Alternative methods of treatment should therefore be considered before potent corticosteroids are injected directly into superficial musculoskeletal or cutaneous lesions. This is especially important when these are situated in easily visible sites in patients with deeply pigmented skin.

I thank Professor R B Duthie for allowing me to report patients under his care and Mrs Sandra Newman for secretarial help.

4 Feldman JD. The in-vitro reaction of cells to adrenal cortical steroids with special reference to lymphocytes. Endocrinol 1950;46:552.

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Value of routine chest radiography in an acute geriatric unit

Chest radiography is a recognised screening procedure for newly admitted patients aged over 60. We decided to assess how widespread and useful is this policy.

Methods and results

A questionnaire was sent to 97 departments of geriatric medicine to determine prevailing policy. Also 200 consecutive admissions to Northwick Park Hospital were assessed prospectively during a three month winter period. The diagnoses and proposed treatments were determined from history and clinical examination. A single frontal chest x-ray film was then obtained and its effect on the clinical diagnosis and treatment documented.

The mean ages of the 131 female and 69 male patients were 82 and 80 years respectively. In 140 instances this was their first admission to the unit. Questionnaires were returned by 85 consultants and indicated that two thirds of hospitals obtained a routine film for all patients on admission. The table shows the results of the clinical survey. Fractionally under half of the chest films were abnormal. The management value of the films was placed into one of two categories: in category 1 (38 patients) the results of radiography affected management in either a positive manner—for example, when a bronchial carcinoma was detected—or negative manner—for example, no evidence of a bronchial carcinoma when this had been a possible diagnosis. Nineteen of the 38 patients had presented with cardiorespiratory symptoms. There were nine patients with toxic confusional states in whom radiography was useful by making it likely or unlikely that the respiratory or cardiovascular system was the underlying cause. In five patients admitted with bone pain the chest films influenced management—for example, by assessing secondary deposits in ribs or by making it likely or unlikely that a rib fracture was present.

In category 2 (162 patients) the chest film was either normal (102) or abnormal (60) but did not affect management. These patients included five with cardiorespiratory symptoms in whom radiography did not confirm

### Value of routine chest radiography in an acute geriatric unit

<table>
<thead>
<tr>
<th>Category of management value of chest film</th>
<th>Clinical presentation</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Cardiorespiratory symptoms or signs</td>
</tr>
<tr>
<td>1 (normal or abnormal and influenced diagnosis or treatment)</td>
<td>19</td>
</tr>
<tr>
<td>2 (normal or abnormal and did not influence diagnosis or treatment)</td>
<td>62</td>
</tr>
<tr>
<td>Total</td>
<td>81</td>
</tr>
</tbody>
</table>

*This group was distinct from the others and included patients with parkinsonism, anaemia, depression, dementia, falls, leg ulceration, and cerebrovascular disease.
Does delta infection play a part in the pathogenesis of hepatitis B virus related hepatocellular carcinoma?

The delta (δ) agent is a defective RNA viral agent which requires helper functions from the hepatitis B virus for its replication and transmission. The agent plays an important part in the pathogenesis of severe acute hepatitis and chronic active hepatitis (and perhaps cirrhosis) in people who have or have had hepatitis B infection. Because about 80% of cases of hepatocellular carcinoma world wide are related to hepatitis B virus and in most there is coexisting cirrhosis, we investigated the possible role in coinfection with the δ agent in these patients.

Patients, methods, and results

Serum from the following groups was examined for δ antigen and anti-δ: 107 South African blacks who were positive for hepatitis B surface antigen (HbsAg) and had hepatocellular carcinoma; 144 black carriers of HbsAg; and 17 multiply transfused renal transplant recipients who were positive for HbsAg. The examinations, using radioimmunoassay, were performed in the laboratory of Dr M Rizzetto in Turin, Italy. The patients with cancer were aged 13-74 years (mean 38 years); there were 101 men and 6 women. Of the chronic HbsAg carriers 137 were asymptomatic and seven were known to have cirrhosis or chronic active hepatitis. They were aged 3-57 years; there were 132 men and 12 women.

HbsAg, anti-HBs, antibody to the core antigen (anti-HBc), e antigen (HBeAg), and antibody to the e antigen (anti-HBe) were measured by radioimmunoassay (Austria II, Ausab, Corab, and HBe/anti-HBe, respectively, Abbott Laboratories).

Liver and tumour tissue from a further 80 patients with hepatocellular carcinoma was examined for δ antigen by the direct immunoperoxidase technique using a peroxidase conjugated anti-δ antibody. Serum samples were also taken from 55 of these patients. The mean age of the 80 patients was 53-2 years (range 12-81 years) and there were 66 men and 14 women. In all of these patients we performed histochemical staining of the tissues to anti-HbsAg.

Serum studies—The serum of all the 107 patients with hepatocellular carcinoma was positive for HbsAg and anti-HBc; HBeAg was present in 34 and anti-HBe in 66. HBeAg was detected in 19 (13%) of the chronic HbsAg carriers and in 15 (88%) of the transplant recipients. Neither δ antigen nor anti-δ was detected in the serum of any of the patients with hepatocellular carcinoma, the chronic carriers of HbsAg, or the renal transplant recipients.

Tissue studies—HbsAg and anti-Hbc were present in the serum of 19 of the 55 patients with hepatocellular carcinoma in whom both tissue and serum were studied. Three of these patients were positive for HBeAg and 15 for anti-HBe. A further three patients were positive for anti-HBe in the absence of HbsAg and anti-Hbc. Anti-HbsAg with or without anti-Hbc was present in 24 patients and anti-Hbc in six of these. Six patients had no markers of hepatitis B infection. Of the 19 patients with HbsAg/Hbc antigens HbcAg was detected in 14. One patient with anti-Hbc and anti-Hbc alone was also positive for tissue HbsAg. Of the 25 patients in whom tissue alone was studied six showed HbsAg. In all, 26 patients showed either serological or tissue evidence of HbsAg and one further patient had anti-Hbc alone in the serum. δ Antigen could not be shown in either non-neoplastic liver tissue or in tumour tissue in any of the patients.

Comment

δ Infection does not play a part in the pathogenesis of hepatocellular carcinoma in South African blacks. Serological evidence of δ infection was not found in a substantial number of chronic carriers of HbsAg who lived in several areas of South Africa, and thus the agent could not be expected to have a causal role in chronic liver disease, including hepatocellular carcinoma, in this region. We cannot, of course, exclude the possibility that the δ agent has a pathogenetic role in the hepatocellular carcinoma that occurs in other populations with a high prevalence of infection with this agent. Nevertheless, δ antigen was shown immunohistochemically in only 14% of HbsAg positive Greek patients with hepatocellular carcinoma (compared with 29% of patients with HbsAg positive chronic active hepatitis and 28% of those with HbsAg positive cirrhosis) and infrequently in Italian and North American patients.

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