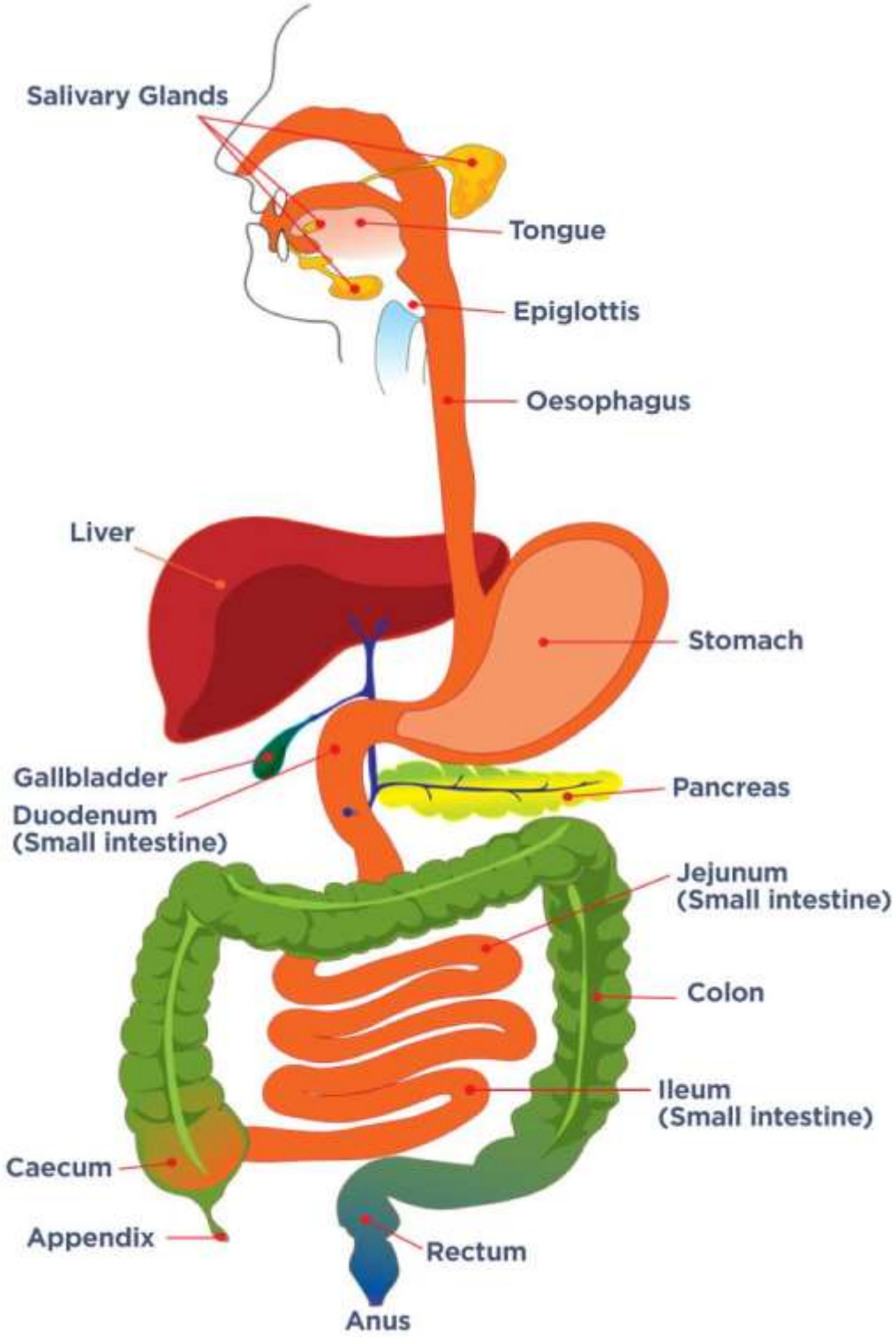
Biliary Sphincter Disorders
(former Sphincter of Oddi Disorder)
Information Leaflet

THE DIGESTIVE SYSTEM



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This information leaflet is about Biliary Sphincter Disorders, a group of conditions formerly known as Sphincter of Oddi dysfunction.

