

# CLINICAL MEDICINE

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**1** **Sporotrichosis In A Mule.** An aged mule entered the clinic on Jan. 27, 1947, presenting a history of having been cut on the plantar surface of the left hind leg at the middle of the metatarsal region. The mule had been injured some 3 or 4 weeks previously and home remedies of an unknown origin had been employed as the only treatment. Extensive granulation tissue had formed at the site of injury and the owner asked to "do what you can for him." As a matter of second thought the owner mentioned that he thought the mule had been shot with a shotgun, because of the numerous "little bumps in the skin" of the shoulder region. Little thought was given at the time to the lesions of the shoulder but later they proved quite interesting. The exuberant granulation tissue of the hind leg was treated in the usual manner with poor results as is so often the case, but since this report is more concerned with the lesions of the shoulder rather than the mule in general, we will confine ourselves to that area.

In the area of the left shoulder and pectoral region about 15 or 20 well defined nodules 2 to 3 cm. in diameter were noted. To determine whether or not a foreign body was the inciting cause the area over one of the nodules was shaved, painted with tincture of iodine and excised. The finger was introduced but no foreign object could be found. A thick creamy exudate oozed from the incised abscess. There was no definite pattern



Fig. 1—Lesion of cutaneous sporotrichosis in the left shoulder region of a mule.

of arrangement of the nodules nor were the lymphatics of the area at all involved. In this particular case there was no ulceration of the nodules as is often seen in more advanced cases of sporotrichosis.

In an attempt to establish a definite diagnosis an aseptic aspiration of the material from one nodule was made for bacteriological cultures. A slant of Sabouraud's agar was inoculated with the material and a brownish, nondescript growth was noted on the third day. The culture was allowed to grow at room temperature for 10 days at which time the growth had become quite profuse and blackened in

color. A plate of Sabouraud's agar was then inoculated with material from the slant and allowed to grow for 15 days. Direct microscopical observation of the plate culture showed a branched filamentous growth closely resembling *Sporotrichum species*.

A male mouse was subjected to an intraperitoneal injection of the culture, and on the fourteenth day an autopsy was conducted. The mouse had developed a suppurating lesion at the site of injection, but no generalized peritoneal lesions or orchitis was evident. A Gram's stain of a direct smear of the lesion very clearly demonstrated the presence of the characteristic Gram positive, cigar-shaped conidia among the cells present in the exudate. Dr. Norman F. Conant, of Duke University, definitely identified the culture as being *Sporotrichum schenckii*. (1)



Fig. 2—Colonies of *Sporotrichum schenckii* cultured from the lesion shown in Fig. 1.

The mule was subjected to a course of iodine treatments consisting of intravenous administration of 1 oz. of sodium iodide in 500 cc. of distilled water. The treatment was given every third day until a total of 5 oz. had been given. At the time of the last administration the animal had begun to exhibit symptoms of iodism and the lesions had become considerably smaller, more definitely defined, and somewhat closer to the surface of the skin. It was

impossible to determine any further action of the iodide on the lesions because of the unfavorable prognosis of the exuberant granulation tissue of the hind leg. The owner did not wish to invest any more money in treatment and requested that the animal be destroyed. When the animal was skinned during the autopsy it was noted that the nodules did not involve any of the subcutaneous tissue or the lymphatics. They seemed to be confined to the cutaneous tissues.

Sporotrichosis has been defined as a chronic disease characterized by nodules, abscesses, and ulcers on the skin and in severe cases by suppurations of some of the internal organs and bone. Natural infection is rather rare, being seen most often in the horse, mule, and man, occasionally in the dog and rat and very rarely in the ox. Susceptible laboratory animals include the mouse, rat, hamster, and the rabbit to a certain degree. The hamster seems to be most desirable because of the nearly pathognomonic orchitis it develops.

Sporotrichosis in animals has been reported in France, India, Madagascar and the United States among others. In this country the large majority of cases have been reported in the Missouri Valley and in Pennsylvania. Reports of cases of sporotrichosis in humans seems more or less to coincide in geographical distribution with reports of cases in domestic animals.

The etiological agent of this disease is a vegetable fungus of the species *Sporotrichum*. Most authors agree that the disease in the horse is produced by *Sporotrichum schenckii* infection. It is thought that thorns, barbs, etc., play an important role in the transmission of the fungus in man and animals. There is little evidence of direct transmission.

The clinical symptoms of sporotrichosis are the rather slow appearance of small, spherical, sharply contoured nodules in the skin. There is no tendency of the nodules to coalesce nor is there a "cording" of the lymphatics of the affected area. As the disease progresses the nodules will become more sharply defined, the hair over them will fall out and the

surface of the skin will become encrusted. Still later the lesion will rupture forming a crateriform ulceration discharging a scanty amount of yellow pus. Finally the lesion will heal leaving a hairless cicatrix. Internal lesions have not been reported in the horse, but one case of pulmonary sporotrichosis in the ox is on record. (2)

Laboratory diagnosis of sporotrichosis consists of the isolation and identification of fungus. All ordinary laboratory media will grow the fungus, but some are more desirable for the isolation of the culture than others. The ones of choice are Sabouraud's agar, potato, carrot, and an acid-dextrose-yeast-extract agar used by Yegian, Diran and Kurung. (3) The best culture growth is achieved at 30° C. (slightly above room temperature) rather than at the usual 37.5° C.

The peritoneal inoculation of mice, rats or hamsters using a suspension of the suspected material usually results in death in from 5 to 75 days. Evidence of a generalized peritoneal infection and an orchitis in males (particularly in hamsters) is usually demonstrated upon autopsy. A Gram stain of a direct smear from one of the lesions will show the typical Gram positive, cigar-shaped conidia present among the cells of the exudate. This is a distinguishing feature of the disease as is the observation of branched filaments on the margin of a growth colony when viewed under the microscope.

The medicinal treatment of sporotrichosis is usually based on iodine therapy of one form or another. Intravenous administration of sodium iodide has been used most extensively but the oral administration of potassium iodide or a direct swab of tincture of iodine may be employed. Response to the iodine treatment is noticed in a very short time but complete recovery will most likely take quite some time. Surgical excision of the encapsulated abscesses has been used but reoccurrence of the abscesses was noted some time later. The operators, in this particular case, then administered a course of potassium iodide per orum in conjunction with surgical excision, and obtained an apparent recovery. (4) Until a more extensive study of the disease has been

conducted a guarded prognosis should be made.

Little is known of the immunological aspect of sporotrichosis. The disease is of little economic importance due to its rarity and has, therefore, received only a small amount of scientific study.

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**Rumen Fistula.** On Oct. 22, 1946, a Holstein cow was admitted to Stange Memorial Clinic. The owner had found the animal bloated 8 days before and at that time he had tapped the rumen with a butcher knife. The wound in the abdominal wall did not heal so the owner sought professional aid for the cow.

The cow was given routine care and no treatment was begun until Oct. 28, because the granulation tissue forming in the wound was deemed too friable to hold the necessary stitches. A period of 6 days was allowed to elapse so the newly formed granulation tissue would be better organized. The cow was placed in the stocks and the area surrounding the fistula was shaved, washed, defatted with ether, and 70 percent alcohol plus tincture of iodine applied. The anesthesia was induced by paravertebral-lumbar anesthesia. Complete anesthesia of the area was obtained.