choroidal lesions with blurred vision in the right eye due to macular oedema. This gradually improved, though visual acuity remained somewhat reduced due to chronic posterior uveitis. In August 1974 chest radiographs showed peripheral lung mottling and her maintenance dose of corticosteroid was increased to 10 mg daily.

Discussion

Heerfordt's syndrome is an unusual manifestation of sarcoidosis consisting of parotitis with chronic or subacute uveitis and often complicated by cranial nerve pareses, usually of the facial nerve. Originally described in 1909,¹ it was not recognised as a manifestation of sarcoidosis until 1937. The complete picture is rare. Scadding² had no cases of the complete syndrome in his series, and Greenberg *et al.*,³ reviewing 388 cases of sarcoidosis, reported only 8 with uveo-parotitis and only one with a facial palsy. Familial association in sarcoidosis is well recognised.⁴ In 13 instances of sarcoidosis affecting identical twins the manifestations of the disease in each twin pair tended to be similar.⁵ This seems to be true of less closely related subjects. Interestingly, both our cases presented almost simultaneously with a most uncommon form of sarcoidosis and followed very similar courses.

¹ Heerfordt, C F, *Albrecht v Graefes Archiv für Ophthalmologie*, 1909, 70, 254.

² Scadding, J G, in *Sarcoidosis*. London, Eyre and Spottiswoode, 1967.

³ Greenberg, G, *et al*, *British Medical Journal*, 1964, 2, 861.

⁴ Research Subcommittee of British Thoracic and Tuberculosis Association, *Tubercle*, 1973, 54, 87.

⁵ Selroos, O, *et al*, *American Review of Respiratory Diseases*, 1973, 108, 1401.

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Tear fluid lysozyme concentration: guide to practolol toxicity

By the end of 1974 the Committee on Safety of Medicines had reported 187 cases of diminished tear secretion and conjunctivitis or corneal damage associated with long-term practolol therapy.¹ Wright, reporting toxic effects of practolol, stated that several out of 27 patients had low levels of tear lysozyme.² We report here the tear fluid lysozyme concentrations in 30 patients who had been taking practolol over a long period.

Patients, methods, and results

Of the 30 patients examined four had taken practolol for 6 months, the remaining 26 had taken it for at least a year. Ten showed signs of ocular toxicity and 20 showed no signs. Eight of the 10 toxic patients had been off practolol for periods varying from 1 to 12 weeks (average 6.4 weeks). We assayed the lysozyme concentration in the tear fluid of both eyes of all the patients by our quantitative method with calibrated standards,³ the measurements being in units of activity/ μ l.

All the 10 toxic patients had tear lysozyme concentrations below normal in one or both eyes (see table). In one patient (case 2) lysozyme was absent. In 3 of the 10 patients (cases 1, 3, 7) the concentration in one eye was about three times that of the other, and in one patient (case 4) it was 9 times. These differences are outside normal limits of variation between the two eyes.³

Of the 20 patients with no signs of toxicity 15 had normal tear lysozyme concentrations (see table). One (case 19) had low concentrations in both eyes. Three (cases 11, 14, 26) had low concentrations in one eye, but the differences in concentrations between the two eyes were within normal limits. In one patient (case 17) the initial concentrations were 201 U/ μ l right and 57 U/ μ l left. A month later they were 16 U/ μ l and 25 U/ μ l respectively—a striking fall. A month after that (in January) the patient developed signs of toxicity and practolol was stopped. In May the concentrations had risen to 40 U/ μ l and 45 U/ μ l, and in July to 120 U/ μ l and 60 U/ μ l.

We also examined two patients with sclerosing peritonitis due to practolol but with no signs of ocular toxicity. Both had abnormally low levels of tear lysozyme (45 U/ μ l and 55 U/ μ l, and 30 U/ μ l and 36 U/ μ l respectively). One, in whom lysozyme levels fell further, later developed signs of ocular toxicity.

