sedatives
• Sleeping on the side/on the abdomen/propped up 60°
• Drugs that decrease REM sleep, e.g. acetazolamide, protriptyline
• High concentration oxygen (controversial)
• Nasal CPAP
• Obliterator devices.

Surgical treatment
Phase I:
• Nasal reconstruction — e.g. septoplasty, functional endoscopic sinus surgery (FESS)
• Adenotonsillectomy
• Laser-assisted uvulopalatopharyngoplasty (LAUP)
• Genioglossal advancement.

Phase II:
• Midline glossectomy
• Bimaxillary advancement
• Maxillo-mandibular osteotomy and advancement
• Tracheotomy.

References available on request.

SINGLE SUTURE

TRANSFUSIONS AND vCJD

In the first report of possible transmission of variant Creutzfeldt-Jakob disease (vCJD) through blood, the UK Health Minister, John Reid, told parliament in December last year that a patient in the UK had died from vCJD after a blood transfusion. The disease was confirmed at postmortem examination. The patient had received a blood transfusion in 1996 from a donor, who was, at the time, free of signs of vCJD, but who developed the condition in 1999 and later died. However, it is still possible that the development of the disease was coincidental, with both patients eating contaminated meat. But this case may well alter the UK’s policy of allowing people who have received a blood transfusion from giving blood. Fifteen patients in the UK are known to have received blood donated by people who later developed vCJD. They are being contacted and offered counselling.