The medical journal of Australia

June 23, 1996 Vol. 144

Lyme disease on the NSW south coast

To the Editor: I wish to report the presence of Lyme disease and its cutaneous manifestation, erythema chronicum migrans, on the NSW south coast.

A 34-year-old gardener from Guerilla Bay near Moruya presented to his doctor in March 1985. He had been bitten on the arm and back by an insect that was said to be a tick, and subsequently developed an erythematous rash that spread radially from the papule to the lesions. The lesions were treated initially with tetracycline by mouth for two weeks and the rash cleared. Several weeks later the rash recurred and the edge was biopsied. The skin biopsy showed a superficial and deep perivascular infiltrate of lymphocytes consistent with erythema chronicum migrans (ECM). Treatment with penicillin (500 mg four times a day) for one month resulted in complete resolution of the rash.

A second patient, a 60-year-old female pensioner from North Bundalong (between Nowra and Ulladulla), presented to me in December 1985 with a one-month history of lassitude, polyarthralgia and headaches that were associated with an erythematous macular rash on the chest wall and left thigh. The rash commenced as an erythematous papule which had spread radially. A skin biopsy from the edge showed a dense perivascular infiltrate of lymphocytes in the full thickness of the dermis, with some eosinophils, consistent with ECM. A diagnosis of early Lyme disease was made and she was treated with doxycycline (100 mg twice a day) for 30 days. The rash, arthralgia and lethargy resolved and she has been well subsequently.

Europeans have long recognized an acute self-limited illness that is characterized by fever, malaise and fatigue. It is preceded by a tick bite and associated with ECM at the site of the bite. Penicillin shortens the duration of the exanthem. Meningopolyneuritis may occur after the rash.

In 1977, in Lyme, Connecticut, USA, Steere et al. described an infectious disease syndrome that was characterized by ECM and associated with cardiovascular, neurological and joint abnormalities.1 This disorder has subsequently become known as Lyme disease

---

**TABLE: Flow cytometric analysis of cell-surface antigens of peripheral blood leukemic cells**

<table>
<thead>
<tr>
<th>Reactivity with monoclonal antibodies to *</th>
<th>T4</th>
<th>T6</th>
<th>T8</th>
<th>T9</th>
<th>T10</th>
<th>T11</th>
<th>OKT1</th>
<th>B1</th>
<th>B2</th>
<th>B4</th>
<th>M1</th>
<th>M5</th>
<th>My4</th>
<th>My7</th>
<th>My9</th>
<th>J5</th>
<th>IgM</th>
<th>IgG</th>
<th>K</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>T setting</td>
<td>3.79</td>
<td>0.25</td>
<td>3.46</td>
<td>0.70</td>
<td>36.26</td>
<td>7.77</td>
<td>87.77</td>
<td>0.17</td>
<td>0.43</td>
<td>0.20</td>
<td>6.49</td>
<td>5.84</td>
<td>4.41</td>
<td>1.68</td>
<td>4.55</td>
<td>0.35</td>
<td>0.62</td>
<td>7.42</td>
<td>0.52</td>
<td>1.01</td>
</tr>
</tbody>
</table>

---

is a complex multisystem disorder that can occur at any age, in either sex and is seasonal in onset, usually occurring in summer or early autumn.

Small pencil-point ticks of the genus *Ixodes* have been identified as the vector. Recently Burgdorfer et al. were able to isolate a hitherto unknown spirochaete from adult *Ixodes dammini* ticks. This spirochaete, which is now known as *Borrelia burgdorferi*, has been isolated from the spinal fluid, blood and skin of patients with Lyme disease. Berger et al. showed evidence that this spirochaete was present in skin biopsy specimens that were obtained from ECM lesions in patients with Lyme disease.

Lyme arthritis and ECM have been described in the Hunter Valley by Stewart et al., but the extent of the distribution of the spirochaete and its vector is unknown in Australia.

Medical practitioners whose patients holiday on the south coast of New South Wales should be aware of Lyme disease and its later manifestations of neurological, cardiac and joint involvement.

