Dear Alice,

My daughter's friend was having this problem I have never heard of: she had spinal fluid draining out of the nose. What causes this? Is it serious and what are the side effects from the drainage?

Answer

Dear Reader,

It sounds like you are describing a condition called cerebrospinal fluid rhinorrhea: a condition where the cerebrospinal fluid, the protective liquid that bathes your brain and spinal cord, leaks through a rip or tear in the surrounding thick layer of tough, fibrous tissue called the dura mater. The leaking fluid can then enter your nasopharynx — the upper part of the throat and behind your nose. There are several potential reasons why the dura mater might rip or get punctured, however, sometimes the cause can be difficult to determine (more on that in a bit).

And, while some of the side effects of spinal fluid dripping from your nose can be managed by a health care provider, seeking out medical attention is advised due to the risk for serious infection.

Although it’s called dura, implying its resilience, the layer can be ripped or punctured, causing cerebrospinal fluid to leak out. Researchers believe that head trauma or surgery could break or weaken the dura mater. In these cases, symptoms can begin to appear at various times — some have been shown to arise within 48 hours of trauma or as far off as three months later. But there are other potential causes of cerebrospinal fluid rhinorrhea: a brain tumor could cause the rupture, or obesity and intracranial hypertension (high blood pressure in your head). Infections in the ear canal, sinus cavities, eyes, or even in a blood clot or mass of fat called an embolism could erode the dura mater and make it susceptible to ripping.

Other instances of the rhinorrhea can’t be traced back to any one cause and it isn’t really known how they start. If the leak is so-called spontaneous, they will likely recur. Additionally, the person with the condition may have a syndrome called empty sella, which is when a person’s pituitary gland (a gland in the brain that releases different hormones) is flattened because as the fluid leaks around the gland and puts pressure on it, it changes the gland’s shape.

Effects of the condition are often headaches, dizziness, tinnitus (the feeling of ringing ears), feeling like your ears are clogged, feeling congested or stuffy-headed, feeling nauseous, or
having a stiff neck. These effects can often be treated by a quick visit to a health care provider. One of the more life-threatening effects of cerebrospinal fluid rhinorrhea is the ease with which infection can spread: a microbe or bacterium in your nose or the back of your throat could easily flow into the broken tissue and begin to multiply around the brain or spinal cord. This could lead to the potentially serious condition of meningitis [3], when the tissue around your brain swells. A second life-threatening complication from the leak is called tension pneumocephalus?though rare, it’s a condition that occurs when air is pulled into the dura mater and leads to compression of the space around the brain, leading to neurological dysfunction or even death.

While this may sound a little scary, cerebrospinal fluid rhinorrhea can be treated by lowering the pressure at the leak: this can be done by draining spinal fluid from lower in the back. A health care provider may advise you to avoid blowing your nose, and may prescribe stool softeners or anti-coughing medication so that the head and neck don’t have to strain. In the case of tension pneumocephalus, the air in the dura mater may be removed. Although surgery isn’t usually required, there have been attempts to repair the dura mater lesion by using cartilage, fat, or even muscle fibers from a different part of the body.

Here’s to hoping for a speedy and full recovery for your daughter’s friend.

Alice!
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