RHINOSPORIDIOSIS

Alaa Alzahrani
Intern
Rhinosporidiosis

- Chronic granulomatous infection by Rhinosporidium seeberi, mainly affecting mucous membranes of nose & nasopharynx, characterized by formation of vascular friable, polypoidal lesions.
Endemic

- 95% were from India and Srilanka.
- It’s more common in children and males aged 15-40 years.
- Male-to-female ratio of 4:1.
cause

- transmitted by exposure to the pathogen when taking a bath in stagnant water pools (common ponds.)

- But it's not explain ??

- 1- chemical and physical characteristics of the water .
- 2- Host factors responsible,
- 3- In addition other aquatic organisms .
- 4- HLA typing also must be studied.
- 5- The possibility of non-specific immune reactivity especially macrophages .
Rhinosporidium seeberi

The pathogen was first identified in 1892, and was comprehensively described in 1900 by Seeber.

- analysis of the organism's ribosomal DNA, they reclassified the organism in a new clade which was named the **Mesomycetozoea** or (DRIP clade).
1903 - O'Kineley described its histology

- Sporangia of Rhinosporidium seeberi within nasal polyp (periodic acid-Schiff [PAS] stain).
Sporangia of Rhinosporidium seeberi in polyp (Gomori methenamine silver [GMS]) stain.
1923 - Ashworth described its life cycle
Life cycle (recent)
1953 - Demellow described the mode of its transmission

- Theories of mode of spread:
  - Demellow's theory of direct transmission
  - Autoinoculation theory of Karunarathnae (responsible for satellite lesions)
  - Haematogenous spread - to distant sites
  - Lymphatic spread - causing lymphadenitis (rarity)
Clinical classification of Rhinosporidiosis

- 1. Nasal
- 2. Nasopharyngeal
- 3. Mixed
- 4. Bizzarre (ocular and genital)
- 5. Malignant rhinosporidiosis (cutaneous rhinosporidiosis)
Common sites affected:
- Nose - 78%
- Nasopharynx - 68%
- Tonsil - 3%
- Eye - 1%
- Skin - very rare.
History

- **Nasal**
  - epistaxis (most common).
  - unilateral nasal obstruction
  - pruritus, sneezing and rhinorrhea.
  - postnasal discharge (drip).
  - foreign body sensation.

- **Eye**
  - initially asymptomatic.
  - Increased tearing
  - Photophobia, redness, and secondary infection

- **Skin**
  - lesions begin as papillomas that gradually become verrucous.
Physical

- Soft polypoidal, reddish and granular masses,
- surface is studded with gray or yellow dots (sporangia). ((often described as strawberry-like in appearance))
- The whole mass is covered by mucoid secretion.
- They are highly vascular and bleed easily.
- restricted to the nasal mucous membrane and does not cross the mucocutaneous barrier.
Work up

- **Direct observation**
  - on microscopic examination.
    1. smears of macerated tissue
    2. histology of prepared biopsy sample.
  - The organism can be observed with typical fungal stains [GMS], and [PAS].
Serologic testing
(immunoblot [ELISA]) identification of antirhinosporidial antibody)

Imaging Studies
(CT) imaging to delineate the site and extent of disease.
Coronal CT nose and sinuses showing lacrimal sac and nasolacrimal duct rhinosporidiosis

Rhinosporidial mass occupying the right inferior meatus
CT Nose and PNS showing septal perforation caused by rhinosporidiosis
Treatment
several anti-bacterial and anti-fungal drugs have been tested clinically, but it was unsuccessfull

The only drug which was found to have some anti-rhinosporidial effect is dapsone [1],[2]

which appears to arrest the maturation of the sporangia and to promote fibrosis in the stroma, when used as an adjunct to surgery.

In this clinical trial with dapsone on 32 patients (71.4%) did not have recurrence in a three year period and none of them needed surgery in that period.

Thirty-two patients were used as controls, and 93% of them needed surgery for recurrent rhinosporidiosis in the same three year period.

Dapsone (diaminodiphenylsulfone) is a relatively safe drug to use, and no major side effects were noticed in this trial.
Medical therapy of rhinosporidiosis with dapsone. Job A¹, Venkateswaran S, Mathan M, Krishnaswami H, Raman R. Department of Otorhinolaryngology, Christian Medical College and Hospital, Vellore, Tamil Nadu, India. Laryngol Otol. 1993 Sep.

- Clinical, histopathological and ultrastructural studies in three cases of rhinosporidiosis show..
- complete remission of infection within one year of therapy with dapsone.
- Light and electron microscope studies confirmed arrest of the maturation of the spores and accentuated granulomatous response with fibrosis following dapsone therapy.
Surgery

- The treatment of choice.
- Wide excision with electrocoagulation of the lesional base has been promoted to decrease recurrences.
- Recurrence has been reported with simple excision due to spillage of endospores on the adjacent mucosa.
Complications

- Complications of the disease include extremely rare, life-threatening dissemination.
- Local secondary bacterial infection, and recurrence.

Prognosis

- Prognosis is excellent, except with dissemination.
Referance

- Rhinosporidiosis, Dr. T. Balasubramanian M.S. D.L.O. drtbalu, otolaryngologyonline, 2006
- Duane R Hospenthal, MD, PhD, FACP, FIDSA, FASTMH Adjunct Professor of Medicine, Department of Medicine, University of Texas Health Science Center at San Antonio, Rhinosporidiosis, medscape, Oct 07, 2015
- Recent advances in rhinosporidiosis and *rhinosporidium seeberi*, Department of Microbiology, Faculty of Medicine, University of Peradeniya, Peradeniya, Sri Lanka, 2016 Indian Journal of Medical Microbiology.
- Nair KK. Clinical trial of diaminodiphenylsulphone (DDS) in nasal and nasopharyngeal rhinosporidiosis *Laryngoscope* 1979; 89:291-295.