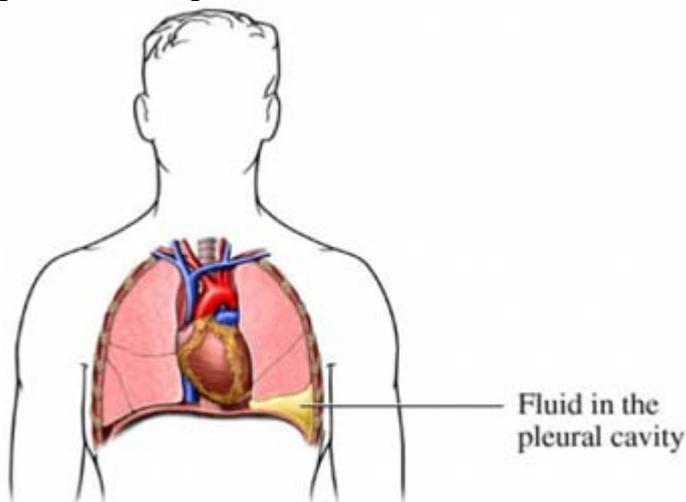

PLEURAL EFFUSION AND EMPYEMA

What is pleural effusion?

Pleural effusion refers to a condition where fluid accumulates between the outside of the lung, and the lining at the back of the ribs.



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What causes it?

The causes of pleural effusion are varied. It most commonly occurs along with a pneumonia. This can often develop into “empyema” (see below).

Other causes of pleural effusion in children include trauma and injury, kidney or liver problems, pancreatitis, heart failure, malnutrition or (extremely rarely) malignancy. They can also occur after certain types of surgery to the chest or heart.

Is it common?

Pneumonia is much more common in New Zealand than in the USA, or Europe. The reason for this is unclear. It is also unclear how common pleural effusion with pneumonia is in children. In adults in New Zealand, approximately 20% with pneumonia will develop an effusion.

Effusions for other reasons given above are much rarer, as the conditions listed are extremely rare.

How is it diagnosed?

Effusion is clinically suspected by a child having persistent shortness of breath or temperature after a pneumonia is treated, and then having certain specific findings on examination. A chest xray can usually confirm the presence of an effusion. Occasionally an ultrasound scan of the chest is needed to help decide the best course of action.

How can it affect my child?

A small effusion will probably have no effect on your child's recovery from pneumonia. If the effusion is moderately large, and it compresses (squashes) some of the lung, there may be a concern that the lung won't fully re-expand after the effusion has resolved. A large effusion may affect the lungs enough to require your child to have oxygen.

All but the smallest effusions can mean the temperature caused by the pneumonia doesn't settle quickly.

If the effusion is due to some other problem, then although it may not have any unwanted effects other than those given above, the underlying cause may also affect your child's wellbeing.

What needs to be done with an effusion?

If the effusion is large it will need to be drained to remove the pressure on the lung. However, even if it is a small amount, if the effusion is thought to be due to something other than pneumonia it will need to be sampled ("tapped"), to establish why it has arisen. These procedures are performed under a General Anaesthetic. If a chest drain is inserted, it will be left in place for until the fluid has stopped accumulating (usually 3-5 days).

What is Empyema?

Empyema is a condition that starts as a pleural effusion, but the fluid gradually becomes thicker and can develop into a material called "rind". This forms a layer over the outer surface of the lung. It takes a lot longer to resolve than a simple watery effusion. Whilst the empyema is resolving, the child may still be pyrexial (have a temperature), and feel unwell.

Is it common?

Empyema is seen increasingly commonly in children with pneumonia, although the reason for this is unknown.

How is it diagnosed?

Empyema can be diagnosed by an ultrasound scanning of the chest.

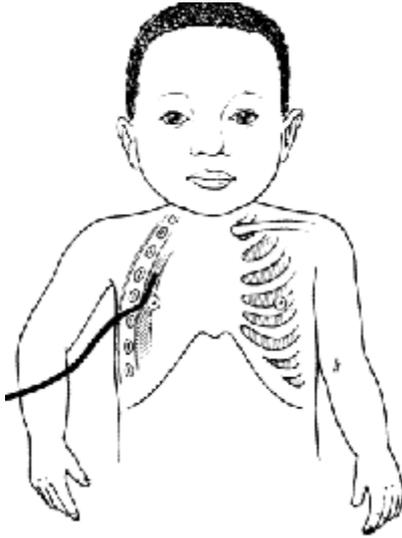
How is it treated?

There is some debate as to the best form of treatment. If the fluid is still purulent, and can drain away, insertion of a chest drain, and use of a medicine called "urokinase" to make the pus more free flowing can resolve the problem. Occasionally however, the material is too thick, and has to be removed by an operation. This may be done using keyhole surgery (Video Assisted Thoracoscopic Surgery), or may require a larger incision to get all the empyema out.

How can empyema affect my child?

If the empyema is small to moderate in size, the most likely effect is that your child will be unwell for longer, but will eventually make a full recovery. If the degree of empyema is larger, it may cause some collapse within part of the lung. When the empyema finally resolves (after perhaps 4-6 weeks of no surgical treatment), there is then a risk that any collapse will be permanent. This increases the risk of further infection in that part of the lung. Once this permanent collapse has happened there is nothing that can be done to undo it.

It is thought that it is better to remove the empyema sooner rather than later, in order to speed up the rate of recovery, and also to reduce the risk of long term lung damage. Removal may be with a chest drain and urokinase, or by an operation. Your Respiratory Specialist will discuss the different options and the reason for favouring one over the other.



A chest drain in a young child

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This information sheet is produced to answer some of the questions parents ask about pleural effusion and empyema. It is not intended to replace discussion with your child's Respiratory Specialist; and you are encouraged to discuss your child's condition with the specialists when you attend clinic.