

Summer-Fall Peak Time for Valley Fever Infection

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Kandis and Phillip Watson became alarmed when their normally energetic 6-year-old son, Kaden, grew increasingly tired. “When he stopped joking like he used to, we really knew something was wrong,” said Kandis.

The family from Visalia, Calif., soon learned Kaden contracted valley fever, a flu-like and potentially deadly illness caused by inhaling airborne spores of a dirt-dwelling fungus. Endemic throughout the southwestern United States and particularly prevalent in the southern San Joaquin Valley

of Central California, the hard-to-detect disease can affect children and adults. In Kaden’s case, the disease enveloped his chest so severely his trachea narrowed to only 4 mm, allowing him to breathe through an opening the size of a straw.

“I don’t think people realize how devastating valley fever can be,” said Dr. James McCarty, medical director of pediatric infectious diseases at Children’s Hospital Central California, who has been treating valley fever in children for more than 25 years. “Kaden had the worst case of mediastinitis (tissue inflammation in the mid-chest) I’ve seen.”

Valley fever is primarily caused by the fungus, *Coccidioides immitis*. The disease spreads through spores in the air when contaminated soil is disturbed such as by construction, dust storms and earthquakes.

Although most coccidioidal infections are asymptomatic, the illness often affects the lungs, as in Kaden’s case. Known as disseminated valley fever, sometimes the disease impacts other parts of the body including the

brain, bone, skin and other organs. Without proper treatment the illness can lead to severe pneumonia, meningitis and even death.

Increase in the Disease

More than 20,000 cases of valley fever are reported each year in the United States, but many more cases likely go undiagnosed. Over the past decade, the incidence of valley fever has surged. After remaining stable since 1995, reported coccidioidomycosis cases in California jumped from 816 in 2000 to 2,981 in 2006, according to the Centers for Disease Control and Prevention.

Children’s Hospital Central California sees about 25 percent of the pediatric valley fever cases statewide, with many of the serious infections under age 4. In 2009, 21 patients were admitted to Children’s for coccidioidomycosis, followed by 32 in 2010, 52 in 2011 and 61 in 2012. “Typically, Children’s has one to two inpatients at any one time for valley fever,” said Dr. McCarty. “But in recent years we peaked at 16 at one time. That’s phenomenal.”

This year, Children’s total inpatient

valley fever cases have tapered to about a dozen so far.

Prime Time for Infection

The especially dry season late summer through fall is a prime period when people may become infected. However, the condition may not manifest until months after a person is infected.

“The best thing people can do is avoid inhaling excessive amounts of dust – especially in the South Valley,” advised Dr. McCarty.

“It’s important to get the flu shot,” added Dr. Paulina Mariki, a pediatric infectious disease specialist also at Children’s Hospital. “If a person has valley fever, the flu can make it much worse.”

People at risk for severe valley fever include:

- Those with weakened immune systems
- Persons of African or Filipino descent
- Women in the third trimester of pregnancy

About 60 percent of those infected never show symptoms. The others develop the following ailments that can last a month:

- Cough
- Fever
- Chest pain
- Headache
- Muscle aches
- Fatigue
- Rash

Diagnosis and Treatment

Valley fever can be difficult

to diagnose, especially since symptoms are similar to other more common illnesses. Early treatment is critical to preventing dangerous progression of the disease. Dr. McCarty recommends families and doctors suspect valley fever particularly if:

- The person has pneumonia
- The person has symptoms that can’t be explained or persist without improvement

When valley fever is suspected, a doctor can order an antibody blood test or culture. There is no vaccine to prevent the disease but efforts are ongoing to develop one. “Potential vaccines are out there,” said Dr. McCarty. “The substantial funding needed to move these forward or to do further study has made it difficult.”

Treatment for valley fever usually includes oral or injected antifungal medicine. Treatment can range from three to six months or years for more serious cases.

Understanding Valley Fever

Long known for its valley fever expertise, Children’s Hospital is involved in several projects to advance knowledge of the disease and boost public awareness.

In collaboration with the California Department of Public Health, Children’s began conducting a retrospective review of 100 valley fever inpatient cases at Children’s more than a year ago. The review studies the clinical epidemiology of the disease, including various manifestations, treatment regimens and outcomes, while noting any of the patients’ prior health issues,

ethnicity, hospital length of stay and more.

In addition, Children’s completed its own retrospective study of 33 valley fever inpatient cases at the Hospital. Results were published in the June 1 edition of the peer-reviewed “Clinical Infectious Diseases.” “Of these cases, we found most of the infections were in the lung,” said Dr. McCarty, noting that 91 percent of the participants resided in the southern San Joaquin Valley. “Valley fever affects younger children more severely than older children – they become more ill and are in the hospital longer. We found mediastinitis to be more common in children than adults.”

Children’s is also partnering with the University of California – Merced to evaluate the immune system response in children with valley fever and the psychosocial impact of the disease on the patient, family, community, etc.

Kaden underwent intense treatment at Children’s for six months, including two rounds in the pediatric intensive care unit when his condition escalated. Fortunately, he became well enough to go home. For the next 2 ½ years, Kaden continued to receive medication to treat the disease and regularly followed up with Dr. McCarty and other pediatric specialists at Children’s. Kaden completed treatment for valley fever in August.

“We know we could have lost Kaden,” said Kandis. “We’re so thankful he’s doing so well.”

“Recovery can be long,” emphasized Dr. McCarty. “Valley fever is a *very* stubborn disease.”

Monica Prinzing is senior writer in communications and marketing at Children's Hospital Central California, a nonprofit, pediatric regional medical center on a 50-acre campus near Fresno. The 348-bed facility has a medical staff of more than 550 physicians, making Children's Hospital Central California one of the 10 largest hospitals of its type in the nation and the second largest children's hospital in California. Consistently ranking at the top of its peer group for quality patient outcomes, patient satisfaction and nursing care excellence, Children's has received repeated designations for high-quality nursing practice from the Magnet Recognition Program®.

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