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1 Introduction
This leaflet aims to provide you with information regarding Per-Endoscopic Myotomy (POEM), a new treatment for achalasia. It is important that you are fully aware of the benefits and risks of this procedure before you sign the consent form.

2 What is achalasia?
Achalasia is a rare disorder of the gullet (oesophagus) whereby there may be difficulty swallowing (dysphagia), chest pain and regurgitation of food and fluid. These symptoms come on because both the normal coordinated contractions of the oesophagus are lost and the muscle between the stomach and the oesophagus (the lower oesophageal sphincter) does not open easily. As a consequence food and fluid cannot pass through as normally as it should. This disorder is caused by the loss of nerves in the oesophagus and lower oesophageal sphincter. No one knows why this happens.

3 What are the treatments for achalasia?
Treatment for Achalasia is centred upon opening the passage between the oesophagus and stomach in order to reduce the hold up of food and fluid. The most commonly used treatments for achalasia are:

1. Botox injection. A catheter with a needle is pushed through the endoscope so that Botox is injected directly into the lower oesophageal sphincter muscle. Just like when injected in the face, Botox tries to paralyse the muscle so that food and fluid can flow more easily. This
The technique is easy and can be performed fairly rapidly under relatively minimal sedation during routine endoscopy. Unfortunately results are not very good in the long term as the Botox wears off rapidly and treatments need to be repeated frequently. Also Botox makes other forms of therapy more difficult. Botox is generally reserved for the elderly and/or those who cannot have any other form of therapy.

2. Pneumatic Dilatation (PD). This entails blowing up a balloon in the lower oesophageal sphincter under x-ray vision. The aim of the procedure is to disrupt the muscle so that it opens up in the long term. PD is normally performed under heavy sedation in the endoscopy room and (usually) does not require admission. This treatment normally works well but requires repeating within weeks, months and/or years.

3. Heller Myotomy (HM). This is a surgical technique which can be performed either as keyhole procedure through the top or the abdomen or a cut is made in the chest. The lower oesophageal sphincter is targeted and the muscles within, just above and below are carefully cut. As this lays the lower oesophageal sphincter open there is a high propensity for reflux so an antireflux procedure normally follows. HM is performed under general anaesthetic in theatres. As with most other surgeries, admission to hospital for a few days is common.

A recent large study looking at the response between (repeated) PD and HM which took place in many hospitals in
several countries in Europe showed that both treatments have the same success rate over a two year period.

In 2009, a new achalasia treatment was made available whereby the same muscles are cut as in HM but without the need for surgery. This technique is called Per-Oral Endoscopic Myotomy or POEM.

4 What is POEM?

POEM is a new endoscopy treatment for achalasia whereby a small hole is created directly into the oesophagus and a narrow tunnel is created so that the muscles can be seen. With the endoscope, the same muscles are cut as in the HM surgical procedure but with POEM no external scars are left in the abdomen or chest. Also although general anaesthesia is used, the procedure is performed in the endoscopy room rather than in theatres and takes no longer than 1 ½ -2 hours. Furthermore some forms of achalasia (with spasm) require muscles to be cut much farther up in the oesophagus than is routine, this can be a problem with surgery because of difficulty to access the upper parts of the oesophagus. With POEM muscles can be cut with precision as far up the oesophagus as the achalasia requires.

POEM can also be performed in cases where surgery or dilatation has been unsuccessful.

Since 2009, results of more than 1000 POEM procedures performed around the world are excellent and are so far appear to be at least as good as surgery in terms of reducing swallowing difficulty and pain.
Risks and side effects associated with POEM

Risks of pneumonia or chest infection from inhaling food or fluids into the lungs are avoided by making sure that all patients are fasted well in advance and by performing an endoscopy before POEM to be sure of an empty stomach and oesophagus. Even if this complication did occur, treatment is with antibiotics. Very rarely, such a condition requires longer in-hospital treatment. It is important to note that this risk applies also to both PD and HM.

There is a rare (1–6 in 100) risk of bleeding or perforation (or tear) in the oesophagus wall or the stomach. Usually this can be treated right away during endoscopy. Furthermore the POEM procedure normally does not need to stop unless endoscopy treatment of the bleed or tear is not successful in which case antibiotics are required with a period of observation. Very rarely it can become necessary to undergo surgery to repair the tear or bleed. Again, it is important to note that the same risk also applies to both PD and HM. After POEM, to be sure that no small tears have gone unnoticed, a barium swallow (or equivalent) will be performed the day after POEM. If a tear is identified, in-hospital antibiotics will be initiated.

There is a 10 in 100 chance that after POEM you might experience reflux symptoms. Normally this is treated easily with acid-reducing medication. Rarely if patients remain unresponsive to medicines, anti-reflux surgery can be offered.

