DO I HAVE "SINUS"?

It is not uncommon for a patient to walk into a clinic and say, "Doc, I have "sinus". Not many people realise that everyone has sinuses!

Text by Dr Gan Eng Cern

WHAT ARE SINUSES?

The precise medical term is paranasal sinuses. They are air-filled cavities surrounding the nasal cavity. Humans have four groups of sinuses within their face, on each side of their nasal cavity. They are located above the eyes (frontal sinus), in between the eyes (ethmoid sinus), below the eyes (maxillary sinus) and behind the eyes (sphenoid sinus). The lining of the nose (mucosa) produces mucous. The mucosa has very small hair-like structures that help move the mucous from the sinuses into the nose. The mucous in the nose can then be blown out, swallowed into the stomach or coughed out as part of the phlegm.

WHAT ARE THE FUNCTIONS OF THE SINUSES?

Why sinuses exist is largely unknown. However, as they are air-filled, they are thought to reduce the weight of the human head. Sinuses also produce mucous that traps inhaled bacteria and foreign objects, change the temperature of inhaled air and enhance the resonance of human voice.

WHAT IS RHINOSINUSITIS?

Rhinosinusitis, also known as sinusitis, is the inflammation of the lining of the nose and sinuses. This is the condition that most people refer to when they walk into the clinic and say they have "sinus". Rhinosinusitis is further divided into "acute" and "chronic", depending on the duration of the symptoms; if the symptoms are less than three months, the condition is "acute", and if they are more than three months, the condition is "chronic".

WHAT CAUSES RHINOSINUSITIS?

The answer to this question is complex. The sinuses become inflamed and infected when the drainage pathway is blocked. The stagnant mucous in the sinuses can get secondarily infected, resulting in the symptoms of rhinosinusitis. The drainage pathways of the sinus can be naturally narrow in some patients (due to genetic factors). A deviated nasal septum (the bent central wall of bone and cartilage in the nose that divides the nasal cavity

Left: A screen shot of the image guidance system (IGS), which enables the surgeon to determine the exact position of the surgical instrument in relation to critical structures close to the sinuses such as the eyes and brain

into right and left halves) can also block the sinus passage. This can occur as a result of trauma or is inborn in some patients.

In patients with severe allergic rhinitis (sensitive nose or hay fever), the congestion and swelling in the nose can cause rhinosinusitis. In some patients, rhinosinusitis occurs because the lining of their nose and sinuses is ineffective in moving mucous out of the nose. If the patient has poor immune system, the risk of getting a sinus infection is also higher.

WHAT ARE THE SYMPTOMS OF RHINOSINUSITIS?

Patients with rhinosinusitis usually experience blocked nose, coloured (usually yellow, brown or green) mucous which can drip forward (as a coloured nasal discharge) or backwards (as a postnasal drip), facial pain or fullness, and in some cases, loss of smell. In acute rhinosinusitis, some patients may experience fever. Other associated symptoms include headache, ear pain and blockage, and fatigue.

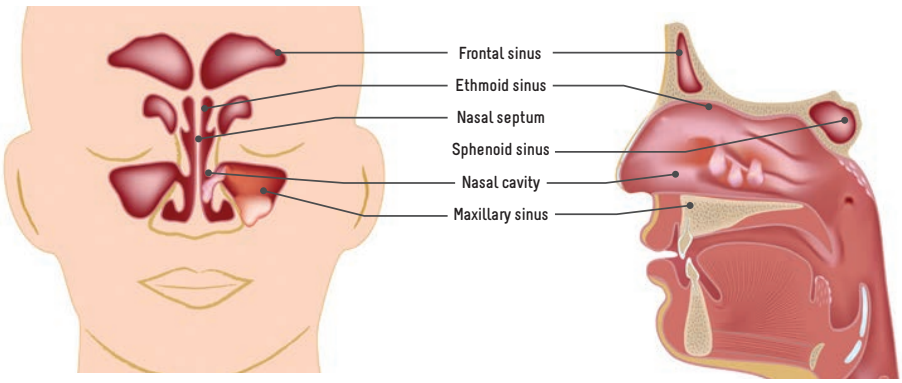
HOW IS RHINOSINUSITIS DIAGNOSED?

Your doctor will review your symptoms and perform a physical examination, which may include pressing the sinuses on your face to assess for any tenderness. In an Ear, Nose and Throat (ENT) clinic, a nasoendoscopy (a flexible lighted tube with a camera attached to one end) is inserted into the nose and throat to look for signs of rhinosinusitis. This can be done after the nose is numbed with a local anaesthetic spray.

HOW IS RHINOSINUSITIS TREATED?

In acute rhinosinusitis, the cause is usually bacterial. Hence, a course of antibiotics of at least 10 days is required. Apart from that, the use of a nasal wash (douche), which contains a mixture of salt and

SINUS CAVITIES



WHAT DOES SINUS SURGERY INVOLVE?

The medical term for sinus surgery is functional endoscopic sinus surgery, or FESS in short. It is an operation that is performed under general anaesthesia. The operation is done through the nose, using an endoscope and cutting instruments. There are no external cuts or wounds as the surgery is conducted through the nose. During the surgery, the blocked sinuses are opened to facilitate the drainage of the mucous. Quite often, a septoplasty (a procedure to straighten the septum, which is the bony-cartilaginous partition between the left and right nasal cavities) may also be performed to allow access to the sinus cavities.

WHAT ARE THE RISKS OF FESS?

