CANDIDIASIS

PRESENTED BY
SVETLANA STEFANOVICH
WHAT IS CANDIDIASIS?

Candida Overgrowth - A naturally occurring yeast or fungus that lives in the body.

Most common areas to show signs of Candidiasis: Mouth, genitalia, localized areas of epidermis

The genus Candida includes about 150 different species
HISTORY OF CANDIDIASIS

• The earliest reports of thrush predated the concept of a microbial pathogen. In “Of the Epidemics,” Hippocrates described oral candidiasis (around 400 B.C.) as “mouths affected with aphthous ulcerations”.

• In 1665, Pepys Diary reported “a patient hath a fever, a thrush and a hiccup” perpetuating the idea that oral thrush originates from the host.

Since 400 B.C., various clinicians and mycologists have been researching the study of what is now called Candida, but it wasn’t until 1923 that this fungal growth was finally classified as Candida.

• The name Candida was proposed and described by botanist Christine Marie Berkhout in her doctoral thesis at the University of Utrecht in 1923. It is from the Latin word toga candida, referring to the white toga (robe) worn by candidates for the Senate of the ancient Roman republic.
CANDIDIASIS CASE

A healthy 35 year old male goes in for his routine teeth cleaning at the dental office. No medications are being taken at this time, although he went through a dose of antibiotics recently for a respiratory infection.

During his oral examination, the doctor notes a white plaque on the surface of the patient’s tongue. The plaque measured approximately 1.5 cm in diameter, and could not be removed by wiping or scraping.

The patient reports this patch has appeared approximately 2 weeks ago, and has stayed the same size since then. There is no burning, itching, or pain associated with this lesion.
The dentist diagnosed the lesion as **Hyperplastic Candidiasis** – which means a white plaque that cannot be removed by wiping or scraping, that carries no symptoms.

The dentist recommended using antifungal medications, and to follow up with careful periodic re-evaluations.

Because the dental office was using proper personal protection equipment, no one from the staff was infected.

- If no improvement is noted after 10 to 14 days of treatment, the patient must be re-evaluated. Patients without improving factors should be referred to a physician for further evaluation.
CANDIDIASIS SYMPTOMS

- Candidiasis may be the first indication of HIV disease
- Candidiasis is the most common fungal infection of the mouth
- Common symptoms of Candidiasis include, but are not limited to:
  - White patches in the mouth
  - Cracks at the corners of the mouth
  - Rashes found in the groin, between fingers and toes, or under breasts
  - Vaginal irritation accompanied with a white discharge
DESCRIPTION OF CANDIDIASIS

• A fungal growth that grows rapidly in culture and can reach maturity in as little as 3 days

• Appear as round, oval cells in colonies, but some may develop small striations or outgrowths called “feet”. Range in size from 4-8 micrometers, and are encapsulated and diploid

• Gram staining and methylene blue work best for staining fungal cells of Candidiasis

• Can range from individual cells to enormous chains of cells that can stretch for many feet.

• Virulence factors are
  • Toxins
  • Enzymes
  • Adhesin
  • Complement receptor
DESCRIPTION OF CANDIDIASIS

Pathophysiology and Incubation time

- Candidiasis occurs when Candida, that is already present in our bodies in normal amounts, is allowed to overgrow other organisms due to a microbial imbalance.

- Candidiasis encounter a particular host tissue, and colonization takes place at the local site, or deeper into the host tissue.

- Specific and non-specific adhesive properties are required to allow binding at the sites of colonization.

- The incubation period for Candidiasis in most cases, is usually from 2-5 days.
MODE OF TRANSMISSION:

- Most infections result from the patient’s own flora, rather than from cross infection.

- Although rare, another transmission has been reported to occur from inanimate surface, for example from hands of health care workers or between patients.
There are 2 ways to perform diagnosis of Candida:

- **Microscopic Examination:** a scraping or swab of the affected area is placed on a microscope slide. A single drop of 10% potassium hydroxide solution is then added to the specimen. The solution dissolves the skin cells, but leaves the *Candida* cells intact, permitting visualization of and budding yeast cells typical of many *Candida* species.

- **Culturing:** a sterile swab is rubbed on the infected skin surface. The swab is then streaked on a culture medium. The culture is incubated at 37 °C for several days, to allow development of yeast or bacterial colonies. The characteristics of the colonies may allow initial diagnosis of the organism causing disease symptoms.
PREVENTION AND TREATMENT

**Prevention of Candidiasis:**
- A diet that is low in carbs, and sugar
- Maintaining good oral hygiene
- Limiting the use of antibiotics
- Adding probiotics to your diet

**Treatment of Candidiasis:**
- Antifungal drugs – topical, oral or intravenous
- Homeopathy
- Herbs – garlic or tea tree oil
CANDIDIASIS STATISTICS

- 4th leading cause of bloodstream infections in the US

- Candida species are the most common cause of fungal infection in immunocompromised people.

- Candida species may be detected in 40-65% of normal fecal flora.

- Since January 2011, 263 patients with Candida bloodstream infections have been reported in the Portland metropolitan area.
IMPORTANCE OF CANDIDIASIS

Although Candidiasis in many cases cannot be prevented, the study and research of this disease is important to educate people on prevention and treatment.
REFERENCES


REFERENCES


