Unilateral Nasal Polyps

This tutorial follows on from the rhinosinusitis tutorial but only concerns itself with the unilateral nasal polyp. The majority of unilateral nasal polyps form in the same way that the polyps associated with chronic rhinosinusitis do; by inflammatory swelling arising out of ethmoid air cells.

So why do we worry about unilateral polyps? Because a small number of them will be cancerous in origin and it is very important to know how to recognise the cancerous ones and to know what to do with them. This tutorial extends your knowledge of the unilateral polyp and adds to the advice sheet that I left with AEC in 2013.

As always in this tutorial series I am writing with the health service in Cambodia in mind and I offer what is, I hope, sensible advice for the Primary Ear Care Clinician who comes across such a polyp.

OVERVIEW OF THE UNILATERAL POLYP

A good knowledge of the anatomy of the sinuses is essential to an understanding of the cancerous nasal polyp and its symptoms and signs. This is because it will spread out of the sinus and into tissues that lie nearby and will cause the patient to suffer in different ways. The first step is to learn the anatomy in a little more detail. Make sure you understand tutorial 6 before you read further.

Anatomy of the sinuses and surrounding structures

The images below show the important anatomical relationships of the sinuses and how a tumour might extend itself into them.

The frontal lobe of the brain lies within the anterior cranial fossa. This is separated from the nose by the cribriform plate and adjacent thin bone of the ethmoid labyrinth.

Tumour (green) can spread up through these bones.

FL – frontal lobe of the brain
F – frontal sinus
M – maxillary sinus
E – ethmoid sinus
MT – middle turbinate
IT – inferior turbinate
AP – alveolar process (for teeth)
The orbit (containing the eye and the muscles that move it) is separated from the ethmoid by a paper-thin piece of bone called the lamina papyracea.

Once tumour (red) has spread through the lamina it invades and damages the muscles that move the eye. It also pushes the eye outwards and can cause blindness.

Sometimes the tumour (blue) will spread inferiorly into the alveolar process and loosen the teeth.

It can also spread directly into the mouth through the hard palate.

**Sinonasal tumours**

Tumours that arise in the nose and sinuses are called sinonasal tumours. There are a number of different types of tumour, some are benign and others malignant. It is the malignant ones that spread out of the nose and into adjacent structures. Benign ones usually stay within the nose just like inflammatory nasal polyps.

It can be very difficult to tell the difference between a tumour and an inflammatory polyp, as they often look the same. Sometimes the malignant ones bleed or smell very bad but not always.
Examples of sinonasal tumours are listed below. You will not be able to tell which type of malignancy it is just by looking at it. They require biopsy and examination under the microscope by a pathologist.

<table>
<thead>
<tr>
<th>Benign polyps</th>
<th>Malignant polyps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflammatory polyps (with chronic rhinosinusitis)</td>
<td>Adenocarcinoma</td>
</tr>
<tr>
<td>Inverting papilloma (may have a malignant potential)</td>
<td>Malignant melanoma</td>
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<tr>
<td></td>
<td>Neuroblastoma</td>
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<td></td>
<td>Squamous cell carcinoma</td>
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<td></td>
<td>Lymphoma</td>
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<tr>
<td></td>
<td>Mucoepidermoid carcinoma</td>
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<tr>
<td></td>
<td>…many others</td>
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The patient doesn’t notice their sinonasal tumour until it is quite large. This is because they don’t cause many symptoms until they get quite big. This means that patients present ‘late’ with their tumours and the tumour may well have spread into adjacent structures such as the eye.

**WHAT TO DO IF YOU SEE A PATIENT WITH A UNILATERAL POLYP**

The first thing to remember is that the most likely diagnosis is chronic rhinosinusitis (CRS) even though the polyp is only on one side. Sinonasal malignancy is rare and CRS is common.

The next thing to do is to examine the nose very carefully with an endoscope. You will often find that the patient has smaller polyps on the other side of the nose as well. Using an endoscope you will be able to see clearly into the middle meatus and into the nasopharynx. If there are polyps there as well then the patient has bilateral polyps and you know how to manage these already (see tutorial 7).

If there are no problems on the other side of the nose the patient has true unilateral polyps and you should follow the following steps carefully.

**Examination of patients with confirmed unilateral nasal polyps.**

You must examine with great care the areas into which tumours can spread. This means looking at the eye, the mouth, the face and the neck. We’ll look at each in turn.

**The eye**

Tumours spreading into the orbit from the nose and sinuses cause the muscles that move the eye to become weak. The eye will not be able to move in all directions and the patient will get double vision (diplopia). Tumours can also push the eye itself outwards causing proptosis and they can invade the optic nerve and cause blindness. Your eye examination must look for these possible features.

Eye movements are assessed by asking the patient to move their eyes in all directions. The clinician watches these movements and looks to see if there is any
movement that is not possible. If the eye cannot move because there is a tumour affecting its muscles the patient will complain of double vision (diplopia). This means that they will see two of everything when they try to move their eyes.

