NHS
West Hertfordshire Teaching Hospitals
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A guide to...

Having Wireless pH monitoring (Bravo)

Patient Information

How to contact us

Booking and interpreting queries:	Please call the number on your appointment letter
Clinical queries:	Hemel Hempstead - 01442 287968, Watford - 01923 436095
Any other query:	Hemel Hempstead - 01442 287681

If you need this leaflet in another language, large print, Braille or audio version, please call 01923 217 198 or email westherts.pals@nhs.net

Language | Large Print | Braille | Audio

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Ratified / Review Date	July 2024 / July 2027
ID Number	25/2263/V1

Introduction

This information is about wireless pH monitoring (Bravo), which is an alternative to the standard catheter-based test used to measure acid reflux. It is important that you are fully aware of the benefits and risks of this procedure before you sign the consent form. When we ask for your consent, you will be able to ask any questions you have about this information. You may find it helpful to write them down so that you do not forget any.

What is wireless pH monitoring?

The standard test for reflux disease is pH monitoring, where a catheter is placed through the nose, down to the oesophagus (food pipe) and into the stomach. The catheter has two sensors which measure acid (pH) in the stomach and in the bottom of the oesophagus. These sensors measure the amount of acid washing up from your stomach into your oesophagus over a 24-hour period while you undertake your normal daily activities.

Between five and ten percent of patients are not able to tolerate the insertion of the standard pH catheter or are unable to keep the catheter in place for the entire 24 hours. Also, some patients behave differently with the catheter in place (they may eat less, may not go out or take part in their normal daily activities) and this might alter the result. Finally, not all reflux events and symptom events occur every day, so the 24-hour test might be too short to detect reflux disease in some people.

Wireless pH monitoring (also known as Bravo) is an alternative which bypasses the need for the nasal catheter and is carried out for 96 hours. A capsule which measures pH is 'stitched' at the bottom of the oesophagus during a gastroscopy (see below), which is normally performed under sedation. The data is sent via radio waves to a small, box-like receiver, which is carried on a belt or strap across the shoulder.

What are the advantages of wireless pH monitoring?

Studies have shown that patients tolerate this wireless recording better than the catheter-based test. They are able to go about their daily activities (work, exercise, etc.) without worry or feeling embarrassed. Also, because the capsule usually stays in place for an average of five days, it can measure for more than 24 hours so that it still captures information, even if reflux or symptoms do not happen all the time. However, there are also additional risks associated with wireless pH monitoring (see pages 4 and 5).

What is a gastroscopy?

This is a test which allows the doctor to look directly at the upper part of your digestive system (oesophagus, stomach and first part of the small intestine). The test is sometimes called an endoscopy or an OGD (oesophago-gastro-duodenoscopy). The doctor passes a flexible tube with a very small camera at the end through your mouth and into your stomach.

To reduce the discomfort of the procedure, the pH capsule is usually inserted under sedation. The endoscopist will administer the sedation via a small needle in the back of your hand and it should take a few minutes to work. You will feel sleepy, but you will not be unconscious and are usually aware of what is going on around you. You may also be given a small amount of oxygen during the procedure.

There are a few important points to note:

- Please ensure there is someone to take you home after the procedure and to stay with you overnight.
- For the gastroscopy and Bravo procedure, you need to stop specific medication (please see page 4 below for further details).

How is the capsule placed in the oesophagus?

The procedure starts with a gastroscopy to examine the oesophagus and stomach. One advantage of the gastroscopy is that any abnormality within the oesophagus can be excluded at the same time and biopsies can be taken if required. This might avoid the need for a gastroscopy at another time. If an abnormality is found, such as severe inflammation, which means the study is no longer appropriate, the capsule insertion may be cancelled.

The capsule is then passed into the oesophagus so that it can be 'stitched'. This is a very simple process where a small 'well' in the capsule sucks up a tiny bit from the wall of the oesophagus in order to pass a small needle through. The procedure is painless. The endoscopist will perform a final examination to confirm the capsule is attached.

How long does the capsule stay in place?

The pH capsule usually stays in place for around five days, with a ten percent risk of dropping off each day after it is inserted. At least 24 hours is required for the study to be considered sufficient. If the capsule drops off spontaneously before 24 hours or if we feel that a longer study is required, the study might be repeated. This will require another procedure.

The capsule drops off as part of the body's normal healing process. This means we are unable to predict when the capsule will drop or improve the chances of it not dropping early. Once the capsule drops off, it passes through the stomach, small and large bowel and is passed with your stools without you being aware. You do not need to worry about finding the capsule after it passes through.

How should I prepare for wireless pH monitoring?

