Single, small, enhancing lesion (SSEL) on CT of the head is a common finding in epilepsy patients in India. Goulatia et al. convincingly demonstrated that the lesions resolved when seizures were controlled with anticonvulsants. Etiologic possibilities considered include tuberculosis, focal encephalitis, microabscess, and cysticercosis. Ahuja et al. detected antibodies against cysticercosis in 12 of 15 patients, and the current belief is that the majority of these lesions are cysticercosis.

Spontaneous resolution of SSEL led some authors to initially dismiss cysticercosis as the etiology, but spontaneous resolution was taken into account by Mitchell and Crawford while making a presumptive diagnosis of cysticercosis in children with SSEL. All of these patients were treated with anticonvulsants alone. Mitchell and Crawford proposed that these lesions be classified as "acute lesions."

It is not known whether cysticidal drugs hasten the resolution of these lesions. Rawlings et al. have suggested that empiric therapy with praziquantel be used to hasten the resolution of SSEL. Using this approach, they documented the management of two patients with SSEL, and in both patients the lesions resolved in 2 to 4 weeks' time. Rajshekar treated 11 patients with albendazole for 2 weeks. Four patients showed response to therapy; the lesions either resolved completely or showed significant reduction in size. Because spontaneous resolution is common, it is difficult to say if the resolution was spontaneous or in response to albendazole.

Furthermore, since it was an open study, there were no controls. The author himself states that natural involution of the cyst cannot be excluded.

Since albendazole is an effective treatment of cerebral cysticercosis, we carried out a double-blind, randomized, placebo-controlled study to determine whether it aids in the resolution of SSEL.

Methods. Seventy-five patients with epilepsy who showed SSELs on contrast-enhanced CTs of the head and demonstrated no neurologic deficit on examination were enrolled. History regarding the type and frequency of seizures, presence of Todd's palsy, headache, and any other neurologic symptom was recorded. Complete clinical assessment was made at the time of enrollment and at each follow-up. A careful search was made for subcutaneous nodules. Hemogram, liver and renal function tests, and chest skigrams were done in all patients. CSF analysis was done in 50 patients. IgM antibodies against cysticercosis and tubercular antigens were measured by ELISA in both serum and CSF in 45 patients.

Patients were randomly allocated to placebo or albendazole therapy. Albendazole was given in the dose of 15 mg/kg/d for 7 days, in three divided doses. Anticonvulsant medication was continued unchanged. Contrast-enhanced CT of the head was done at the start and completion of treatment and at 1 and 3 months after the initiation of treatment. CTs were assessed by a neuroradiologist (N.K.M.) who was not aware of the treatment received by the patient. The assessment was done for the site and size of the lesion and the extent of edema. Any change in the above variables was noted. Total resolution meant that the lesion was no longer discernible on contrast-enhanced CT or that a punctate calcification was seen as a residue. When the size of the enhancing lesion or surrounding...
Table. Fate of CT lesions

<table>
<thead>
<tr>
<th></th>
<th>1 Week</th>
<th></th>
<th>1 Month</th>
<th></th>
<th>3 Months</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Resolved</td>
<td>P</td>
<td>C</td>
<td>NC</td>
<td>I</td>
</tr>
<tr>
<td>Albendazole</td>
<td>40 (18)</td>
<td>15 (2)</td>
<td>20 (14)</td>
<td>5 (2)</td>
<td>26 (10)</td>
<td>2 (2)</td>
</tr>
<tr>
<td>Placebo</td>
<td>35 (12)</td>
<td>12 (1)</td>
<td>16 (10)</td>
<td>7 (1)</td>
<td>23 (4)</td>
<td>3 (3)</td>
</tr>
<tr>
<td>Total</td>
<td>75 (30)</td>
<td>27 (3)</td>
<td>36 (24)</td>
<td>12 (3)</td>
<td>49 (14)</td>
<td>5 (5)</td>
</tr>
</tbody>
</table>

P Partial, C Complete, NC No change, I Increased, ( ) Seropositive for cysticercosis.

Figure 1. Contrast-enhanced CTs (A) before and (B) 3 months after albendazole therapy.

edema was reduced by 50% or more, it was graded as partial resolution. Statistical analysis of the results was done using Wilcoxon's rank sum test.

Results. Seventy-five patients (52 males and 23 females) with a mean age of 21.8 years (range, 3.5 to 50) were included in the study. The mean duration of epilepsy was 11.4 months (range, 1 day to 6 years). Fifty-eight patients had partial seizures and 17 had generalized tonic-clonic seizures. Neurologic examination was normal in all. None had systemic evidence of tuberculosis or subcutaneous nodules. The CT lesion was frontal in 48 patients, parietal in 22, occipital in four, and temporal in one. The size of the lesion

Figure 2. Contrast-enhanced CTs (A) before and (B) 3 months after placebo therapy.
varied from 3 mm to 2.1 cm, with a mean size of 1.18 cm. The perilesional edema varied from 8 mm to 5 cm, with a mean of 2 cm. Serum ELISA for cysticercosis was positive in 30 of 45 patients. Twenty of these 30 patients showed positive response in CSF as well. Forty patients were randomized to albendazole and 35 received placebo.

Resolution of the CT lesion was seen at the 1-week interval in 27 patients, at the 1-month interval in 54 patients, and at the 3-month interval in 68 patients. Thirty-five of 40 patients on albendazole ($p < 0.01$) and 33 of 35 patients on placebo ($p < 0.01$) showed resolution at the end of 3 months. Applying Wilcoxon's rank sum test, there was no statistically significant difference seen in the results obtained between the two groups. Five patients showed no change in the CT lesions at the end of 3 months, and two patients (one who received albendazole and one who received placebo) showed an increase in size and edema. The results are summarized in the table.

**Conclusion.** We found resolution of SSEL as early as 1 week in some patients. By the end of 3 months, the majority (68/75) showed significant reduction or total resolution of the lesion with no statistical difference between the albendazole or placebo groups. We therefore conclude that albendazole does not alter the resolution pattern of SSEL.

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Albendazole in single CT ring lesions in epilepsy

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