Erysipeloid

What is Erysipeloid?

Erysipeloid is an occupational infection resulting from introduction of Erysipelothrix rhusiopathiae (formerly E. insidiosa) into a traumatized patch of skin. Clinically, the disease is observed as erythematous edema, with well-defined and raised borders. Lesions are mostly localized to the back of the hand. Vesicular, bullous, and erosive lesions may also be present. The lesions are usually asymptomatic and occasionally associated with pain, fever, and mild pruritus. In addition to cutaneous infection, E. rhusiopathiae may be complicated by acute or subacute endocarditis. Endocarditis is rare and has a male predilection. It usually occurs in previously damaged valves, predominantly the aortic valve. Erysipeloid is a clinical diagnosis. Affected patients usually present with a history of occupational exposure to unprocessed fish or meat with characteristic cutaneous lesions. It typically gains entry through abrasions in the hand. Bacteremia and endocarditis are uncommon but serious complications. Erysipeloid is frequently misidentified due to the rarity of reported cases.

Where is Erysipeloid found?

The bacteria that cause erysipeloid are called *Erysipelothrix rhusiopathiae*. This type of bacteria may be found in fish, birds, mammals, and shellfish. Erysipeloid usually affects people who work with these animals (such as farmers, butchers, or veterinarians). Infection results when the bacteria enter the skin through small breaks.

How do animals get infected with Erysipeloid?

The organism is shed by diseased animals in feces, urine, saliva and nasal secretions, which can contaminate food, water, soil and bedding, leading to indirect transmission of the organism. Furthermore, an average of 20-40% of healthy swine, and in some herds up to 98%, harbor Erysipelothrix in the lymphoid tissue of the alimentary tract, particularly in the tonsils.

How do people get infected with Erysipeloid?

Erysipeloid results from an infection with Erysipelothrix rhusiopathiae after an area of skin containing an abrasion comes into contact with contaminated fish, poultry, or raw meat. The organism is known for its high environmental resistance. Various virulence factors have been implicated in the pathogenicity of erysipeloid. Following infection in the skin, the organism produces certain enzymes that help it dissect its way through the tissues. Significant among them
are hyaluronidase and neuraminidase. Neuraminidase has been shown to play vital role in the attachment of Erysipelothrix rhusiopathiae. This subsequently aids in the invasion of host cells. The role of hyaluronidase in the disease process is not well understood. The presence of a heat labile capsule has been reported as being important in virulence. At the same time, the patient's immune response is activated to fight against the organism. Failure of the immune surveillance leads to systemic dissemination of the bacteria to the heart, brain, kidney, vascular system, joints, central nervous system, and lungs. The heart is the most commonly affected systemic organ.

What are the signs and symptoms of Erysipeloid?

Symptoms may develop in 2 to 7 days after bacteria enter the skin. Usually, the fingers and hands are affected. But any exposed area of the body can get infected if there is a break in the skin. Symptoms may include:

- Bright red skin in the infected area
- Swelling of the area
- Throbbing pain with itching or burning sensation
- Fluid-filled blisters
- Low fever if the infection spreads
- Swollen lymph nodes (sometimes)

The infection may spread to other fingers. It usually doesn't spread past the wrist.

How do you prevent transmission of Erysipeloid?

- Wearing gloves
- Covering limbs with long sleeves/pants
- Utilizing de-hooking devices while handling marine life
- Washing hands and equipment after handling any fish, or after any exposure to open water