Please do not eat for six hours before the procedure and do not drink for four hours before the procedure. You may have sips of water up to two hours before the procedure.

If you are taking diabetic medication, you should contact your GP or nurse specialist for advice. **If you are taking blood thinning tablets (warfarin, clopidogrel, ticagrelor, dabigatran, rivaroxaban or apixaban) please contact the department immediately. Do not stop these** of your own accord. Please make sure you bring with you a list of all medications you are currently taking.

You will need to stop any medications which your doctor has prescribed for your stomach or oesophagus problems and stay off these medications until the study has finished.

Please stop taking the following medications at least **one week** before the test:

- Omeprazole (Losec)
- Lansoprazole (Zoton)
- Pantoprazole (Protium)
- Esomeprazole (Nexium)
- Rabeprazole (Pariet)

Please stop taking the following medications at least **four days** before your test:

- Ranitidine (Zantac)
- Cimetidine (Tagamet)
- Famotidine (Pepcid)

Please stop taking the following medications at least **two days** before your test:

- Metaclopramide (Maxalon)
- Domperidone (Motilium)
- Ondansetron (Zofran)
- Buscopan
- All other anti-sickness drugs

You must stop all other antacids and indigestion medicines such as Gaviscon, sucralfate and Rennies at least 24 hours before the test.

If you are on any opiates (morphine, codeine, tramadol), please consider stopping them if you are able to. We can still proceed with the test if you cannot stop them.

Any medications not mentioned here can be continued as normal.

Risks and side effects associated with wireless pH monitoring

As the capsule is placed during a gastroscopy procedure, the risks are mainly related to the gastroscopy. For most people a gastroscopy is a simple and safe procedure. Uncommon complications do sometimes arise and include chest infections, damage or perforation (a hole) in the oesophagus, stomach or intestine wall, allergy to sedative medication, bleeding or damage to teeth.

With regard to capsule insertion, there is a theoretical risk of a tear in the wall of the oesophagus from the capsule itself, but to the best of our knowledge this has not been reported in the UK. There is also a very small risk of feeling a lump in the bottom of the oesophagus due to the presence of the capsule, but this should pass when the capsule drops off.

There is a reported one percent risk of chest pain severe enough to warrant repeat endoscopy to remove the capsule, although in reality the need to remove the capsule is very rare. Also, there is a very small risk that if there is a blockage or narrowing in the small or large bowel, the capsule could get stuck. There is a theoretical risk that while lying flat during endoscopy, if the capsule comes up the oesophagus rather than down, it might be inhaled. However, this has never actually been reported as having happened.

To minimise this risk, we do not use anaesthetic throat spray during the procedure. This means that your natural cough reflux should prevent this from happening.

It is important that you do not have an MRI for 30 days following insertion of the capsule or unless you have seen the capsule drop out into the toilet.

Please contact Endoscopy Recovery if you have a pacemaker in place or if you are known to have problems with bleeding (e.g., low platelets).

Please inform us if you have a nickel allergy as you would not be suitable for the Bravo procedure.

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

You are free to choose not to have the procedure. In this circumstance, the information we have available will be used to make a decision on your diagnosis and treatment options.

Asking for your consent

We will involve you in all decisions about your care and treatment. When we obtain your consent we will reiterate the benefits and risks of wireless pH monitoring. We will answer any questions that have not yet been answered and any concerns you have can be explored. Once we are absolutely sure that you fully understand all the benefits and risks, that all your questions have been answered and that you wish to proceed with wireless pH monitoring, we will ask you to sign the consent form. If there are any concerns or questions that arise afterwards, we will be more than happy to discuss these, and the procedure can be reconsidered at any time.

What should I expect after the procedure?

Normally you should feel no different to how you usually do. You will be asked to go about your daily business and to continue with your normal daily activities so that reflux that usually occurs can be recorded. You will also be asked to fill in a food and sleep diary and to press buttons on the recorder whenever symptoms take place so that we can associate your reflux events with your symptoms.

After four days, you will be asked to return the recorder and your diary to the endoscopy unit (the address is at the end of this leaflet and on your diary). A report will be prepared and sent to your referring clinician so that the results can be explained to you on follow-up.

Important points to remember:

Do stop medications as instructed in this leaflet.

Do ensure someone accompanies you home after the procedure.

Do not eat for six hours prior to the procedure.

Do not drive for 24 hours. Please have someone to take you home in a car, taxi or public transport.

Do not drink alcohol for 24 hours after sedation is given.

Do not operate heavy machinery for 24 hours after sedation is given.

Do not have an MRI for 30 days following the Bravo procedure.