

Morgellons Fiber Study Summary

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Following are microscopic observations of specimens of unknown fibers taken from four individuals suffering from a condition known as Morgellons disease.

The participants are: (full names indicate participants who have granted full permission to publish)

- Julie Karnes - who lives in San Francisco, California
- Cindy G. Casey, RN - an intensive care nurse living in Sausalito, California
- Murphy - an artist & musician living in Oakland, California
- Wendy E. Tripp - a veterinary technician living in San Jose, California

All of these cities are in the San Francisco Bay Area in Northern California.

The descriptions are using a light microscope (Nikon LABOPHOT-2), 400x lens, and a Leitz fluorescent microscope (LABORLUX D), using an ultraviolet light source with a 330 to 380 um excitation filter and a 420 um barrier filter.

The fibers were not observed to contain septa.

Julie, collected fibers from her calves in March, 2004. I teased the fibers, and mounted them on a glass slide in sterile saline (PSS). Using the 400x lens (light microscope) the following were observed:

- Red fibers 48.64 microns wide
- Clear fibers 23.04 microns wide
- Black fibers 28.16 microns wide
- Clear slender fibers with prong like structures 7.68 microns wide
- Red to red & black fibers with an internal structure that resembled ladder-like rungs, 17.92 microns wide

Her sample also included hair, which measured from 51.2 to 74.24 microns wide. Looking at her sample of collected fibers before teasing them apart, some appeared to have a thick black speck in the center of the long strands of fibers.

I mounted the speck directly on a glass slide (I had to cut the long fibers to separate the speck from the "mass" of fibers), added saline and a coverslip, and under 400x it was comprised only of extremely tangled black fibers.

I then examined the sample described above using the fluorescent microscope (unstained in saline). The majority of the fibers were extremely bright aqua autofluorescent. The black and red fibers did not autofluoresce.

I then made a preparation of fibers in 20% KOH and Calcofluor stain (a stain used to observe fungi...yeast and hyphal elements of fungal organisms fluoresce bright apple green using a fluorescent microscope in the ultraviolet range).

The fibers did not pick up the Calcofluor stain...they were the same bright aqua autofluorescent color as observed in saline, along with the black and red fibers as observed above. I also observed some hair in this preparation, which did not fluoresce.

Cindy and her husband came to my hospital lab on August 12, 2004 and I collected a very small sample from a skin lesion on her arm. I cultured the material from the lesion using fungal culture media (Sabouroud dextrose agar, Mycosel agar, and BHI agar with blood and antibiotics), incubated at 30 degrees Celsius for four weeks. The result was negative for fungal growth, with a light amount of skin bacteria observed. There was not enough specimen for microscopic examination.

Cindy brought additional skin lesion samples for a repeat fungal culture and microscopic examination on August 31, 2004. I cultured one sample using fungal culture media. The culture was also negative for fungal growth at four weeks.

The same sample obtained on 8/31/04 was observed following teasing in saline as described above using the light microscope to have:

- Clear fibers 12.8 microns to 20.48 microns wide
- Blue fibers 15.36 microns wide

Using the fluorescent microscope, the fibers showed all bright aqua autofluorescent fibers with rare black non-fluorescent fibers observed. Cindy also gave me a sample that had been collected on August 30, 2004 for microscopic observation. Using the light microscope I observed:

- red fibers 15.36 to 17.92 microns wide
- blue fibers 30.72 microns wide
- clear tubular fibers 7.68 microns wide
- clear ribbon-like fibers 15.36 microns wide
- black fibers 12.8 microns wide

In addition, I found rare spore-like structures that were football shaped, 12.8 microns long, some of which had a septate-like division across the center. Also found were very rare structures slightly resembling the asymmetrical spores of *Alternaria* species (a fungus)...these were 48.64 microns long (*Alternaria* spores are 7 to 10 microns wide and 23-34 microns long). These structures were both amber colored. I also observed needle-like structures resembling crystals in this sample.

Murphy sent me prepared microscopic slides of fibers from several skin lesions. Using the light microscope observed were in summary:

- blue fibers 23.04 microns wide (some of which were ribbon-like)
- red fibers 12.8 microns wide
- black fibers 23.04 to 30.72 microns wide
- clear fibers 15.36 microns wide
- large clear fibers 33.28 microns wide

Using the fluorescent microscope, each sample autofluoresced bright aqua blue, with darker fibers non-fluorescing.

Wendy sent two samples. The first sample, fibers from her torso, were collected on September 29, 2004. Using the light microscope, these showed:

- black ribbon-like fibers, 25.7 microns wide
- clear tubular fibers 12.8 microns wide
- blue fibers 15.36 microns wide
- red ribbon-like fibers 12.8 to 25.6 microns wide
- brown fibers with ladder-like rungs 12.8 microns wide
- brown fibers with prong-like structures along the sides 3.84 to 10.24 microns wide

The above sample had a predominance of the black fibers described above. A second sample (also from torso) collected on October 7, 2004 showed the same types of fibers as described above with the addition of:

- brown fibers with ladder-like rungs 33.28 microns wide

Using the fluorescent microscope, observed were bright aqua autofluorescent fibers, with black and red non-fluorescing fibers.

In summary:

There were many similarities in fibers from all four individuals, both in size and color. All samples showed bright aqua autofluorescence using the fluorescent microscope, with red and black non fluorescent fibers. The fibers collected from these four individuals from different counties of the San Francisco Bay Area are so similar to each other that the causative agent may be epidemiologically the same.

Respectively submitted,

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