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RECURRENT EAR INFECTIONS (Acute Otitis Media)

Otitis Media (ear infection) is one of the most common illnesses of childhood. Approximately 75% of children will have at least one infection by the time they reach 3 years of age. Children who have 3-4 ear infections a year, which clear readily with antibiotics rarely require any further treatment. Children who have frequent bouts of ear infections (acute otitis media) which are difficult to control, often times need further evaluation and therapy. There is a variety of reasons for developing ear infections. The most common one is that the eustachian tube is not functioning properly. The eustachian tube is a tube that runs from the back of the throat to the middle ear and allows fluid to drain from the ear, air to get into the middle ear, and equalize the pressure in the middle ear space. We all have experienced pressure differences in the middle ear when we fly on a plane or drive over a mountain pass and our ears pop. This popping is the equalizing of pressure in the middle ear to the outside air pressure. Children who have frequent ear infections are rarely able to have the pressure equalize in the ear and often times will have a build up of fluid in the ear. These children are predisposed to developing recurrence of ear infections. The eustachian tube may not work properly because the tube is not fully-grown and developed. With passing of time, the tube should function more efficiently as the child's head enlarges in size. An enlarged adenoid pad may obstruct the opening to the eustachian tube. Upper respiratory allergies may cause swelling around the tube and decrease the function of the tubes. There is a variety of other less frequently encountered problems, which also may attribute to poor eustachian tube function.

During the early stages of an ear infection, the child's ear is usually very tender and the child will run a temperature. This acute stage usually responds fairly well to antibiotics. The first several ear infections are often cleared up with less powerful antibiotics. However, as the episodes of acute otitis media increase in number, the bacteria often become resistant to some of the basic antibiotics and antibiotics that are more powerful are required in order to treat the infection. Often times after the infection has cleared, there is still fluid left in the middle ear space. Fluid left in this space causes a hearing loss and, in young children, extended times with fluid left in the middle ear space will often lead to speech development problems and other learning disabilities. If your child is having frequent infections that last for several weeks before the fluid is cleared, it is easy to see how the child may be going several months during the year without hearing properly. For example: A child that has 6 infections a year, requiring approximately 2 weeks for the fluid to clear, would leave the child with a hearing deficit for a period of 3 months of that year. It is not uncommon that children will have upwards of 10 infections a year that take somewhere between 10 days and 3 weeks to clear. Thus, we can see that a significant time period will elapse where the child is not hearing properly.

There is a variety of treatment options available. Initially, almost all ear infections are treated with antibiotics. If there are a limited number of infections occurring per year and the infections completely clear with no residual fluid in the ear after the infection, no further treatment is required. If there are frequent bouts of infections, which are slow to clear, requiring multiple extended courses of antibiotics, therapy that is more aggressive is indicated. A preventive course of antibiotics may be tried in which the child is given a lower than normal dose of antibiotics on a daily basis even when the child is healthy in order to try to prevent infections. This has the advantage of preventing the early multiplication of bacteria associated with colds and will reduce

the number of infections. In some children, this is a very effective treatment option. The advantage is that the medication is given usually on a once a day dose and does not require any surgery and is generally less costly. The disadvantages include resistance of organisms to particular antibiotics, side effects of antibiotics including development of an allergic reaction to an antibiotic, diarrhea, and other potential problems. This treatment option is only available for those children who go on to completely clear the fluid from the ears. If fluid does not completely clear from the ears, the child will continue to have significant problems with hearing and further therapy is indicated.

When children have frequent infections that are very difficult to clear with antibiotics or do not clear at all, and have had problems with the antibiotics or have failed a prophylactic trial of antibiotics, surgery is often the best choice to correct their problem. Surgical options can vary. Often for recurrent ear infections, the treatment includes making a small opening in the eardrum and placing a tube in the eardrum to allow air into the ear and fluid to drain out of the ear. This is referred to as tympanoplasty and tubes. The procedure is short, requiring approximately 15-30 minutes. It requires a general anesthesia and the child goes home from the hospital the same day. The major advantage of tubes is that they completely bypass the eustachian tube allowing excellent drainage of fluid from the ear and immediate equalization of pressure in the middle ear. This significantly reduces the number, duration, and severity of the ear infections and frequently improves hearing. The disadvantage of tubes is that a surgical procedure is required and after the tubes are placed, it is important that the child not be allowed to have water in his ears as water may flow in through the tube and allow an infection to enter into the middle ear. The adenoid tissue can be a major contributing factor to recurrent ear infections and adenoidectomy (removal of the adenoid tissue) may be performed at the same time that tubes are placed in the drum.

The adenoid tissue can be enlarged and can block the eustachian tube opening so it does not function properly. It also harbors bacteria and allows bacteria to move up the eustachian tube giving rise to further episodes of ear infections. Adenoidectomy is also performed under general anesthesia. The procedure, including tympanostomy and tubes takes approximately 45 minutes and the child can leave the hospital the same day. The combination of adenoidectomy and tympanostomy and tube placement is often times and extremely effective way to treat ear infections eliminating the need for frequent use of antibiotics.

There are other factors that almost certainly contribute to recurrent episodes of ear infections. Allergies can be a significant problem for children. Allergies may be difficult to detect. We would ask that you as parents be observant of your child and how your child reacts to various things in their environment including foods, exposure to grasses, various types of pollen, and exposure to various animals particularly cats, dogs and horses. Cigarette smoking significantly increases the incidence of ear infections in children whose families have cigarette smokers in the household. If your child is experiencing recurrent ear infections and you are a smoker, this would be an excellent time to consider giving up cigarette smoking. You as well as your child will note a significant improvement in health. If you are unwilling or unable to quit smoking, we would suggest that you attempt to not expose your child to the cigarette smoke.

For the most part, recurrent ear infections can be controlled with appropriate therapy. We believe that recurrent ear infections can potentially lead to significant problems including long-term damage to the eardrums, hearing mechanism and speech development. With the various therapies, we feel ear infections can be well controlled for the most part.

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