1. McCrossin, FACD
   Department of Dermatology
   The Royal North Shore Hospital of Sydney
   St Leonards, NSW 2065


**Mucormycosis and chronic brain abscess**

To the Editor: Cerebral mucormycosis is a rare, acutely fulminating and rapidly fatal disease that occurs almost exclusively in immunosuppressed hosts and patients with diabetes mellitus, especially if they are acidic. Gregory et al. described a classic triad of diabetes mellitus, orbital infection and meningoencephalitis. The pathogenesis has been attributed to fungal invasion of the nasal mucosa with extension to the sinuses and orbit, and subsequent spread to the cerebrum by way of the cribriform plate. Generally, a clinical picture of facial and orbital swelling, sinusitis and an orbital apex syndrome is present. We wish to present an unusual case of cerebral mucormycosis that presented as a chronic cerebral abscess, in a patient with mild diabetes mellitus.

A 47-year-old woman with a 10-year history of mild hypertension presented with a three-month history of persistent, moderately severe, frontal headache which was worse in the morning. There were no other associated symptoms. There were also mildly raised blood pressure, physical examination did not reveal any abnormality. The blood sugar level showed that the patient had mild diabetes mellitus. The results of a full blood count were normal and chest and skull x-rays were normal. A computed tomographic (CT) scan of the head showed a cystic lesion in the right frontal lobe that measured 3.3 x 2.3 cm, with ring enhancement, and a small amount of surrounding oedema with a mass effect.

A provisional diagnosis of a cystic astrocytoma was made. The patient was referred subsequently for surgery. At operation a brain abscess with thick, not foul-smelling pus was found. It was attached to the falx cerebi and the crista galli. The abscess and its wall were removed. After operation the patient received therapy with ampicillin at first and then later with high-dose penicillin, chloramphenicol and metronidazole; phenytoin; glibenclamide; and dexamethasone in reducing doses. The results of bacterial culture of the pus were negative. Histology of the material that was removed during operation showed multiple abscesses with abundant, broad fungal hyphae within an extensive area of suppuration and necrosis; this was surrounded by a granulomatous reaction. The hyphae were infrequently septate and thin-walled with non-parallel sides that ranged in width from 7–15 μm (Figure). Focal bulbous dilatations and non-dichotomous irregular branching, sometimes at right angles, were seen. The fungus were easily seen on haematoxylin–eosin staining and were deeply basophilic. The fungal stain, Grosmori methanamine silver, was not taken up well.

These appearances were consistent with a diagnosis of cerebral mucormycosis. After the operation, the patient felt improved and her recovery was uneventful. On the ninth postoperative day, half-an-hour after she had been noted by nurses as ambulant, she was found in a deep coma with signs of tentorial herniation. A CT scan showed a massive intracerebral haemorrhage. An attempt was made to evacuate the clot, but the patient died a few hours later.

This patient had an isolated mucormycotic abscess in the frontal lobe without obvious signs or symptoms of nasal or orbital infection. The only neurological symptom was headache. The infection appeared to be chronic and low-grade and had lasted several months. There was no evidence of a depressed immune status. The patient was found to have mild diabetes mellitus that was easily controlled with oral hypoglycaemic agents. Such cases of cerebral mucormycosis are rare. Isolated cerebral lesions without systemic or rhino-orbital manifestations have been noted in the literature, but the patient usually has an underlying illness, an astrocytoma, a depressed immunological state, such as in heroin addiction and in patients who are receiving corticosteroid therapy, or has renal insufficiency. Case 27 in the paper by Strathaata et al., who presented with a brain abscess, had associated hypertension only. Jones et al. reported a patient who was otherwise fit, who developed chronic meningitis from intracranial mucormycosis. Mureson reported a remarkable case of an 18-year-old man without any previous medical history who presented with an isolated mucormycotic brain abscess. The patient was operated upon but did not receive fungal therapy. He was observed for two-and-a-half years and appeared to recover completely.

Annie G.C. Tan, MPath (Mal.)
Department of Pathology
C.T. Tan, MRCP (UK)
Department of Medicine
Faculty of Medicine
University of Malaya
5910 Kuala Lumpur, Malaya


