Republic of Iraq Ministry of Higher Education
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Paracoccidiodomycosis

BY

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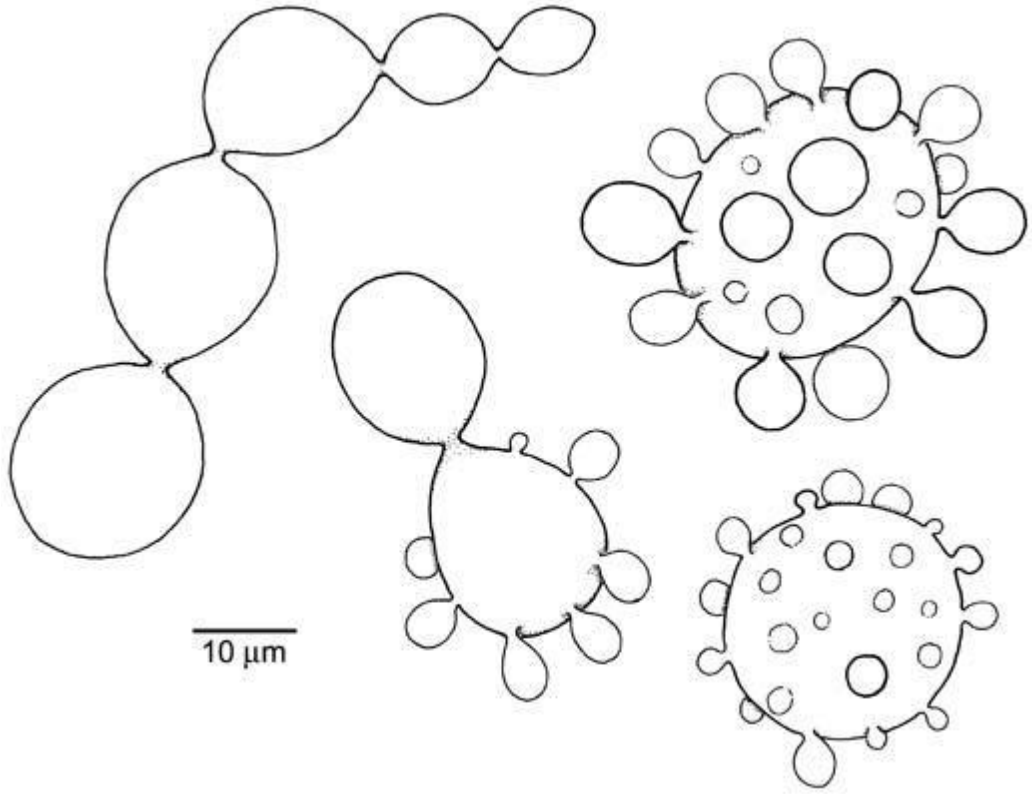
Paracoccidiodomycosis:

Paracoccidioidomycosis: is a systemic mycosis caused by the dimorphic fungus *Paracoccidioides brasiliensis*. that produces a primary pulmonary infection often apperent and then disseminate to form ulcerative granulomata of buccal ,nasal ,gastrointestinal mucosa .

The disease in development and its inception is similar to blastomycosis and coccidiodomycosis .

The etiological agent: *paracoccidioides brasillensis* is restricted to area of

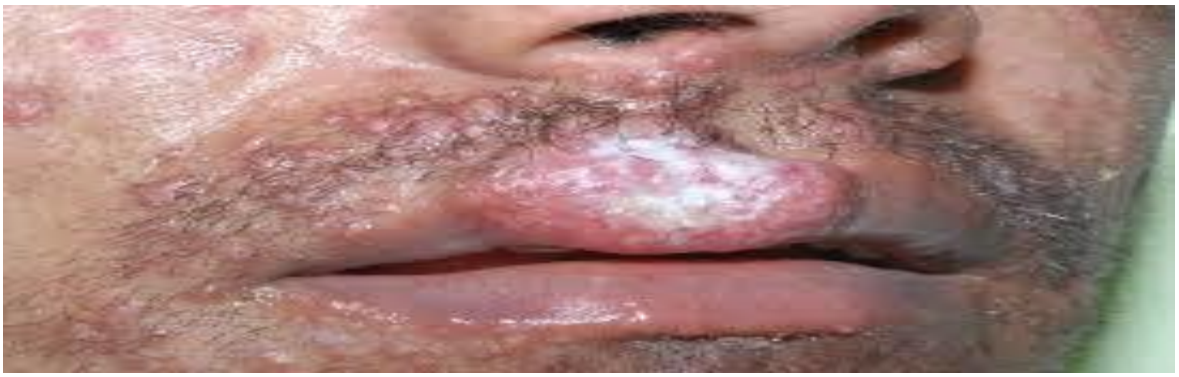
south and central America . *P. brasiliensis* is a dimorphic fungus that exists as a mold in soil and as a yeast in tissue.



