

## Isolation of *Monosporium Apiospermum* from Cerebrospinal Fluid

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**M**ONOSPORIUM apiospermum, the asexual or imperfect form of *Allesheria boydii* is the most common etiological agent of mycetoma or madura foot in the United States.<sup>1</sup> The organism appears to be incapable of spreading beyond its initial site of infection in the cutaneous tissues, however, it has been identified in central nervous system disease in a limited number of patients.<sup>2,3</sup>

*Monosporium apiospermum* was isolated and identified in three separate specimens of cerebral spinal fluid (CSF). This afforded the authors an opportunity to study the organisms's peculiarities and to search for a possible pathogenesis of its central nervous system inoculation.

### MATERIALS AND METHODS

Samples of CSF from a 25 year old black man were submitted to the mycology laboratory on three separate occasions for culture. Each sample was handled identically. They were inoculated on Sabouraud's dextrose agar and incubated at 25°C and 37°C. Blood agar plates were also inoculated, but incubated at 37°C only. After 48 hours, tiny white colonies appeared on both media. These media were incubated an additional 48 hours, after which, tease mounts were prepared.

### IDENTIFICATION

*Colonial Morphology.* Small white fluffy surfaced colonies developed with an abun-

dance of aerial mycelia which turned brownish-gray on ageing. A grayish-black pigment developed on reverse.

*Microscopic Morphology.* The tease mounts revealed many broad septate mycelia and single unicellular oval conidia attached to short conidiosohores. Cleistothecia (perithecia) were not identified, thus confirming the asexual stage of the organism.

The organism was compared with a known control culture\* which confirmed its identity.

### DISCUSSION

*M. apiospermum* is an inhabitant of soil and is found most often in the central and northern parts of the United States.<sup>4</sup> It is apparent that cases of human infection result from inoculation of the cutaneous tissues, particularly the lower extremities.

Clinically, the organism most often produces a mycetoma of the lower extremities which is manifested by abscesses and sinuses. On careful search, granules consisting of colonies of organisms with matted hyphae may be found. Although uncommon, cases of suppurative pneumonia,<sup>5</sup> otomycosis,<sup>6</sup> meningitis,<sup>2,3</sup> thyroiditis<sup>7</sup> and prostatitis,<sup>8</sup> have been caused by this organism.

Monosporosis has been experimentally produced in animals, particularly in joints

\*Stock culture from Center for Disease control, Atlanta Georgia.

and bones.<sup>9</sup> It has not been proven that the organism can be transmitted from animal to man or man to man.

The pathogenesis of central nervous system monosporosis is obscure. Lumbar puncture, trauma to the CNS or surgical intervention have been suggested as modes of inoculation of the organism in the CNS.<sup>2,3</sup> The patient, in this case, had a ventriculo-peritoneal shunt inserted because of internal hydrocephalus. It is believed that the organism was not the cause of the hydrocephalus since it was not isolated prior to surgical intervention. Since CNS monosporosis is rare, the question of low virulence of *M. apiospermum* and CNS immunity must be raised. To date neither of these theories has been proven.

Serologic tests and skin tests have not been developed, thus limiting early diagnosis. The disease is progressive and is rarely self-limited. There is no specific therapy. Amphotericin B has been reported as being ineffective. Isolates of *M. apiospermum* from the CSF should not be considered contaminants until additional CSF samples are recultured and studied.

#### SUMMARY

*M. apiospermum* was isolated from three separate samples of CSF. The technics for isolation and morphological identification are presented. A brief review of the English

literature is given.

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(Cowan, from page 458)

medical care is the freedom to use our training in other professional settings. There was a time—not long ago—when the ideal for a physician was the solo, private practice of medicine. Happily that is no longer the case. The stigma has been removed from group practice and other organized forms of medical care delivery. It is become easier for those of us who choose to use our training to pursue careers in government and industry to do so. It is important to continue this encouragement of the “dry finger” dentist and his opposite number in each of the

health professions. We can no longer afford to isolate ourselves in a technical corner of society and expect to have our voices heard.

Things have changed radically between my graduation and yours. Where I was certain, you are asking questions. I encourage you in that endeavor and I hope that you can keep an eye on the three E's: Expectations of Medical Care, The Economics of Medical Care and An Ecumenical View of Professional Roles. I am thirty odd years ahead of you but I will try to catch up.