What is torsion of the testicle?

Torsion of the testicle is the most common pediatric urologic emergency. It occurs when blood cannot flow to the testicle because the blood vessels have been twisted shut. This usually happens because the testicle itself has been twisted or torsed. The twisting or torsion blocks the vessels which supply the testicle with oxygen and other nutrients. When torsion has occurred and is unrelieved the testicle dies and rots.

The fetal testicle develops with the abdomen. During gestation it migrates into the scrotum. Trailing behind it like a leash is its blood supply. In the scrotum the testicle resides within a smooth sac called the tunica vaginalis. The testicle can spin and move about within the sac. As males grow and age the testicle develops adhesions or connections with the sack making it harder for the
testicle to spin or twist. This is why torsion is usually seen in younger men, adolescents, and children.

What are the common symptoms?
Sudden scrotal pain is the most common symptom. The pain is usually on one side, but it can spread and be felt in the groin, abdomen, and flank. About one in four will have nausea and vomiting and some will have difficulty urinating. The pain can come during activity, such as sports, or after minor accidents. It can come on at rest or even during sleep. Children, particularly teenage boys, are often reluctant to report testicular or scrotal pain. Hours and sometimes days can pass before they are seen by a physician. The diagnosis of torsion can be difficult to make. Other illnesses can appear like torsion. But because torsion if left untreated will lead to the loss of the testicle, any acute scrotal pain is treated as torsion until proven otherwise.

What are the options for treatment?
The only treatment of testicular torsion is immediate detorsion and fixation of the testicle to the scrotal wall. Occasionally it is possible to manually untwist the testicle, but the safest and surest course of action is surgical exploration. The child is put under general anesthesia and a small incision is made through the scrotum. The testicle is examined under direct vision. If the testicle has already died it is removed. If it has twisted, it is untwisted and observed. If it fails to "pink up" and appear normal, it is usually removed. If it looks normal and healthy it is securely sewn to the sewn to the scrotal wall to prevent any further twisting. When torsion is found on one side, the other side is also explored and its testicle sewn down. Experience has shown that if one testicle can twist the other one can as well. The surgery usually takes about one hour to perform and most children are able to go home afterwards.

Occasionally the testicle is found to be fine, but that another structure has
twisted. There are several small normally occurring growths which can be found coming off the testicle and epididymis, the tube which carries the sperm from the testicle. These growths are the remnants of the female reproductive ducts in males. They can have small outgrowths called the appendix testis and the appendix epididymis. When they twist they can be very painful and mimic testicular torsion. There is often a characteristic blue-black dot visible under the scrotal skin. The dot marks the spot where the appendix testis or epididymis has twisted. Though this condition is benign and will gradually get better on its own, exploratory surgery is usually recommended in order to confirm the diagnosis.

**Will the condition improve?**

When testicles have been torsed they can sustain injury even if they are de-torsed. The key factor is the length of time between torsion and detorsion. Torsion relieved within six hours or less usually results in no lasting effects. After six hours the risk of testicle death and damage increases. Even if successfully de-torsed, it has been shown in some animal experiments and in observations of patients that after six hours of torsion the testicle is vulnerable to lasting injuries. These injuries can cause decreased sperm production and fertility.