Sporothrix Schenckii

Sporothrix schenckii is a thermally dimorphic fungus, which grows as a mold in lower temperatures, but as a yeast at higher temperatures, and classically appears as a cigar-shaped yeast on microscopic exam. When infected, patients develop a cutaneous pustular rash, which can progress to an ascending lymphangitis. Immunocompromised patients can develop systemic disease. Sporotrichosis is classically associated with a rose thorn prick, hence the name “rose gardener’s disease,” and can be treated with potassium iodide or itraconazole.



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Characteristics

Fungi
Fun-guy
Sporothrix schenckii is a dimorphic fungus that is present in the soil, and is often found in living organisms, such as rose thorns, or in decomposing plant matter, such as peat moss.

Thermally Dimorphic
Thermal Dime-morpheus
Sporothrix schenckii can exist as one of two morphologies, and it is referred to as a thermally dimorphic fungi, as it grows as a mold at 25 degrees C, but as a yeast at 37 degrees C. In its moldy, or hyphal form, it grows as velvety, white colonies. Meanwhile, when in host tissues, or in labs at 37 degrees C, it grows in its yeast form, which resembles an elongated cigar.

Cigar-shaped Yeast Forms
Cigar with Unequal Budding Ashes
The classic description of this organism is that it appears as a cigar-shaped budding yeast on microscopy.

Rose Thorn Prick
Rose Thorn
These fungi can be found on living plant tissue, and often, this organism is traumatically introduced into the host tissue via a rose thorn prick, hence the pseudonym “rose gardener’s disease.” Once introduced into the skin, Sporothrix schenckii infections initially manifest as a local pustule or ulceration at the site of trauma.

Packaging Peat Moss
Packaged Peat Moss
Another reservoir for encountering Sporothrix schenckii is peat moss, which is the partially decomposed remains of formerly living moss. In addition to rose thorn pricks, those with open wounds that come in contact with peat moss can potentially develop sporotrichosis.

Signs & Symptoms

Local Pustule or Ulcer
Ulcer-volcano
When these fungi are introduced into the body via disruption of the skin, patients initially display small lesions. These manifest as local pustules, or ulcerations surrounded by erythema at the location of the thorn prick.

Nodules on Draining Lymphatics
Nodules with Lymph-limes
Once introduced into the body, infection spreads through the lymph along lymphatic vessels, resulting in lymphocutaneous sporotrichosis. This form of disease, called ascending lymphangitis, is characterized by nodules along draining lymphatics, and the appearance of lesions at sites distant to the initial

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infection.

Treatment

Potassium Iodide

Bananas and Iodine-bottle

A widely available, low-cost option for treating sporotrichosis is oral potassium iodide. This treatment option, however, can lead to thyroid imbalance or gastrointestinal symptoms, and has been a second-line to antifungal drug therapy.

Itraconazole

Eye-in-the-A-hole

Antifungal therapy with itraconazole is the recommended first-line treatment for cutaneous sporotrichosis. This is an azole drug that is often used, but patients can also be given other antifungals, such as terbinafine or fluconazole. Therapy is typically given for three to six months, and if disseminated disease occurs, amphotericin B should be used.

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