Lacaziosis

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Lacaziosis Terms
- 1938-Originally called Lobo disease
- 1958-The name lobomycosis was applied
- 2005-The name lacaziosis was made the official term for condition
- Jorge Lobo first described this as keloidal blastomycosis in a patient from the Amazon Valley of Brazil

Lacaziosis Taxonomy
- Kingdom: Fungi
- Phylum: Zygomycota
- Subphylum: Zygomycotina
- Order: Entomophthorales
- Family: Uncertain
- Genus: Lacazia
- Species: Loboa loboii, Lacazia loboii (most recent name)

Lacaziosis Distribution
- Self-limited, chronic infection of the skin endemic in rural regions of South America and Central America
- Since the original report, has also been reported by North Americans traveling to endemic areas
  - Only 1 case of lobomycosis has been reported in the United States
  - Also reported in 2 species of Atlantic dolphins, and 1 marine park dolphin trainer

Lacaziosis Life Cycle
- A yeast-like fungus, with aquatic environment needed for life cycle
- Slow growth, only with long incubation
- Unfortunately, cannot be grown in culture, therefore, not much is known of the environment needed for growth

How people are affected:
- Traumatic implantation most often the case
- Arthropod sting
- Snake bite
- Sting-ray sting
- Wound acquired while cutting vegetation
Who is affected:
- Wide age range between 12 and 70 years
- No ethnic predominance and all races seem to be equally susceptible
- Occupation of those affected tend to be persons who carry out agricultural activities, as well those dedicated to fishing, hunting and mining
- 90% of cases are men

Lacaziosis Symptoms
- Cutaneous & subcutaneous
- Begin as small, hard nodules
- Keloids, nodular lesions, crusty plaques, and tumors
- Developing lesions are smooth, painless, and well defined, move around a bit, because on top of tissue
- Older lesions can become ulcerative
- Lesions are usually found on the arms, legs, face or ears
- May be transferred to other areas of the skin by further trauma or autoinoculation

Symptoms (cont.)
- Lesions are composed of
  - granulomatous inflammatory tissue containing numerous globose or subglobose or lemon-shaped, yeast-like fungal cells singly or in simple and branched chains.

Diagnosis of Lacoziosis
- A tissue sample is obtained by curettage, or surgical biopsy
- Then this tissue can either be macerated and mounted in 10% KOH and Parker ink or calcofluor white mounts
- Tissue sections can be stained using Grocott’s methenamine silver or Gram stains
- If present, dark, spheres of yeast-like organisms will show, known as Loboa loboii, often in chains
- Presently no serological tests available

Treatment
- Wide surgical excision of affected area
- Relapse often occurs, and so the excision must be wide
- Often, new lesions may occur from surgery

Prevention
- Relapse is extremely common
- Upon removal of lesions, Clofazimine 100-200 mg/day can be used to prevent, though its results vary
- Appears antifungals are not effective
- Though the course of infection is slow and chronic the prognosis is poor
Case Report 1

Part 1:
- 62 year old male
- Injured his ear when he was ~52 with a fishhook
- A hard nodule developed, followed by satellite lesions.
- Initially diagnosed as lepromatous leprosy.
- Microscopic findings confirmed lobomycosis
- The patient refused otoplasty and was treated with itraconazole; some nodules partially regressed.

Case Report 1

Part 2:
- Bottlenose dolphin: male.
- Symptoms: missing teeth, several pink, whit and gray lesions

Although the human and dolphin cases weren't probably related, they suggest the role of the marine environment as a likely natural habitat for L. loboi and as a reservoir for infection.

Case Report 2

A 42-year-old white male patient, a resident of Georgia, presented to a general surgeon.

The patient requested removal of a skin lesion on his right chest wall for cosmetic reasons.

Seven years earlier, the lesion had started as a small pustule with surrounding erythema.

At that time, the patient pierced the pustule with a needle and then expressed a tiny amount of bloody fluid.

Afterwards, the lesion developed into a small nodule that gradually increased in size w/ some mild itching only.

Case study 2 Cont.:-

Two and one-half years prior to the appearance of the pustule, the patient had traveled to Venezuela.

He walked under the Angel falls in Canaima at least 3 times 3000ft high water pressure 30 min each exposure. Swam in the bottom of the falls.

Wore diving suit but was still soaked in water.

3.5- by 2-cm reddish purple nodule with a smooth surface and distinct margins located on the right chest wall in the midaxillary line at the level of the eighth rib. It had the appearance of a keloid. After an uncomplicated excision, the excised tissue was sent for pathologic evaluation.

Case study 2 Cont.:-

The excised tissue, fixed in formalin, was a skin ellipse which measured 4.9 by 2.6 by 0.6 cm, with the lesion measuring 3.5 by 2.1 cm.

No fresh tissue was saved for bacterial or fungal cultures.

Case Study 2 Cont.:-

The globose and subglobose budding cells of L. loboi resemble budding cells of P. brasiliensis in tissue.

However, the central mother cells of P. brasiliensis become large and thick-walled compared to the daughter cells, which remain smaller.

In contrast, yeast cells of L. loboi remain consistent in diameter, giving rise to branching chains of blastoconidia.

The cell wall of L. loboi contains constitutive melanin unlike P. brasiliensis, which can be detected by the use of the Fontana-Masson histologic stain.
References

- www.drfungus.org