Multiple, narrow base, budding yeast cells of *p.brasiliensis*

Clinical manifestation :

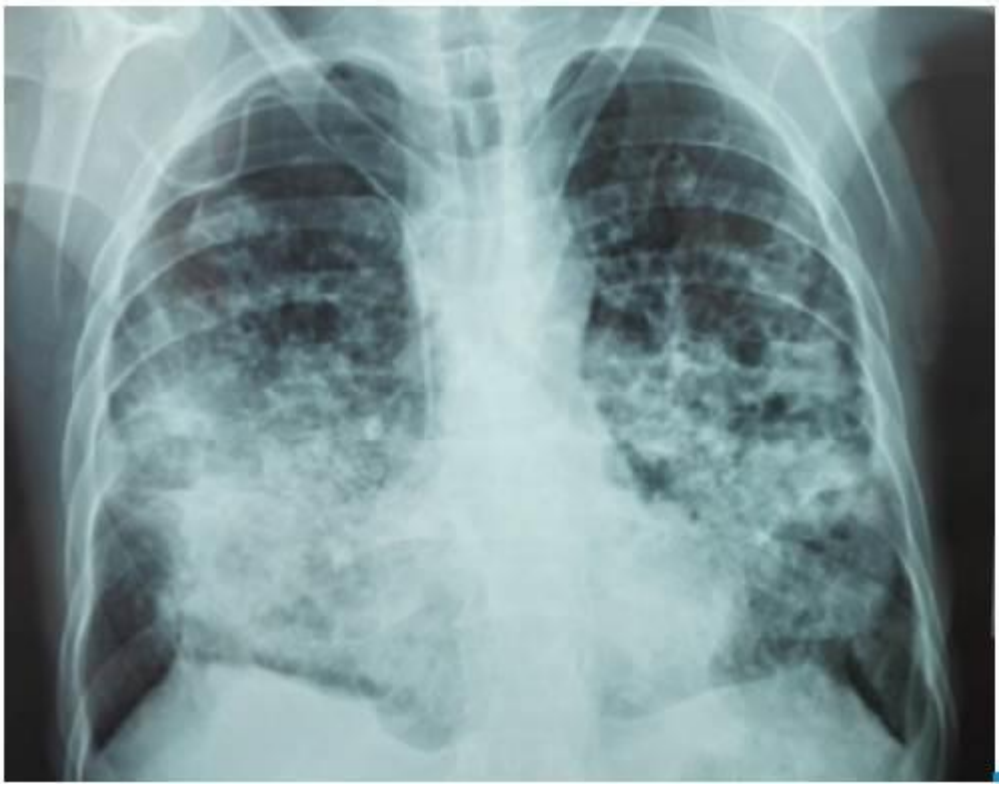
1-Mucocutaneous paracoccidiodomycosis :the nose and mouth are most usual mucosal sites of infections .painful ulcerated lesions develop on the lips ,tongue ,gums and can progress over weeks or months .cutaneous lesions often appear on face around the mouth and nose ,although patient with severe infection can have widespread lesions .



Mucocutaneous paracoccidiodomycosis showing extensive destruction of facial features

2-Pulmonary paracoccidiodomycosis : most cases have an indolent onset and patients present with chornic symptoms such as cough ,fever ,night sweats ,malaise and weight loss . chest x-rays are characteristic but not diagnosic .

The infection must be distinguished from histoplasosis and tuberculosis .



Pulmonary paracoccidiodomycosis

3-Lymphonodular paracoccidiodomycosis :lymphadenitis is common in younger patients .may progress to form abscesses with draining sinuses .

4-Disseminated paracoccidiodomycosis : haematogenous spread of *paracoccidioides brasiliensis can* result in widespread dissemination disease including lesions of small or large intestine ,hepatic lesions ,adrenal gland destruction ,osteomyelitis ,arthritis ,meningoencephalitis or focal cerebral lesions

Laboratory diagnosis:

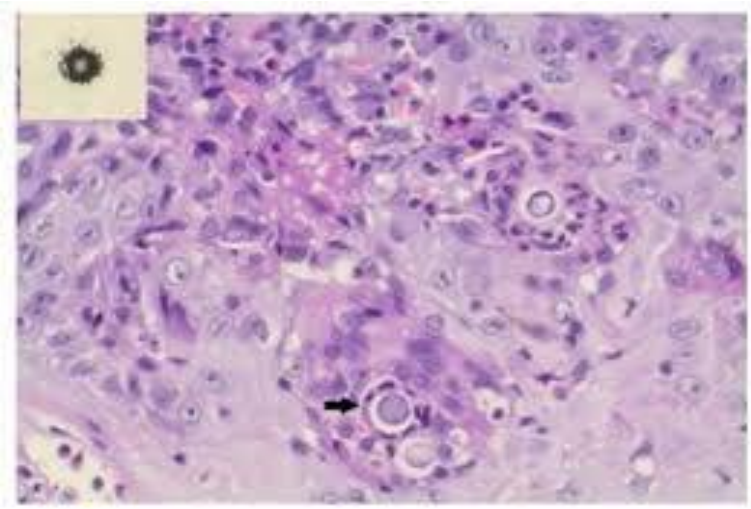
1-clincal material :Skin scrapings, sputum and bronchial washings,cerebrospinal fluid, pleural fluid and blood ,bone marrow, and tissue biopsies from various visceral organs.