Finally POEM might need to be stopped mid-procedure for a variety of reasons. Albeit unusual, scarring can preclude access to the oesophagus muscle.
Just like with HM, carbon dioxide is required to improve visibility and access to the tissues. As a consequence, it is not uncommon for this to accumulate and become visible within in the tissues of the neck and abdomen. This is not considered unusual and disappears on its own over the following few days. Just like with HM, if gas in the abdomen is uncomfortable, this can be removed easily with a needle.

6 What will happen if I choose not to have the procedure?

Other than POEM, as described in section 3 above, there are a number of other treatment options available for achalasia:

1. Botox injection into the bottom of the oesophagus and lower oesophageal sphincter. Often this requires repeating on a regular basis and can last anything between weeks/months and/or years.

2. Pneumatic dilatation (PD) whereby a balloon is used to stretch and disrupt the muscles of the lower oesophageal sphincter in order to reduce resistance to flow into the stomach. Often this too requires repeating within weeks/months and/or years

3. Surgical Heller myotomy and fundoplication whereby the muscles just above, below and within the lower oesophageal sphincter are cut through keyhole or open surgery. This tends to be a one-off procedure although
there is a greater than 40% chance of needing further treatment of some form or other within the next 5 years.

4. Tablets that relax the muscles in the lower oesophageal sphincter are no longer considered an effective form of treatment for achalasia.

7 Examinations before POEM

Manometry
A manometry test will have almost always been performed prior to referral in order to diagnose achalasia. Manometry entails insertion of a very thin tube (or catheter) through the nose and into the stomach. Pressure sensors that span this catheter define exactly how the oesophagus works. Achalasia is diagnosed when no movement (or rarely spasm) is detected in the oesophagus along with a non-relaxing lower oesophageal sphincter. Prior to POEM, it is imperative that this test be repeated not only to be absolutely sure of the diagnosis, but also in order to subtype the achalasia so that the most appropriate form of treatment can be offered.

Barium swallow
A series of X-rays are performed after barium is swallowed in order to determine the rate of barium emptying into the stomach.

Endoscopy
It is crucial to repeat the endoscopy prior to consideration for any form of achalasia treatment. This is in order to exclude any
other disorder of the oesophagus which might be contributing towards similar symptoms which might preclude treatment. It is also important to be sure that the oesophagus and stomach are clear of food and fluid just prior to considering POEM (or any achalasia treatment) in order to reduce the risk of inhaling contents into the lungs.

8 How should I prepare for the procedure?

You are likely to be admitted to hospital the day before POEM. This is in order to be sure that all investigations required have been performed. These include blood tests as well as an endoscopy to be sure that no food/fluid remain in the oesophagus and stomach. You will be asked to have a liquid diet the day before admission, but if food/fluid remain at the pre-POEM endoscopy and if this cannot be removed during endoscopy, POEM will be postponed and a more prolonged fast will be required. Also it is likely that a thin tube would be placed into the oesophagus overnight to help drain any material that remains.

The procedure cannot be performed if you take blood-thinning medication unless these are stopped at least one week in advance. This might need to be coordinated in advance (with the help of your GP and/or cardiologist). Also there is a possibility that you will need to come into hospital in advance in order for the blood thinners to be converted to another safer form that will reduce the risk of bleeding during POEM.

These pre-procedure preparations are similar to what are required prior to PD or HM as well.
9 Asking for your consent

As with all procedures we undertake, we involve you in all decisions about your care and treatment. At consent we will reiterate the benefits and risks that apply for POEM; risks that apply are in regards to the procedure itself as well as the risks that surround the general anaesthetic. Any questions that have not yet been answered can be addressed and any concerns you have can be explored at length. Once we are absolutely sure that you fully understand all the benefits and risks and once we are sure that all your questions are answered and that you wish for us to proceed with POEM will we ask you to sign the form of consent. Still, if there are any concerns or questions that arise thereafter we will be more than happy to discuss again at any stage and the procedure can be reconsidered at any time if required.

10 What happens during the treatment?

While under general anaesthesia, an experienced endoscopy doctor will create a small hole in the middle of the oesophagus in order to form a small tunnel down to, and a few centimetres beyond, the lower oesophageal sphincter. The muscles of the oesophagus will then be cut just as they would have been during surgery. The small hole will then be closed with small clips and the endoscope will be removed. This is a fairly quick procedure and takes in the region of 1½ to 2 hours if there are no unforeseen difficulties. As POEM is done under general anaesthetic, you will not be aware of the procedure taking place.
11 What should I expect after the treatment?

You will stay in the hospital for observation for one night after POEM. On the following day a chest X-Ray, CT scan or barium swallow will be performed to confirm that no small leaks have occurred. You will then be sent home with instruction that you remain on a liquid diet for one week followed by a soft diet for another week. During this time you will also be asked to take antibiotics for one week (only as a precaution) and acid reducing medications for at least 2 weeks in order to help speed up the healing process and reduce the chance for infection.

12 References

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15 How to find us
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