The risks of FESS can be divided into major and minor complications. Major complications include injuries to the brain, eyes and large blood vessels, although these complications are very rare (less than one per cent). Minor complications include scar bands in the sinuses, minor bleeding and bruising/swelling around the eyes. Patients with nasal polyps have a higher risk of recurrence of the disease. However, there are medications that can be used to keep them under control after surgery. Hence, it is important for such patients to have follow-ups with their surgeon.

With the availability and use of image guidance system (IGS) during sinus surgery, the risks of major complications have been reduced. With IGS, the surgeon is able to tell the position of the operating instruments in relation to

the eyes, brain or major blood vessels. This is particularly important in a revision FESS (a re-do of the sinus operation) whereby there might be a lot of scarring and loss of important surgical landmarks from any previous surgery.

WHAT IS THE RECOVERY PERIOD LIKE?

After sinus surgery, the sinus cavities are usually packed with some materials to keep the nasal structures in place, and also to help stop bleeding in some cases. These "packings" may be absorbable (which do not require removal) or non-absorbable (which will usually be removed between five to ten days after surgery). Depending on the extent of the sinus operation, the patient may be allowed to go home on the same day of the surgery or admitted for overnight observation. The patient will be instructed to wash his nose with specially prepared sea-salt solution (nasal douche) two to three times a day. The patient may feel some blockage in his/her nose from the packing materials and blood clots. There may also be mild pain after the surgery but adequate painkillers and antibiotics are usually prescribed.

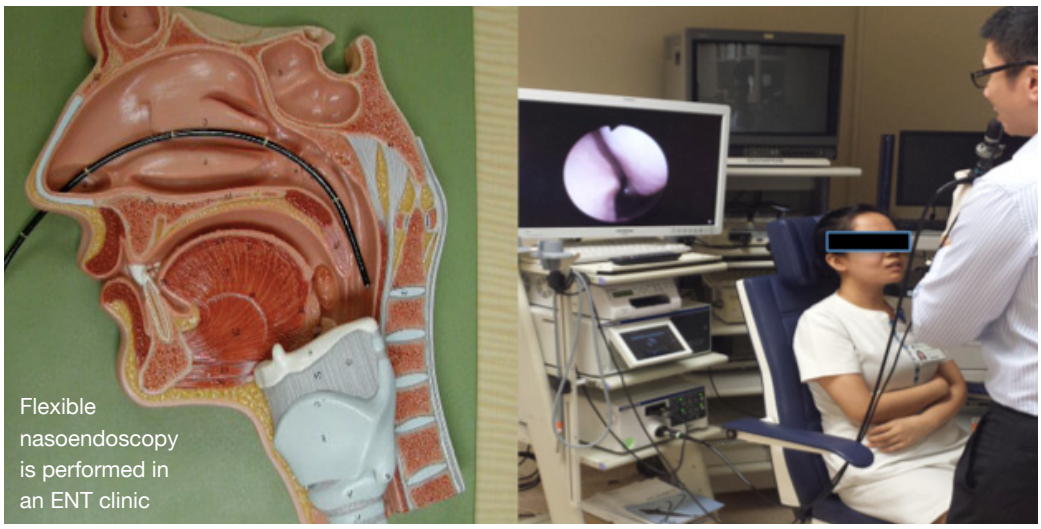
In the first clinic visit (usually between five to ten days after surgery), the packing materials will be removed (if non-absorbable) or suctioned out (if absorbable). The surgeon will clean up the sinus cavities with the aid of an endoscope and suction. Following this, the patient should feel much better and be able to return to work after a week of rest. The full recovery of the sinuses may take up to three months although most patients will feel well enough to get on with their daily activities after one to two weeks.

baking soda, can facilitate the removal of infected mucous in the nose. A steroid nasal spray can also be used to reduce inflammation in the nose and sinuses.

The treatment of chronic rhinosinusitis is more complicated, and it is best that patients with this condition consult an ENT specialist. About 20 to 30 per cent of patients with chronic rhinosinusitis may develop nasal polyps (outpouchings of the nasal mucosa, which contain mostly fluid).

Patients with chronic rhinosinusitis can have their symptoms controlled with steroid nasal sprays, nasal douches, and in some cases, a course of antibiotics. However, patients that do not respond to these medical treatments may require sinus surgery.

Patients with recurrent or chronic rhinosinusitis should consult an ENT specialist



Flexible nasoendoscopy is performed in an ENT clinic

HOW IS RHINOSINUSITIS DIFFERENT FROM A COMMON COLD?

The common cold is caused by a viral infection, hence antibiotics are not necessary. The nasal symptoms are similar to rhinosinusitis: blocked nose, coloured mucous, cough, facial fullness, and loss of taste and smell. However, a person with a common cold also usually experience sore throat, whole body weakness, and low-grade fever. Your doctor may prescribe medications to help relieve the symptoms, but essentially a good rest and hydration is all that is required for your body's immune system to fight off the infection. The symptoms of a common cold typically peak at day three or four of the infection, and most will begin to resolve by day seven. If the symptoms last longer than ten days, then acute bacterial rhinosinusitis is the more likely diagnosis.

WHEN DO I NEED TO SEE AN ENT SPECIALIST FOR RHINOSINUSITIS?

Patients with recurrent episodes of rhinosinusitis, chronic rhinosinusitis and complications arising from rhinosinusitis should consult an ENT specialist. As only a thin layer of bone separates the sinuses from the eyes and brain, infection in the sinuses can sometimes spread to these vital organs. If not treated early, permanent damage to the eyes and brain can occur.