2-Direct Microscopy: (a)**Skin scrapings** should be examined using 10% KOH and parker ink or calcofluor white mounts.

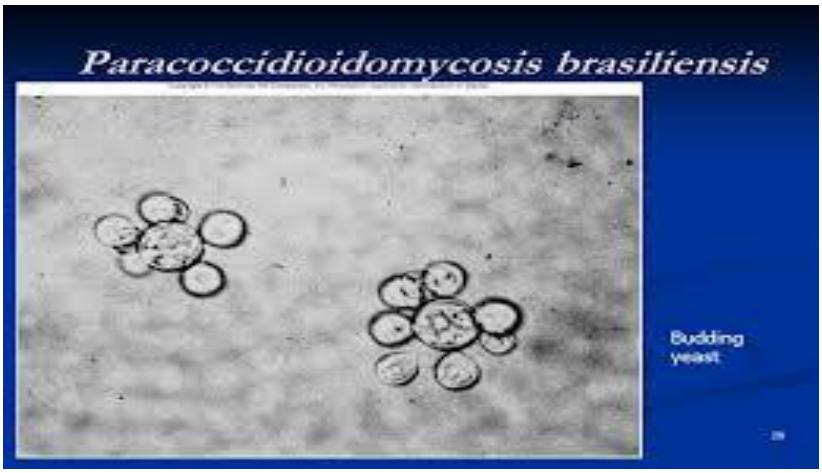
(b)**Exuddates and body fluids** should be centrifuged and the sediment examined using either 10% KOH and parker ink or calcofluor white mounts.

(c) **Tissue sections** should be stained using PAS digest, Grocott's methenamine silver (SMG)or Gram stain.

Histopathology is especially useful and is one of most important ways of altering the laboratory that they may be dealing with a potential pathogen .



GMS stained lung section



Budding yeast cells(steering wheels) of *P.brasiliensis*

3-culture: clinical specimens should be inoculated on to primary isolation media like sabouraud's dextrose agar and brain heart infusion agar supplement with 5%sheep blood .

Double agar gel immunodiffusion is useful for the diagnosis when the fungus cannot be detected through mycological tests

Treatment :

The most used sulfa drugs in this infection are sulfa dimethoxime sulfadiazine and co-trimoxazole .this treatment is generally safe but several adverse effects can appear ,it must be continued for up to 3 years to eradicate the fungus .

Antifungal drugs; like B amphotericin or itraconazole and ketoconazole are more effective in clearing the infection but limited by their cost when compare with sulfonamides . during therapy fibrosis can appear and surgery may be needed to correct this

Abstract:

- **Paracoccidioidomycosis :**is a systemic mycosis caused by the dimorphic fungus *Paracoccidioides brasiliensis.* The disease is restricted to Latin America. It is the principal systemic mycosis in Brazil .

- The primary infection occurs during childhood the most common chronic form of paracoccidioidomycosis in adults is the multifocal form, in which there is dissemination to the lungs, lymph nodes, skin and mucosae.

- **Causative agents**: *Paracoccidioides brasiliensis*

- **Clinical manifestation :**

  1-Mucocutaneous paracoccidiodomycosis : painful ulcerated lesions develop on the lips ,tongue ,gums and can progress over weeks or months .cutaneous lesions often appear on face around the mouth and nose .

  2-Pulmonary paracoccidiodomycosis : most cases have an indolent onset and patients present with chornic symptoms such as cough ,fever ,night sweats ,malaise and weight loss.

  3-Lymphonodular paracoccidiodomycosis :lymphadenitis is common in younger patients .may progress to form abscesses with draining sinuses .

  4-Disseminated paracoccidiodomycosis : haematogenous spread of *paracoccidioides brasiliensis can* result in widespread dissemination disease including lesions of small or large intestine ,hepatic lesions.

- **The diagnosis -clincal material** :Skin scrapings, sputum and bronchial washings,cerebrospinal fluid.
  2-Direct Microscopy: (a)**Skin scrapings** should be examined using 10% KOH and parker ink or calcofluor white mounts.
  (b)**Exuddates and body fluids** should be centrifuged and the sediment examined using either 10% KOH and parker ink or calcofluor white mounts.

(c) **Tissue sections** should be stained using PAS digest, Grocott's methenamine silver (SMG)or Gram stain.

Histopathology is especially useful and is one of most important ways of altering the laboratory that they may be dealing with a potential pathogen testing of tissue samples reveals the thick birefringent cell wall of the fungus and the typical pattern of multiple budding around the mother cell. Double agar gel immunodiffusion is useful for the diagnosis when the fungus cannot be detected through mycological tests.

- **paracoccidioidomycosis is most often treated** with B amphotericin or itraconazole and ketoconazole are more effective in clearing the infection but limited by their cost when compare with sulfonamides . during therapy fibrosis can appear and surgery may be needed to correct this.

References:

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