Surgical treatment:
The primary objective of surgical treatment of surgical treatment of chronic serous otitis media is to re-establish ventilation of the middle ear, keeping the hearing at a normal level and preventing recurrent infection that might damage the eardrum and middle ear bones. This may involve a myringotomy with insertion of a ventilation tube and at times, an adenoidectomy. Myringotomy is performed to remove middle ear fluid. A hollow plastic tube (grommet) is inserted to prevent the incision from healing and to ensure middle ear ventilation. The ventilation tube temporarily takes the place of the eustachian tube in equalising the middle ear pressure. This plastic tube usually remains in the place for six to eighteen months, during which the problem should resolve. When the tube dislodges, the eardrum heals; the eustachian tube then resumes its normal equalising function. In rare cases the drum does not heal following tube extrusion and may need to be repaired surgically at a later date. A diagram of a type of ventilation tube is shown in the adjacent diagram.

In adults, this procedure may be done under local anaesthesia. In children general anaesthesia is required. The adenoids can be removed at the same time if necessary. More often than not when the ventilation tube dislodges the middle ear problem stabilises but it may recur necessitating a further grommet insertion. In persistent cases a permanent tube for example a tube may be inserted. This tube usually needs to be removed when the dysfunction resolves. There is also a greater chance that the hole in the drum may persist. With the tube in place the patient can carry on with normal activities, with the exception that water—especially soapy water must be prevented from getting into the ear. Other potential complication as a result of surgery include infection (which may manifest in the form of a discharge from the ear) that would require with antibiotic ear drops. Some patients hearing may not improve and there has been one case reported in the literature where the hearing actually deteriorated.

However, these problems are very uncommon and most patients do very well after the operation which normally done as a day case procedure.

If you have any questions about the procedure you can get from any of the numbers listed or the nearest ENT department.

Owa Grommet prior to insertion in the eardrum

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All information herein is written in good faith and is correct at the time of writing to the best knowledge of the author. Nothing herein shall be construed as taking the place of an individual consultation prior to surgery.
To understand the need for grommet insertion it is worthwhile explaining how the ear works. The ear is divided into three parts: an external ear, a middle ear and an inner ear. Each part performs an important function in the process of hearing.

The external ear consists of an auricle and the ear canal. These structures gather sound and direct it towards the eardrum.

The middle ear chamber lies between the external and inner ear. This chamber is connected to the back of the nose by the eustachian tube, which serves as a pressure equalising valve. The middle ear consists of the eardrum and three small bones (ossicles): malleus (hammer), incus (anvil) and stapes (stirrup). These structures transmit sound vibrations in the external ear canal into fluid waves in the inner ear. A disturbance in the inner ear fluid (perilymph) bathed in fluid. Inner ear fluid waves stimulate the delicate nerve endings that in the cochlear and transmit sound energy to the brain where it is interpreted. A disturbance in the inner ear fluids or nerve endings may result in a sensorineural (nerve) hearing impairment. This type of impairment is not correctable surgically at the moment.

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Function of the eustachian tube

The eustachian tube is a narrow, one and a half inch long channel connecting the middle ear with the nasopharynx, the upper throat area just above the palate, and at the back of the nose.

The eustachian tube functions as a pressure equalising valve for the middle ear, which is normally filled with air. When functioning properly the eustachian tube opens for a fraction of a second periodically (about once every three minutes) in response to yawning and swallowing. In so doing it allows air into the middle ear to replace air that has been absorbed by the middle ear lining (mucous membrane) or to equalise pressure changes occurring with altitude changes. Anything that interferes with this periodic opening and closing of the eustachian tube may result in hearing impairment or other ear symptoms.

Obstruction or blockage of the eustachian tube results in a negative middle ear pressure, with retraction (sucking in) of the eardrum. In the adult this is usually accompanied by some ear discomfort, a fullness or pressure feeling and may result in a mild hearing impairment and head noise (tinnitus). There may be no symptoms in children. If the obstruction is prolonged, fluid may be drawn from the mucous membrane of the middle ear creating a condition we call serous otitis media (fluid in the middle ear) This occurs frequently in children with an upper respiratory infection and accounts for the hearing impairment associated with this condition.

Occasionally pain or middle ear fluid develops when landing in an aircraft. This is due to failure of the eustachian tube to properly equalise the middle ear pressure – condition called aerotitis. It is temporary and often can be avoided by taking precautions (see following sections).

On occasion just the opposite from blockage occurs: the tube remains open for prolonged periods. This is called abnormal patency of the eustachian tube. This condition is less common than serous otitis media and occurs primarily in adults. Because the tube is constantly open, the patient may hear himself breathe and his voice reverberate (autophony). Fullness and a blocked feeling are not uncommon. Abnormal patency of the eustachian tube is annoying but does not produce hearing impairment.

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Eustachian tube problems related to flying.

Individuals with eustachian tube problems may have difficulty equalising middle ear pressure when flying. When an aircraft ascends atmospheric pressure decreases, resulting in a relative increase in middle ear air pressure. When the aircraft descends, just the opposite occurs: the pressure increases and there is a decrease in the middle ear pressure. Either situation may result in discomfort in the ear due to abnormal middle ear pressure if the eustachian tube is not functioning properly. Usually this discomfort is experienced upon aircraft descent.

To avoid middle ear problems associated with flying you should not fly if you have an acute upper respiratory problem such as a common cold, allergy attack or sinus infection. If you must fly while you have an eustachian tube problem, you may avoid ear problems by taking the following advice:

1. Observe your chemist a nasal decongestant such as Sudafed tablets. Start the medications at least an hour before the flight. Continue for a further 24 hours if you have problems during the flight.

2. Alternatively, you may use Ephedrine, Otrivine, or Sudafed nasal spray/ drops shortly before boarding the aircraft. If your ears “plug up” during the flight, hold your nose and swallow. This will help balance the pressure in the middle ear.

3. An hour before the plane is due to land use the spray every 5 minutes for 15 minutes. Chew gum/ swallow to encourage eustachian tube opening. Should your ears still “plug up” despite this, hold your nose and blow forcibly to try to force air through the eustachian tube into the middle ear (valsalva manoeuvre).

4. Remember that it is unwise to fly if you have an acute upper respiratory infection and under these circumstances do not perform the valsalva manoeuvre mentioned above.