Lysozyme concentrations in tear fluid in 30 patients on long-term practolol treatment

Case No	Age	Sex	Lysozyme concentrations (U/ μ l)		
			Right eye	Left eye	Lowest normal for age
<i>Toxic patients</i>					
1	47	F	{45* 63†	{18* 21†	59
2	52	F	—	—	56
3	54	M	81	33	55
4	57	F	54	6	54
5	58	F	12	9	54
6	62	F	12	24	51
7	64	M	78	24	50
8	67	F	33	10	49
9	68	M	{48† 21‡	{42† 27‡	48
10	75	F	15	6	45
<i>Non-toxic patients</i>					
11	16	M	91	57	72
12	41	F	93	75	61
13	43	M	68	98	60
14	48	F	57	48	58
15	48	M	114	153	58
16	48	F	66	57	58
17	50	F	201	57	56
18	52	M	243	177	56
19	56	F	42	45	54
20	57	F	70	65	54
21	59	F	116	118	53
22	61	F	123	96	52
23	63	F	57	62	51
24	65	M	108	213	50
25	66	F	87	60	49
26	72	M	39	63	46
27	74	F	93	141	45
28	75	F	102	108	45
29	77	F	234	168	43
30	79	M	99	51	42

*Three weeks after practolol stopped.

†Seven weeks after practolol stopped.

‡One week after practolol stopped.

§Seven weeks after practolol stopped.

Comment

The tear lysozyme concentration could be useful as a screening test for toxicity in patients taking practolol, since the level may fall before signs of ocular toxicity appear. We are continuing this work.

We thank Mr P Wright for his advice and help, Dr D G Fleck for his continued support, and Mr J D Pescod for his technical help.

¹ Committee on Safety of Medicines, *Adverse Reactions Series*, 1975, No 11.

² Wright, P, *British Medical Journal*, 1975, 1, 595.

³ Mackie, I A, and Seal, D V. Paper awaiting publication.

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Guillain-Barré syndrome in acute HBs Ag-positive hepatitis

In acute viral hepatitis (AVH) several neurological complications have been described. The central¹ and the peripheral² nervous systems may be affected, but the Guillain-Barré syndrome (GBS), characterised by progressive symmetrical pareses, sensory loss, and a raised spinal fluid protein level with normal cell count, is extremely rare in the course of AVH.³ We report here on a patient who developed hepatitis B and GBS and in whom we were able to define accurately the relation between the onset of hepatitis B and the onset of GBS.

Case report

The patient was a 21-year-old nurse seronegative for hepatitis B surface antigen (HBsAg) in a haemodialysis unit with HBsAg (subtype adw)-positive patients. The clinical course of her disease is summarised in the figure. On

1 June (day 1) her serum, which was being checked routinely every two weeks, contained HBsAg, subtype adw, and the transaminases had risen slightly, but were still within normal limits. Nausea, vomiting, and upper abdominal discomfort then developed and on day 11 she was admitted to hospital. By then she had no complaints. There was no history of arthralgia, exanthema, skin eruptions, or fever, nor of intolerance to fat or tobacco. She did not use any medication. Her father had had a polyneuropathy complicating diphtheria in 1930. Physical examination showed jaundice and a tender, 1-cm palpable, liver. The spleen was not palpable and there were no spider nevi or liver palms. The highest values of serum alanine transaminase (SGPT) were recorded on day 11, and of serum bilirubin and smooth muscle antibody (SMA) on day 14. A liver biopsy performed on day 15 showed features of acute hepatitis, including extensive confluent necrosis of hepatocytes and portoportal bridging. Immunofluorescence for HBsAg was negative. Treatment consisted of absolute bedrest.

Course of acute hepatitis B and Guillain-Barré syndrome.

