chromium throughout the body is fairly uniform. With these assumptions the maximum increase in concentratoin of chromium in equilibrium throughout the whole body is calculated to be 0·5 p.p.m. and the average increase 0·2 p.p.m. Although the assumptions may have been adequate for giving guidance on radiological protection they are of doubtful value for determining the change in concentration of chromium in organs due to wear products from implants. It is therefore suggested that further work should be undertaken to check the biological half life and the distribution of chromium in the body.

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MEDICAL MEMORANDA

Mumps Pancreatitis without Parotitis

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Though mumps pancreatitis without parotitis has been reported in adults (O'Brien *et al.*, 1965; Witte and Schanzer, 1968) we have not seen it in children. We therefore report here two cases of mumps pancreatitis in children under 10 years of age, in one of which pancreatitis was the only clinical manifestation of mumps virus infection.

Case 1

The patient, a 9-year-old girl, was admitted to hospital complaining of sudden onset eight hours previously of severe abdominal pain, vomiting, and cold perspiration. She was pale, had generalized abdominal tenderness, more pronounced around the umbilicus, with muscular guarding, pyrexia of 38·2°C, a pulse rate of 140/min, and a blood pressure of 86/54 mm Hg. Blood examination showed Hb 13·2 g/100 ml, W.B.C., 12,000/mm³ with polyneutrophil 36%, band cells 4%, lymphocytes 55%, and monocytes 5%. Urine analysis was normal and lungs were clear on *x*-ray examination. Alanine transaminase and aspartate transaminase were 48 and 65 units respectively, and total serum bilirubin was 1·2 mg/100 ml. A history of mumps in an older brother 20 days before suggested a diagnosis of mumps pancreatitis. Serum amylase was found to be 1,600 Somogyi units and a 12-hour urine excretion of amylase was 3,200 Somogyi units.

The patient responded slowly to intravenous fluid and intravenous analgesics and antispasmodics. Severe abdominal pain and cramps continued for 48 hours, gradually becoming episodic and milder. Oral feeding started after 36 hours and after six days she was almost free of pain. The serum amylase on the third, fifth, and seventh days was 1,600, 2,400, and 1,600 Somogyi units respectively. She was discharged on the seventh day. She complained of occasional abdominal cramps up to four weeks after discharge. Serum obtained on admission and 21 days later contained neutralizing antibody to mumps virus at titres of 1/4 and 1/32 respectively.

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Case 2

The second patient, a 6-year-old boy, presented with similar signs and symptoms, and the clinical findings were similar except for the presence of bilateral parotitis, which made the diagnosis obvious. He was discharged from hospital after eight days. Sixteen days later he complained of only occasional abdominal cramps. Serum obtained on admission and 24 days later contained neutralizing antibody to mumps virus at titres of 1/4 and 1/16 respectively.

The neutralizing antibody titres were determined in both cases by the standard neutralization technique (Lennette and Schmidt, 1964) using chick cell cultures and Jerry Lean strain of mumps virus.

Comment

The diagnosis of mumps in the absence of parotitis is difficult and only virological study can confirm it. Only two out of 90 cases of pancreatitis reported by Joske (1955) were listed as due to mumps, but the aetiology was unknown in 22 cases and perhaps virological study would have shown some to have been due to mumps without parotitis.

Comparing our two cases of mumps pancreatitis in children with those reported in adults (O'Brien *et al.*, 1965; Witte and Schanzer, 1968) it seems that the disease is milder in children and recovery occurs within a shorter period. The clinical picture of sudden onset of generalized abdominal pain with pallor, nausea, vomiting, tachycardia, and abdominal wall guarding is not only that of pancreatitis. We think, however, that mumps pancreatitis without parotitis may be more common than is thought, and it should be looked for in any patient presenting with an acute abdominal condition.

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