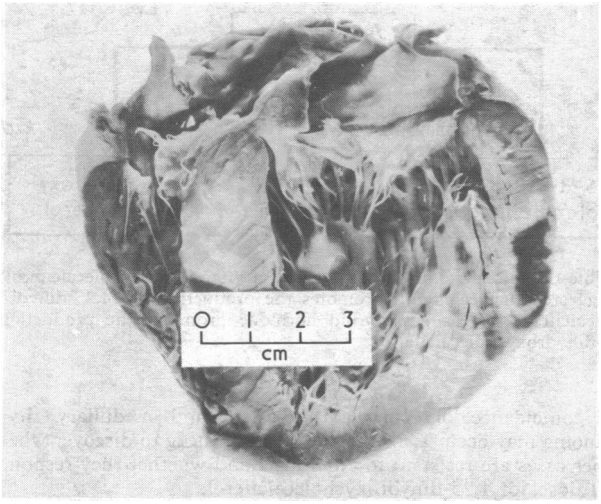
Myocardial tuberculosis

The incidence of tuberculosis in Britain has fallen steadily in recent years, but it is still common among the immigrant population, and often presents in an unusual manner. We report here two cases of tuberculous myocarditis occurring in patients from the Indian subcontinent.

Case reports

Case 1—A Pakistani youth, aged 21, with no significant previous medical history, suddenly complained of feeling dizzy and collapsed unconscious. An ambulance was called but when it arrived the patient was dead. The post-mortem examination showed the body of a well-built, healthy, young man. Several enlarged mediastinal glands were found. The heart was normal in size, and the pericardium, valves, and cavities were normal. The cut surface of the myocardium showed a yellowish infiltrate throughout, especially in the septum, which was thickened. All other organs, including both lungs, were normal. Histology of both the mediastinal glands and the myocardium showed typical caseating granulomata, although tubercle bacilli could not be demonstrated.

Case 2—A 35-year-old Indian man was admitted to hospital after the sudden onset of retrosternal chest pain. Five years previously he had been found to have tuberculous tenosynovitis at the right wrist. This had been confirmed both histologically and bacteriologically, and had been treated with synovectomy followed by antituberculous chemotherapy for nine months. On examination he had ventricular tachycardia, which reverted to sinus rhythm after intravenous lignocaine and direct current cardioversion. In spite of continuous intravenous lignocaine he had recurrent episodes of ventricular tachycardia requiring repeated cardioversion. When in sinus rhythm his only electrocardiographic abnormality was T-wave inversion in lead aVL. Serum concentrations of cardiac enzymes were considerably raised. One week after admission he developed ventricular fibrillation followed by asystole, and attempts at resuscitation failed. At post-mortem examination he was found to have enlarged mediastinal and left hilar glands. The pericardium, valves, cavities, and coronary arteries were normal. There were two large areas of myocardial necrosis, one in the wall of the left ventricle and one in the interventricular septum (see figure). Histological examination of these areas showed typical caseating granulomata, although tubercle bacilli were not seen. Enlarged caseous glands were found at the porta hepatis, but there was no residual disease at the right wrist. Both lungs were normal.



Cut surface of heart, showing necrotic areas in septum and left ventricular wall.

Discussion

Tuberculous myocarditis is extremely rare, being found in less than 0·3% of patients dying from tuberculosis.[1] Three pathological varieties have been described—nodular, miliary, and diffuse infiltrating—the first being the most common.[2] The myocardium is usually affected by direct spread from the mediastinal glands,[3] as found in both our cases. The second patient presented with recurrent paroxysms of ventricular tachycardia, progressing to ventricular fibrillation, and probably the sudden death of the first patient was due to ventricular arrhythmia. In other reports the right atrium has been the commonest site, supraventricular arrhythmias being common.[4] There has been one report of a patient with myocardial tuberculosis presenting with paroxysmal ventricular tachycardia.[5] Tuberculous myocarditis should therefore be considered in the differential diagnosis when cardiac arrhythmias occur in otherwise healthy young immigrants, although a search of published reports has failed to disclose any case where tuberculous myocarditis was diagnosed before death.

[1] Horn, H, and Saphir, O, *American Review of Tuberculosis*, 1935, **32**, 492.
[2] Pomerance, A, *British Heart Journal*, 1963, **25**, 412.
[3] Anders, J M, *Journal of the American Medical Association*, 1902, **39**, 1081.
[4] Kapoor, O P, *et al*, *American Heart Journal*, 1973, **86**, 334.
[5] Schnitzer, R, *British Heart Journal*, 1947, **9**, 213.

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Pregnancy-specific beta$_1$-glycoprotein in plasma and tissue extract in malignant teratoma of the testis

Pregnancy-specific β_1-glycoprotein (SP_1) is one of the recently isolated trophoblast-specific proteins.[1] Nevertheless, SP_1 has also been found in non-trophoblastic tumours.[2] The development of a specific and sensitive radioimmunoassay for SP_1 has permitted detection and measurement of this substance at extremely low levels.[3] We wish to report the detection of SP_1, for the first time, in the plasma of a man with a malignant teratoma of the testis.

Case history

A 53-year-old man was admitted for management with a three-month history of unilateral gynaecomastia and painless swelling of the right testis, which were confirmed on examination, being the only abnormal findings. After investigations right orchidectomy was performed.

The results of routine investigations were as follows: liver function tests were within normal limits; the chest *x*-ray film and intravenous pyelogram were normal, while lymphangiography showed normal appearances of the para-aortic nodes with the right iliac nodes non-specifically enlarged. The results of investigations on hormone status are shown in the table.

Estimation/Test	Preoperative	10 days after operation
Human chorionic gonadotrophin (HCG) ..	80 µg/l	Not detectable
Carcinoembryonic antigen (CEA)	Not detected	Not detected
Alphafetoprotein (AFP)	Not detected	Not detected
Luteinising hormone (LH)	34·5 U/l	5·9 U/l
Thyroid function	Normal	Normal
SP_1	140 µg/l	26 µg/l

The level of SP_1 in tumour homogenate was greater than 300 ng/g. Histological examination of the tumour showed an anaplastic teratoma, grade III. No chorionic tissue was seen. The patient was given radiotherapy after orchidectomy and was well six weeks later. Further progress will be monitored clinically and by serial estimations of human chorionic gonadotrophin (HCG) and SP_1, but at six weeks HCG and SP_1 were undetectable.

Comment

SP_1 is one of a group of recently identified proteins synthesised by the human placenta,[1 4] and it has been given various names, including pregnancy-specific β_1-glycoprotein (PSβG),[3] and pregnancy-associated plasma protein C (PAPP-C).[5] The SP_1 antigen has been