On day 20 neurological symptoms developed (see figure). Spinal fluid protein was raised (1.8 g/l); cell count, glucose, and chloride were normal; and HBsAg was not demonstrable. Respiratory musculature became affected: vital capacity measured 1200, 950, and 600 ml on days 22, 23, and 24 respectively. Tracheotomy was performed on day 24 and assisted ventilation started. From day 28 the patient improved neurologically and on day 48 assisted ventilation was discontinued. By then neurological functions were normal, with the exception of a right-sided facial paresis, which only subsided after five months. On day 28 HBsAg conversion, accompanied by proteinuria, became fully apparent. At day 63 she had become negative for SMA and positive for serum anti-HBs, while bilirubin and transaminases had become normal. A repeat biopsy showed slight prominence of Kupffer cells and small periportal connective tissue strands. After mobilisation at day 67 the liver function remained normal and recovery was uneventful.

Attempts to show laboratory evidence of several viral infections associated with GBs all failed. Apart from SMA no autoantibodies (including anti-myelin antibody⁴) were present.

Comment

Although GBS may be elicited by viral infections of different origin, it is rare in AVH and we are not aware of documented cases of GBS after acute HBsAg-positive hepatitis. Our patient developed GBS 20 days after the first, preclinical, manifestation of hepatitis B. The condition was completely reversible.

The transient proteinuria occurring with the conversion to HBsAg-seronegativity may have been due to deposition of HBsAg/anti-HBs immune complexes in glomeruli, while participation of neural antigens in complex formation⁵ seems less likely.

Whether in AVH the unusually high SMA titre heralded the development of GBS, a syndrome in which autoimmunity may play a part, remains to be established.

Dr J R H Brentjens critically revised the manuscript. The HBsAg determinations and subtyping were performed by Dr B Houwen.

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- ² Sterne, J, *Presse Médicale*, 1953, 61, 663.
- ³ Plough, I C, and Ayerle, R S, *New England Journal of Medicine*, 1953, 249, 61.
- ⁴ Edgington, T, and Dalessio, D J, *Journal of Immunology*, 1970, 105, 248.
- ⁵ Peters, D K, *et al*, *Lancet*, 1973, 1, 1183.

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Pasteurella multocida septicaemia associated with chronic liver disease

In the case of the patient with chronic liver disease and terminal *Pasteurella multocida* septicaemia reported here the organism was possibly acquired from a dog, though there was no history of an antecedent bite.

Case report

The patient, an 18-year-old man, had had recurrent bronchitis in infancy and at 22 months had been admitted to hospital with bronchopneumonia and hepatomegaly. A liver biopsy had shown biliary fibrosis and bile ductular proliferation with no evidence of cirrhosis. The result of a sweat test and duodenal trypsin, serum copper, and caeruloplasmin levels were normal. In February 1974 he was referred to the Professorial Medical Unit, Southampton. The liver and spleen were grossly enlarged and the results of liver function tests were: total bilirubin 102 μmol/l (6 mg/100 ml), alkaline phosphatase 41 KAU/100 ml, total plasma protein 56 g/l, plasma albumin 30 g/l. Tests for autoimmunity were negative, HB antigen and alpha-fetoprotein were not detected, and the alpha-1-antitrypsin level was normal. A clinical diagnosis of biliary cirrhosis secondary to partial biliary atresia was made.

In November 1974 he was admitted with increasing jaundice, abdominal pain, and vomiting. He was deeply jaundiced (total bilirubin more than 342 μmol/l (20 mg/100 ml)), feverish, and hypotensive. Blood cultures grew *P. multocida* sensitive to ampicillin. He was treated with ampicillin and a standard regimen for hepatic failure. Serum agglutination tests for *Yersinia pseudotuberculosis* and *Y. enterocolitica* were negative. His temperature fell to normal but his general condition deteriorated and he died two weeks after admission.

At necropsy the liver was found to be small and finely nodular. The common bile duct was patent and the intrahepatic biliary system consisted partly of a cavity, 8 cm by 4 cm, filled with a mass of fused pigment stones and inspissated bile. On sectioning the liver there were two discrete nodules, which were shown histologically to be hepatocellular carcinomas; the remainder of the liver showed secondary biliary cirrhosis (see fig). A mass of

Area of secondary biliary cirrhosis and cholestasis. (Haematoxylin and eosin x 60.)