Bornholm disease is an illness which causes flu-like symptoms, together with pain in the chest or tummy (abdomen). It usually lasts for only a few days. Complications rarely occur. Young babies are most at risk of serious complications. Babies may need preventative treatment (immunoglobulin) to help prevent complications.

What is Bornholm disease and what causes it?

Bornholm disease is caused by an infection with a virus. This causes pain in the chest or tummy (abdomen), with flu-like symptoms. In most cases it is not a serious illness, and the pain gets better as the infection clears.

Bornholm disease is infectious - it can spread easily from one person to another. This means that it tends to occur as an outbreak in a community, or even as an epidemic affecting a large number of people in one area.

The name of the virus that most often causes Bornholm disease is Coxsackie B virus. Other viruses that may sometimes be the cause are Coxsackie A virus or a type of echovirus. All these viruses belong to a virus group called enterovirus.

It is thought that the virus causing Bornholm disease causes inflammation, particularly in the muscles of the chest wall. This is why pain from the chest wall is often the main symptom.

The name Bornholm disease was given by a Danish doctor, Sylvest, who observed the illness on the island of Bornholm in Denmark in the 1930s. Other names for Bornholm disease are epidemic pleurodynia or epidemic myalgia.

What are the symptoms of Bornholm disease?

The main symptom is pain in the lower part of the chest (pleurodynia) or the upper part of the tummy (abdomen). The pain may be sharp or severe, and feels worse when taking a deep breath or when moving. The pain can come and go in spasms, with a dull ache in between. If the pain is severe, you may experience difficulty breathing because of the pain. The area that is painful may also be tender.

There are usually flu-like symptoms as well. Most people have a high temperature (fever), and you might also have headache, generally aching muscles, cough, sore throat, abdominal pain or diarrhoea. Testicular pain can occur, because the virus can cause inflammation of the testicle (testis), called orchitis. A viral rash is quite a rare symptom.

For most people, the illness lasts just a few days. Sometimes, it can last longer, up to around three weeks. Sometimes the symptoms come and go for a few weeks before they clear up completely.
How does Bornholm disease spread?

The illness can spread from person to person through contact with saliva or stool (faeces) - this is similar to the way many viral infections are spread. For example, in one outbreak the illness spread when a group of children were sharing drinks containers.

Bornholm disease spreads easily (it is very infectious). Symptoms start a few days after contact with the virus.

How is Bornholm disease diagnosed?

Usually the diagnosis is made on the basis of symptoms and a doctor’s examination. If there is a known outbreak or epidemic of Bornholm disease in the community then it can be easy to recognise.

Tests may be needed in some situations. For example, to rule out other conditions causing chest pain, such as heart or lung problems. Also, for pregnant women or young babies (see below), when it is more important to have a definite diagnosis.

There is no single test that can diagnose or rule out Bornholm disease, but the virus causing it can often be identified. This is done either with a blood test for antibodies to the virus, and/or by using culture tests, where the virus is grown from a throat swab or stool (faeces) sample.

How is Bornholm disease treated?

In most cases, once the diagnosis has been made and other conditions ruled out, the only treatment needed is pain relief. For example, using standard painkillers such as paracetamol, ibuprofen or codeine, possibly in combination. Newborn babies who are at risk of catching the virus may need preventative treatment (see below).

Are there any complications?

Complications of Bornholm disease are rare. Most people make a full recovery within days or weeks. However, the following complications have been seen in a few cases:

- Heart problems - inflammation around the heart (pericarditis) or inflammation of the heart muscle (myocarditis) or fast heart rhythm (tachycardia).
- Inflammation around the brain (meningitis).
- There may be a risk of severe illness in young babies, especially those under 1 month old (see below).

Hospital treatment may be needed for these complications, but most people make a full recovery as the infection is usually cleared by the immune system.

Preventing complications in young babies

One type of virus which causes Bornholm disease - called echovirus - may cause serious illness in young babies. The following information applies to echovirus infections generally, rather than to Bornholm disease in particular.

Echovirus infections are common and many are not serious. For young babies, echovirus infections can vary from a mild infection which is hardly noticeable, to a serious illness with infection of internal organs, which may be life-threatening. The risk is greatest for newborn babies (those under 1 month old). Therefore, if a young baby has been in contact with an echovirus infection (including Bornholm disease), preventative treatment may be advised.

The recommended treatment is called immunoglobulin. This is given as an injection or infusion (a drip). Immunoglobulin is a purified blood product, and contains antibodies which help the body fight infections. Immunoglobulin does not stop the baby from catching the virus, but helps to make the illness less severe, or may prevent complications. For example, immunoglobulin successfully prevented complications in one neonatal ward, during an outbreak of echovirus infection.
Pregnancy

If you have Bornholm disease during pregnancy:

- The main problem is that the baby when born could catch the infection from you, or from other family and friends who have caught the virus. As explained above, this carries a risk of severe illness in the baby. Therefore, preventative treatment with immunoglobulin may be advised for the newborn baby.
- With any feverish illness during pregnancy, there is a small risk of miscarriage.
- Some viral infections can affect an unborn baby. Whether this applies to the viruses causing Bornholm disease, is not clear. Overall, it would seem that Bornholm disease does not usually harm the unborn baby. This may depend on which virus is causing the illness - echoviruses seem not to be harmful in pregnancy. However, some research suggests that Coxsackie B virus may (rarely) cause miscarriage, stillbirth, or myocarditis.

More about the Coxsackie B virus

There are other possible complications from one type of virus that causes Bornholm disease - the Coxsackie B virus. However, it is not clear whether or not these complications apply to Bornholm disease specifically. These complications are probably rare, compared to the number of people who have a Coxsackie B virus infection (which is common) and recover completely. At the moment there isn't a lot of evidence to support the links. The possible complications which might be linked to Coxsackie B virus infection are:

- Inflammation around the brain (meningitis)
- Inflammation around the heart (pericarditis) or inflammation of the heart muscle (myocarditis).
- Chest infection and pneumonia.
- Chronic fatigue.
- Liver inflammation (hepatitis).
- Inflammation of the pancreas (pancreatitis).
- Diabetes.
- Heart muscle disease (cardiomyopathy).

Further reading & references

- Guidance on Viral Rash in Pregnancy; Health Protection Agency; (January 2011)

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