

Eventration Of the Diaphragm

What is the diaphragm?

The diaphragm is the major muscle of respiration and separates the thoracic and abdominal cavities. The phrenic nerve is responsible for the contraction of the diaphragm.

What is diaphragmatic eventration?

This is a condition in which the diaphragm is placed at a much higher level than it normally is because it is paralyzed and fails to contract. It most commonly is congenital (present at birth) and may result from a phrenic nerve problem or an abnormally thin diaphragm at birth. Rarely it may affect adults or cause symptoms in adults.

What causes diaphragmatic eventration in adults?

In adults this condition is caused by an injury to the phrenic nerve or an infection or a cancer in the chest that causes the phrenic nerve to function poorly. Often a viral infection that results in an eventration may go unnoticed and the results may become apparent several years later. One half of the diaphragm, commonly the left side, is affected. As the lower half of the lung fails to expand properly as the diaphragm does not contract it does not take part in the breathing process effectively.

What symptoms do patients with an eventration experience?

This condition is often asymptomatic. The patients may experience respiratory symptoms such as breathlessness, cough or chest pain particularly on exertion. In addition, patients may suffer from recurrent pneumonia, bronchitis, or cardiac arrhythmias. They may also experience gastrointestinal complaints resulting from compression of the stomach.

How is the diaphragmatic eventration diagnosed?

In the majority of cases, the condition is picked up on a chest x-ray performed for assessment of some other problem demonstrates a raised diaphragm on one side. This is further confirmed by a fluoroscopic examination in which the movement of the diaphragm is observed by continuous x-ray as the patient is asked to breathe in and out deeply. A CT scan may be ordered to rule out a cancer or a tumor inside the chest as a cause for the paralyzed diaphragm. The function of the lungs is assessed by performing pulmonary function tests.

Do all patients with diaphragmatic eventration require surgery?

Treatment is individualized and depends on the degree to which the patient is experiencing symptoms. Most healthy adults with isolated diaphragmatic paralysis are asymptomatic or suffer only from mild breathlessness on exertion. The vast majority of these patients do not require surgical treatment and are best treated conservatively (e.g., with physical therapy, pulmonary rehabilitation, and counseling on weight loss, if necessary). Patients are often observed for a year or so after the diagnosis is made, and are offered surgery only if the symptoms worsen.

What is the surgical treatment of diaphragmatic eventration?

The most commonly used treatment for this condition is diaphragmatic plication. This is performed under general anesthesia and can be done as an open operation or accomplished by thoracoscopic surgery. Multiple sutures are placed on the paralyzed diaphragm to pleat it. This makes the lax diaphragm taut and moves it to a lower position. As the space on the side of the chest cavity is increased, the lung is able to expand better and functions better than before.

What are the advantages of a thoracoscopic plication of diaphragmatic eventration?

- Less pain from the incisions after surgery
- Shorter hospital stay
- Shorter recovery time
- Faster return to work or normal activity
- Better cosmetic healing

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Disclaimer

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