

'Fish Tank Granuloma' Can Mimic Staph Infection

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO — A waterborne mycobacterium that infects humans through breaks in the skin causes lesions that easily are mistaken for staphylococcal infection, Dr. Peggy Weintrub said at the annual meeting of the American Academy of Pediatrics.

Mycobacterium marinum infection causes what's commonly known as "fish tank

granuloma," said Dr. Weintrub, chief of pediatric infectious diseases at the University of California, San Francisco. Lesions typically appear 1-4 weeks after exposure and start out as little papules and nodules that can be misdiagnosed as a staph infection. Later, however, they become verrucous, plaquelike lesions that start spreading up the skin along lymphatic tracts.

She described a case in a 3-year-old boy who presented with mild eczema and some other longstanding crusting lesions

on his hand and arm that were spreading up the arm lymphocutaneously. The lesions had not responded to previous treatment with cephalexin. A previous culture from the lesions did grow some staphylococcal organisms, but two additional courses of antibiotics did not affect the lesions.

The boy was afebrile and systemically well, and had an infant sibling at home with no lesions.

The patient's history helped point clinicians toward *M. marinum*. The boy liked

to be helpful, assisting his mother with the baby and helping his father with anything and everything, including gardening and cleaning the family's fish tank.

"I was imagining trying to get a 3-year-old to clean a fish tank," said Dr. Weintrub. "Apparently, this was his favorite job, so he had done it multiple times in the weeks before he broke out in these lesions," giving *M. marinum* an inoculation pathway through the boy's eczematous lesions.

M. marinum infects fish and amphibians. "You can sometimes get a history of a fish tank, but you also can get this infection from swimming in pools and in natural bodies of water—any kind of significant water exposure," she said.

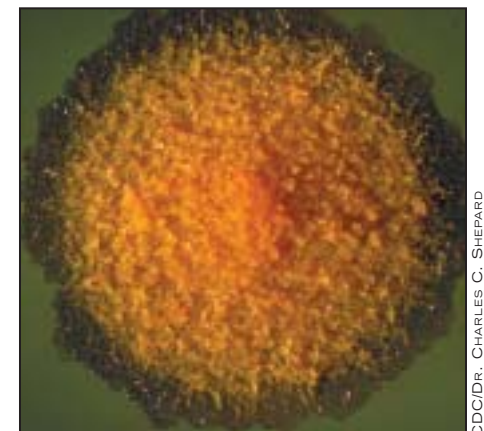
In rare cases, immunocompetent patients can develop disseminated *M. marinum* infection, affecting bones or joint tendon sheaths. "Particularly on the hand, it's a very worrisome diagnosis," Dr. Weintrub said.

If a lesion is oozing, the secretions can be cultured for *M. marinum*. A skin biopsy from the boy grew the organism. Histopathology will show granulomas.

Patient history also can help sort through the differential diagnoses. A history of gardening raises the possibility of *Sporothrix schenckii* infection, which produces lesions that look very similar to *M. marinum* lesions, with a lymphocutaneous spread. *S. schenckii* resides in decaying vegetation, moss, soil, wood, and hay. It is more a disease of adults (typically farmers, gardeners, and forestry workers) than of children, with a history of skin trauma in 10%-60% of cases. A history of travel may suggest *Leishmania*, a parasite.

Clinicians also should consider *Staphylococcus aureus* infection, which most commonly causes pustular, draining lesions but rarely can cause granulomatous disease that looks like *M. marinum*, Dr. Weintrub said.

Usually two or three drugs are used to treat *M. marinum* infection, although no controlled studies back these strategies. "There aren't really good guidelines" on which drugs to use or for how long, she noted. Regimens may include clarithromycin or azithromycin, ethambutol, rifampin, and/or minocycline or doxycycline (for older patients). In general, 1-2 months of treatment may suffice, but 3 months of therapy was needed for the boy's lesions to clear completely. Localized infection is more likely to clear up than is deep infection. In rare cases, surgery may be needed to remove infected tissue. ■



This *Mycobacterium marinum* culture shows a rough colony of granular growth.

CDC/DR. CHARLES C. SHEPARD

Skin & Allergy News®



THE ERA OF RESISTANCE: ASSESSING ANTIMICROBIAL COMBINATION THERAPY IN ACNE

Register now for this archived webcast at
www.combinationtherapyinacne.com

FACULTY



Emil A. Tanghetti, MD
Clinical Professor of Dermatology
University of California, Davis
Center for Dermatology and Laser Surgery
Sacramento

Question & Answer Session
also featuring:



James Q. Del Rosso, DO
Clinical Associate Professor, Dermatology
University of Nevada School of Medicine
Touro University Nevada College
of Osteopathic Medicine, Henderson
Dermatology Residency Director
Valley Hospital Medical Center
Las Vegas



Julie C. Harper, MD
Clinical Associate Professor of Dermatology
University of Alabama - Birmingham

This webcast was presented
live on June 19 & 21, 2007, by
Dr Tanghetti; on June 26, 2007,
by Dr James Del Rosso, and on
July 11, 2007, by Dr Julie Harper.

Faculty disclosures available on-line.

PROGRAM GOALS

For patients with moderate to severe and persistent acne, oral and topical antibiotics have been the mainstay of therapy. Antibiotics work to reduce the *Propionibacterium acnes* population, which decreases inflammation. *P. acnes* were initially highly susceptible to a broad range of antibiotics, but can become resistant to antibiotics. Acne patients with resistant strains of *P. acnes* have higher bacterial counts and a poorer treatment response than those with sensitive strains. The most serious issue for dermatology today is methicillin-resistant *Staphylococcus aureus* (MRSA). *S. aureus* is the most common known cause of skin and soft tissue infections. Resistance can be potentially reversed if selective pressure exerted by antibiotics is removed.

To prevent bacterial resistance in acne therapy, health care providers should minimize long-term antibiotic use, avoid oral or topical antibiotic monotherapy, and use benzoyl peroxide (BPO) if long-term topical therapy is required. Current guidelines for acne management recommend the use of combination regimens in order to address multiple aspects of acne pathogenesis. It is generally recommended that a retinoid be used early in the treatment regimen. Topical antibiotics should be used in conjunction with benzoyl peroxide, as studies have shown the combination to be superior to either agent alone.

This webcast discusses optimizing combination therapy to address the multiple aspects of acne pathogenesis. Findings are presented from a recent 12-week, multicenter, community-based study of moderate to severe facial acne patients. Results from this study will be important to guide the clinician in appropriately prescribing a topical clindamycin/benzoyl peroxide combination product, raise awareness of its inflammatory and comedonal lesion reduction as monotherapy and in combination with a topical retinoid to produce maximum efficacy with a minimum of cutaneous side effects.

INTENDED AUDIENCE

This activity is intended for health care providers who treat patients with acne.

EDUCATIONAL OBJECTIVES

Upon completion of this activity, participants will be able to:

- Explain current guidelines in acne management.
- Learn how to reduce the risk of antibiotic resistance in treatment of acne while continuing to provide adequate acne management.
- Discuss the findings of a large community-base study that compares the efficacy and safety of combination acne therapies and understand how it may impact patient care.

ACCREDITATION STATEMENT

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the Elsevier Office of Continuing Medical Education (EOCME) and SKIN & ALLERGY NEWS. The EOCME is accredited by the ACCME to provide continuing medical education (CME) for physicians.

CME CREDIT STATEMENT

The EOCME designates this educational activity for a maximum of 1 AMA PRA Category 1 Credit™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

FINANCIAL SUPPORT

This CME activity is supported by an unrestricted educational grant from