The bile duct is the channel that carries bile (produced in the liver and stored in the gall bladder) and pancreatic juices (from the pancreas) into the intestine (duodenum) where it is used to digest mainly fats but also other foods. This flow of digestive juices into the intestine is controlled by a round muscle known as the Sphincter of Oddi. This acts like a valve, so it is normally closed but opens in response to eating, allowing digestive juices to flow into the duodenum to help digest food. If the Sphincter of Oddi is not functioning correctly, it may become more difficult to digest foods, especially fatty ones, and if bile backs up in the bile duct it can cause problems with liver function.

Biliary Sphincter Disorders occurs in people who have had their gallbladder removed (an operation called cholecystectomy). Around 50,000 people undergo this operation every year and is it estimated that between 5-10% of these will suffer some long term discomfort.

Until recently Sphincter of Oddi Dysfunction was often a diagnosis given to anyone who suffered from symptoms (see below) associated with reduced bile duct function, simply when no other reason for their symptoms could be found. Having a diagnosis often made people feel better. However, a serious consequence of this diagnosis was that, if their symptoms could not be adequately managed by dietary changes or medication, everyone who was given this diagnosis could be considered for invasive investigations and ultimately, a relatively high risk, poor outcome endoscopic procedure known as a sphincterectomy. Now medical experts are agreed that unless there is a diagnosed and confirmed dysfunction of the Sphincter of Oddi, instead of using surgery or other invasive treatments, the symptoms should instead be treated on an individual basis.

To help them do this, it was agreed that the term Sphincter of Oddi Dysfunction should no longer be used as a diagnosis and instead there should now be three separate conditions, each with their own diagnostic and treatment pathway. These are:

- **Type I. Biliary Sphincter Stenosis/Obstruction:** where there is a readily diagnosable physical dysfunction of the sphincter.
- **Type II. Functional Biliary Sphincter Disorder:** where there is some low grade physical evidence of the sphincter dysfunction but not necessarily enough to warrant invasive intervention.
- **Type III. Functional Biliary Sphincter Pain:** where there is no physical evidence of bile duct dysfunction and endoscopic intervention is not helpful.

What are the causes of Biliary Sphincter Disorders?

Type I is usually caused by a narrowing (stenosis or stricture) of the Sphincter of Oddi.

The causes of Type II and Type III are not clear. It is thought that the condition can be caused by the sphincter going into spasm, being too small or not opening and closing in the normal fashion.

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Many doctors are now making links between brain activity and the behaviour of the gut, for example it is accepted that Irritable Bowel Syndrome can be worsened by stress, and there is some thought that Type III may fall into this category. This does not in any way belittle the pain that patients experience.

What are the symptoms of Biliary Sphincter Disorders?

The most common symptom for all three types is abdominal pain in the upper right section of the abdomen after eating, with a particular link to fatty foods. The pain occurs just underneath the right side of the rib cage, lasts at least 30 minutes, is not improved by bowel movements or changes in posture and can be severe enough to affect daily activities. Occasionally the pain may radiate around to the back and be severe enough to wake the patient up at night. Other symptoms that may be experienced include nausea or, more rarely, vomiting or diarrhoea. Symptoms can come and go as well as vary in severity. The symptoms can sometimes mimic other more serious conditions such as pancreatitis (inflammation of the pancreas), cholecystitis (inflammation of the gallbladder) or cholangitis (inflammation of the bile duct).

How are Biliary Sphincter Disorders diagnosed and treated?

TYPE I. Biliary Sphincter Stenosis/Obstruction

How is Biliary Sphincter Stenosis/Obstruction Diagnosed?

Blood tests will show raised liver enzyme levels during or just after an attack, which then return to normal. Imaging such as ultrasound, MRI scan, CT scan or endoscopic ultrasound will show an enlarged bile duct (suggesting a narrowing or blockage in the Sphincter of Oddi) without any other evidence of an abnormality in the pancreas or bile duct.

How is Biliary Sphincter Stenosis/Obstruction treated?

