



APSA
American Pediatric
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Adrenal Tumors

Patient and family information, brought to you by the Education Committee of APSA

Overview - “What is it?”

The adrenal gland is an organ in the body that makes hormones. Hormones are substances in the body that help in many different functions. A type of hormone the adrenal gland makes is adrenalin (epinephrine) and similar types of hormones. This class of hormones helps maintain blood pressure and heart rate. Adrenalin also helps us run or fight when we are threatened. The adrenal gland also makes other hormones like steroids. These steroid-like hormones that help us maintain our growth (cortisol), kidney function (aldosterone) and sexual development (estrogen and testosterone). (See Figure 1)

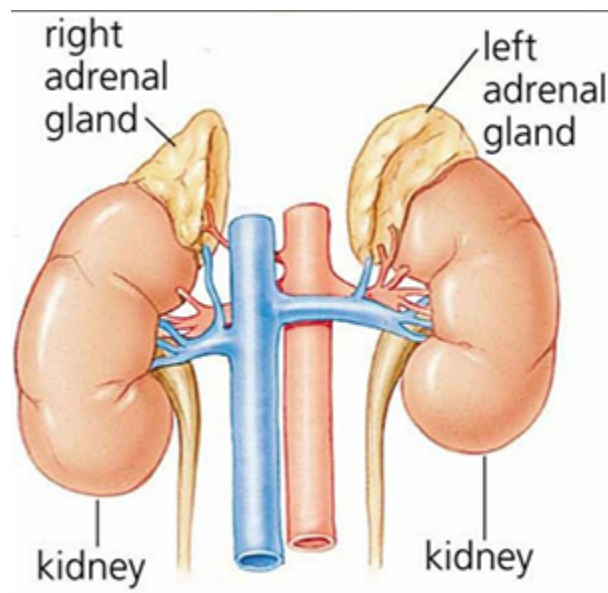


Figure 1: Adrenal glands located above each kidney.

Tumors can come from tissue that produces either type of hormone (adrenaline family or steroid family). These tumors can be either benign (not cancerous, in terms of not being able to spread through the body) or malignant (cancerous). Another name for benign tumor is adenoma. Tumors from the part of the adrenal gland that makes adrenaline are also called pheochromocytomas. Pheochromocytomas can be benign (more common) or malignant. In

babies and young children, there is a type of tumor that can also arise from the adrenal gland called a neuroblastoma.

Epidemiology: These tumors are rare. The cancers that make steroid-type hormones account for only 0.2% of cancers in kids. Benign tumors are slightly more common than malignant tumors. Neuroblastoma is the most common tumor arising from the adrenal gland.

Signs and Symptoms - “What symptoms will my child have?”

Many of these patients will have high blood pressure or a fast pulse rate. In some patients, the tumor may become big enough to cause distention of the belly. Some of the patients will have problems because of effects of too much hormone. This may result in abnormal hair growth, facial hair growth, early puberty or breast development. Some patients may gain a lot of weight or get stretch marks. Sometimes, these tumors have no symptoms and the mass is seen in an x-ray that was being done for another reason.

Diagnosis - “What tests are done to find out what my child has?”

- Urine and blood will be collected to see if the tumor is making abnormally high levels of hormone. The hormones that can be elevated are the adrenaline family or the steroid family. There are some tumors that do not make any hormones at all.
- X-ray tests are performed which help us know how large the tumor is and whether it has spread to lymph nodes or distant sites. Ultrasounds, chest X-rays, CT scans (See Figure 2) and MRIs may all be used to help diagnose and treat your child. Sometimes, nuclear medicine scan can help to figure out what type of tumor is in the adrenal gland.

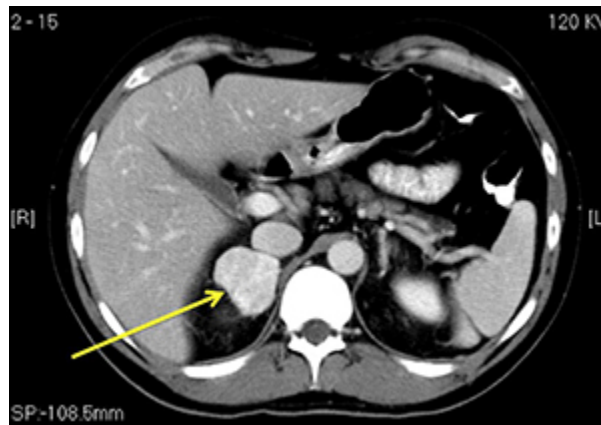


Figure 2: CT scan demonstrating a right adrenal mass (arrow).

(Image provided by R. Ignacio 2016)

Treatment - “What will be done to make my child better?”

- It is important to know if the adrenal tumor makes adrenaline. If it does, medicines to control the blood pressure and the heart rate are needed to make surgery safe.
- After the tests have been analyzed, the tumor will be removed. All adrenal tumors in kids are taken out. This helps us to determine whether the tumor is cancerous or not. It also helps determine if chemotherapy or radiation is needed so the tumor would not come back.
- Risks of surgery include bleeding, infection, and return of the tumor.

Home Care - “What do I need to do once my child goes home?”

Diet: Your child’s diet should be normal after they return home.

Activity: Recovery from surgery usually takes about a month. After the recovery period, no restrictions in activity will be needed after the surgical wounds have healed.

Wound care: Sponge baths can be given shortly after the operation. The wounds can be washed with sponge baths. Regular baths can be given after about one week.

Medicines: Stool softeners, laxatives and pain medications may be prescribed for your child.

What to call the doctor for: Call the doctor or seek medical attention if your child has fever, redness around the wound, inability to stool or keep fluids down or vomiting.

Follow-up care: Your child should be followed regularly by your endocrinologist or cancer doctor to make sure that the tumors don’t come back.

Long Term Outcomes - “Are there future conditions to worry about?”

- Most of the tumors that make adrenaline are benign. A few are malignant (cancer) and will need to receive chemotherapy.
- Tumors that make steroid hormones are harder to assess. Sometimes, the differences between the cancerous tumors and those that are not cancer are difficult to determine, even after the tumor is examined under the microscope. Your doctor will discuss with you how your child will be monitored for tumor recurrence. If the tumor appears to be cancerous, the child may require chemotherapy.

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Editor: Janice Taylor, MD