You Tube has videos that demonstrate eye examination. Have a look at this link to see a full examination of the eyes. At 5 minutes into the video it shows an examination of extraocular movements but the rest of the video is worth looking at: http://www.youtube.com/watch?v=jdRJqbB0ZyA&list=UUZkLYnTCip85Uc4YdlOV2Rw&index=16

You should also look to see if there is proptosis. This is best done by looking down on the patient’s eyes from above but one can look up from below. If there is proptosis you will see that one eye lies further forward than the other.

The right eye lies further forward than the left.
This patient's right eye is displaced forwards and outwards by a tumour.

www.merckmanuals.com

If the patient is complaining of loss of vision in the eye on the same side as a unilateral nasal polyp it may mean that the polyp is malignant. Assessing eyesight should be done by an optician or eye specialist. A Snellen chart is often used to measure eyesight.

This is an example of a Snellen chart. Those used in Cambodia may look different.

If you find any abnormality in eye movement, eyesight or eye position (proptosis) refer the patient to the ENT hospital without delay.

The mouth

You should look for two things inside the mouth: loose upper teeth and swelling or ulceration in the hard palate and alveolus. Tumour can spread downwards into the teeth and palate from the sinuses. If you see this in the presence of a unilateral nasal polyp refer the patient to the ENT hospital without delay.
This picture shows a carcinoma that has eroded into the mouth from the nose. You can see that it has affected the upper teeth and is destroying the alveolar process.

The face

The face can be affected in a couple of ways when there is a malignant nasal polyp present. First, the tumour can damage the nerves that give sensation to the face. This is because the nerves that supply the upper and middle thirds of the face travel through or near the sinuses.

You must test the sensation of the face by comparing the left side with the right. Do this with light touch, such as with your finger, on the temple, cheek and over the mandible and note any differences. If the patient feels numb on the side of the polyp there may be a malignancy present.

(https://www.osceskills.com/e-learning/subjects/cranial-nerve-examination/)
The picture shows examination of facial sensation using cotton wool but light finger touch is also acceptable.

Also look for swelling in the cheek on the same side as the polyp. If there is swelling it may be that a tumour is spreading into the face from the sinus. This lady has a swelling in her right cheek caused by a mucoepidermoid tumour in her maxillary sinus.

If the patient has reduced sensation or swelling in the cheek refer to your ENT hospital immediately.

The neck

Malignancy in a nasal polyp may spread into the neck so its important to look for neck lumps in a patient with a unilateral polyp.
If you see a neck lump refer to the ENT hospital without delay.

**What should I do if the examination is normal?**

In all of the sections on examination above an abnormality means that you must refer to the ENT hospital. However, you will often find that there are no abnormalities when you examine the patient. In this situation you have two choices:

1. Treat the case as a case of chronic rhinosinusitis
2. Refer to the ENT hospital anyway

Both of the options are acceptable, however, if you are going to treat the patient only do this for a short period of time. The reason for this is that, if your treatment doesn’t work, the patient may have a malignancy after all (even though the rest of the examination was normal when you saw them). You don’t want to keep treating the patient in this situation and you should refer immediately to the ENT hospital.

**How should I treat the patient?**

The correct treatment depends upon the size of the polyp when you first examine it. It may be large or small so use:

1. Topical nasal steroids if the unilateral polyp is small
2. Oral dexamethasone 6mg daily OR Prednisolone 1mg / kg / day (up to 40mg daily), if the unilateral polyp is large

Whichever you choose you must only offer a short course of treatment. Nasal sprays should be used for no more than two months. Then the nose, face, mouth and neck must be re-examined and the patient referred if necessary.
If using oral steroid do this for ten days only. If the polyp is shrinking give the patient topical sprays to try for two months (as above). If it isn't shrinking refer immediately.

**Learning Points.**

1. Unilateral nasal polyps are usually inflammatory in origin
2. Always examine the nose with an endoscope to check for polyps on the other side
3. If the polyps are unilateral and there are no signs of malignancy you can give treatment for a short period of time
4. If there are signs of malignancy refer to ENT immediately
5. If treatment fails refer to ENT
Patient presents with a Unilateral Polyp

Do a rigid endoscopy

Bilateral Polyps

Start treatment for Chronic Rhinosinusitis with Polyps

1. If the polyps are small use topical steroids.
2. If they are large use oral steroid to shrink them and then change to topical steroids.

Unilateral Polyp

Eye examination Normal?

No → Refer to ENT

Yes → Face examination Normal?

No → Refer to ENT

Yes → Mouth examination Normal?

No → Refer to ENT

Yes → Neck examination Normal?

No → Refer to ENT

Yes →

Polyps gone?

No → Refer to ENT

Yes →

Maintain topical treatments