Biliary Sphincter Stenosis/Obstruction is treated by a procedure called an endoscopic retrograde cholangiopancreatography (ERCP). An ERCP involves using an endoscope which is a small tube (the width of a small finger) with a camera on the end that is inserted into duodenum via the mouth to where the Sphincter of Oddi is located. During an ERCP, the biliary ducts can be checked to ensure they are normal after which a procedure to cut the muscle fibres of the sphincter (Sphincterotomy) is performed.

Type II. Functional Biliary Sphincter Disorder

How is Functional Biliary Sphincter Disorder Diagnosed?

In addition to biliary type symptoms (as above) imaging will show slight enlargement (dilatation) of the bile duct OR liver blood tests will be raised during or just after an attack of pain. Blood tests and scans such as ultrasound, MRI, CT and endoscopic ultrasound may be arranged to check further for any signs of obstruction or more serious dilation. If all these prove negative, then a diagnosis of Functional Biliary Sphincter Disorder may be made.

How is Functional Biliary Sphincter Disorder Treated?

The main treatment of Functional Biliary Sphincter Disorder can include:

- **Dietary change:** avoiding fatty foods, dairy products or alcohol can all help to reduce the symptoms of Functional Biliary Sphincter Disorder. Effects of dietary changes vary from person to person, so referral to a dietitian may help in order that these options can be explored.
- **Pain relief:** treatment can range from over the counter painkillers to anti-spasmodics, calcium channel blockers (for example nifedipine) and nitrates. It is important to note that morphine containing painkillers or morphine itself can sometimes make the pain worse as it can cause the sphincter to go into spasm. In addition there are many other concerns when prescribing opiates including addiction.
- **Anti-sickness medication.**
- **Watch and Wait:** regular monitoring of the symptoms along with imaging of the bile duct to see if there are any changes. If the symptoms persist then the patient may be referred to a specialist clinic for an ERCP investigation
- **ERCP & Sphincterotomy:** This is now only carried out after careful assessment and within a specialist environment as the benefits are not as clear cut with Functional Biliary Disorder as they are for Biliary Sphincter Stenosis.
- **Psychotherapy:** can be used to help reduce stress, reduce expectations of pain and cope with negative feelings around food.

Type III. Functional Biliary Sphincter Pain

How is Functional Biliary Sphincter Pain Diagnosed?

As with Type II, when a patient has had gall bladder surgery and is suffering from the symptoms above, then a Biliary Disorder should be considered as a diagnosis. However, the doctor will first arrange tests to rule out more serious conditions first. These tests will all prove negative, as will liver function tests, and any imaging of the bile duct will not show any enlargement or physical defect in the bile duct.

How is Functional Biliary Sphincter Pain Treated?

As with Functional Biliary Sphincter Disorder, Functional Biliary Sphincter Pain is treated on a symptom by symptom basis. However, unlike Functional Biliary Sphincter Disorder, ERCP should never be considered either for diagnosis or treatment.

What can be the impact of Biliary Sphincter Disorders?

Functional Biliary Disorder can impact a person in many ways including its overall impact on general well-being due to the symptoms, which can be long term and frequent. It is recognised that ongoing symptoms with no clear cause can cause major upset, frustration and feelings of hopelessness amongst many patients. If any of these feelings are experienced, it is important to let the doctor know so that appropriate support can be organised.

Do Biliary Sphincter Disorders need to be monitored and, if so, how?

- **Type I:** if dilation or sphincterotomy have been carried out, then usually one follow up appointment with the specialist who carried out the procedure should be sufficient to establish whether it has been a success. If pain is still present then another diagnosis should be considered.
- **Type II and Type III:** if the symptoms of Functional Biliary Disorder are well controlled then regular follow-up with a doctor is not necessarily required. However, in many cases the symptoms can come and go, in which case regular follow-up would be useful to ensure that new treatments for symptom control can be considered.

What to ask your doctor when you see them?

Type II:

- If I need an ERCP can I be referred to a specialist unit?

Type III:

- May I be referred to a dietitian to see if there are any changes to my diet that may help with my symptoms?
- Which treatment option is best for me?
- May I be referred for psychotherapy?

What more research needs to be done on Biliary Sphincter Disorders?

Further research into the underlying causes of Biliary Sphincter Disorders may help the development of more targeted treatments. This includes exploring better medical therapies for patients.

For more information about research in this area please contact Guts UK Charity on

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