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SUBSPECIALIST CONSULT

Evaluation of the Child With Syncope

Fainting in children most often is benign. Often from a history alone, you can determine critical information that will enable you to reassure the patient and family or to consider referral for a specialist evaluation.

The most important thing to determine is the course of events that preceded the syncopal event. That is, if the child just completed a sporting activity on a hot day, was in a hot shower, had a high fever, or was dehydrated before fainting, the level of anxiety about the event should be very low. The same applies if the syncope was triggered by a sudden fright or other strong emotional event.

If the child is old enough to provide a good description of the event, ask if they "knew" that something was about to happen before they fainted. Most patients with routine syncope report an "aura" that includes visual changes (tunnel vision or vision getting dark, for example) and dizziness. Also, witnesses will say that the child "woke up" quickly and without prolonged confusion after the event. Such a description helps to distinguish a simple syncopal event from a seizure or a life-threatening arrhythmia.

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With most benign cases of syncope, the pediatrician should counsel the child and the parents about adequate hydration before participation in sports and to be mindful of getting enough salt in the diet.

A normal history and physical examination should reassure you. In most cases, these normal findings will mean that you can treat the child in your office without further referrals.

Don't forget to take the child's blood pressure. Low resting blood pressure, especially in rapidly growing teenagers, can predispose your patients to vasovagal syncope. Patients with low resting blood pressure often have a lower threshold for syncope, compared with children with normal pressure. Recommend addition of some salt to the patient's diet if he has low blood pressure – this can help to reduce the risk of future syncope.

Injury prevention is important, because children who experience syncope often fall unexpectedly. The best strategy to minimize this risk is to review the symptoms that herald the onset of syncope with each patient. Then instruct the child if she experiences any of the warning signs to get to the floor with her legs elevated as soon as possible. This also will reduce the severity and the length of the episode.

Patients and parents will naturally have questions after the child experiences syncope. Although noncardiac conditions such as hypothyroidism or epilepsy can cause a child to faint, fainting is usually a failure of the heart to pump enough blood to the brain. Syncope can result from low blood pressure (dehydration, vasodilation), poor pumping function of the heart, other structural heart issues, and/or from a change in the rhythm that leads to less-efficient pumping. Rhythm changes include both fast and slow heart rates.

In the absence of any structural or electrical abnormality of the heart, the most common reason for fainting is vasovagal syncope. There are two sets of nerves that connect the central nervous system to the heart. The sympathetic system sends the "speed up" signal to the heart and the vagus nerve sends the "slow-down" signal to the heart. Vasovagal syncope occurs when the body sends an erroneous signal to the heart to slow down, insufficient blood is pumped, blood pressure falls, and the child faints.

During a syncopal work-up, most important structural heart issues, which can cause fainting, will be obvious on a physical examination. In almost all cases, children with cardiac disease significant enough to cause syncope will have been diagnosed previously. The exam can feature significant cardiac murmurs, peripheral edema, chest pain, jugular venous distension, hepatomegaly, and absent or diminished pulses. Patients with significant congenital heart disease most often will present with shortness of breath on exertion. If you rule out these findings and the patient has a normal examination, you can be virtually certain that the event is not related to a structural heart problem.

If there is any doubt, an echocardiogram is the definitive test to rule out a subtle structural abnormality. Hypertrophic cardiomyopathies and coronary anomalies are among the conditions that may contribute to syncope and may only be detectable with specialized cardiac imaging.

The child with recurrent syncopal events or with an atypical history most often requires additional evaluation by a specialist, usually to reassure the family. When I see a patient for the first time, I take a thorough history and order an ECG to detect the most common electrical/arrhythmic reasons for syncope. A diagnosis of Wolff-Parkinson-White syndrome, heart block, and long QT syndrome can easily be identified from a routine ECG. Holter evaluations or 30-day home monitoring may be helpful in ruling out arrhythmias. Neurologic evaluation can be helpful to rule out seizure activity which may masquerade as syncope. Rarely, in teenagers and adults, atypical migraine headaches may present with alterations of consciousness. In these patients, there is often a strong family history of migraine. When these episodes recur, they are similar each time, as is stereotypical of other migraine aura. ■

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