

intraocular lenses implanted in them 5 years ago, to be in very good condition. Although extrapolating from this may not be proper, there is a need to look carefully into this aspect of eye care among leprosy patients since the shifting scenario of ocular leprosy will soon demand it.

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## Colon is Not Involved in Human Leprosy

TO THE EDITOR:

We report our data regarding lack of colon involvement in human leprosy. Lepromatous leprosy is known to affect the skin, nerves, upper respiratory tract, testes, anterior chamber of the eye and the reticuloendothelial system. In advanced cases leprosy infiltrate of the adrenal glands, bones and skeletal muscles may occur<sup>(1,2)</sup>. Involvement of the gastrointestinal tract other than the liver is rare in leprosy although there are reports of invasion of gut musculature by leprosy bacilli and severe villous atrophy<sup>(1,3,4,10)</sup>. There are little data on whether colonic involvement occurs in human leprosy.

Ten patients with lepromatous leprosy were studied for evidence of colon involvement. The diagnosis of leprosy was confirmed by skin biopsy and slit-skin smear from five sites. The patients were questioned about the occurrence of colonic symptoms such as diarrhea, pain in the abdomen, tenesmus, bleeding from the rectum and worm infestation. Patients who had had colitic illness in the last 2 months and those on laxatives or antibiotics were excluded from the study. Complete hemogram, serum biochemistry, hepatic and renal function tests and a chest X-ray were carried out for each patient. Stools were examined on three occasions for ova, cysts and trophozoites. Colonoscopy was done after in-

formed consent using an Olympus CF-10L endoscope, at which time mucosal details were noted. Biopsies were taken from the cecum, ascending colon, transverse colon, descending colon, sigmoid colon and rectum. Histopathological examination was carried out on hematoxylin and eosin (H&E)-stained sections. Each biopsy was also stained with Ziehl-Neelson stain and examined for *Mycobacterium leprae*. A Congo red stain was done to look for amyloid deposits.

All patients were males; 5 polar lepromatous, 4 borderline lepromatous, and 1 subpolar lepromatous patient with histoid nodules. Two patients had moderate type 2 reaction, and the average duration of disease was 2.1 years; mean bacterial (BI) and morphological (MI) indices were 4<sup>+</sup> and 2%, respectively. None of the patients had gastrointestinal symptoms. Stool examination was normal in all except one patient in whom round and thread worms were seen in the transverse colon. Histologically two of the patients had nonspecific changes in the form of mucosal edema and infiltration with inflammatory cells in the rectal and sigmoid colon biopsies. No acid-fast bacilli (AFB) or amyloid deposits were encountered in detailed studies of multiple sections.

Lepromatous leprosy, a multisystem disease, involves visceral organs due to lodgement of leprosy bacilli that are demonstrat-

ed in the peripheral blood of almost 90% of patients with lepromatous leprosy<sup>(2)</sup>. In human leprosy the esophagus, stomach and intestines are seldom involved, showing only microscopic foci of leprosy cells in submucosa<sup>(12)</sup>. Involvement of the stomach has been confined to demonstration of AFB in gastric juices<sup>(6)</sup> or occasional atrophic gastritis<sup>(4)</sup>. Small intestine involvement as bacilliferous and histiocytic infiltration and amyloid deposits has been described in an autopsy series<sup>(8, 9, 11)</sup> and steatorrhea in 2 out of 25 patients during life<sup>(4)</sup>. Experimental leprosy leads to widespread involvement of the gastrointestinal tract in armadillos but rats and mice escape such involvement<sup>(5)</sup>. Involvement of the digestive organs is surprisingly common in murine leprosy in which the stomach (49.4%), intestines (35.6%), salivary glands (38.5%), tongue (31.6%), and pancreas (6.4%) are affected<sup>(11)</sup>. Colonic involvement has not been looked for or was negative<sup>(3, 4, 9)</sup>. Involvement of rectal submucosa in amyloidosis has, however, been documented but *M. leprae*-specific changes have not been demonstrated<sup>(9)</sup>. It seems that the colon is spared leprosy involvement as are the lungs, kidneys and central nervous system.

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