areas of necrosis, multiple epitheloid and giant cell granulomas and diffuse lymphocytic infiltration consistent with tuberculosis. Step sections of the testis were normal. Three weeks following the surgery, repeat beta-hCG was normal (0.3 mIU/ml). Urine examination for acid-fast bacilli (AFB) and polymerase chain reaction for AFB were negative. The patient was started on four-drug anti-tubercular therapy.

Epididymal involvement in tuberculosis is through primary hematogenic spread to the globus minor which has a rich vascular supply. Diagnosis is based on the presentation and isolation of bacteria in the morning urine specimen or culture of material from discharging sinuses.[1] However, a pre-operative diagnosis can often not be made necessitating an inguinal orchidectomy with the suspicion of a testicular tumor.[2]

Beta-hCG is usually undetectable in normal adult men and elevated serum levels in any form of tuberculosis have not been reported. Affronti and DeBlaker demonstrated an association between mycobacterium tuberculosis and hCG in 1986.[3] They noticed the production of hCG like substances by two non-tumor associated, virulent mycobacteria apart from other species of tumor associated aerobic bacteria. They postulated this production to be a variable character among bacterial species and a sign of conservation of similar features seen in prokaryotes and unicellular eukaryotes which also produce hormone like substances. The histopathological diagnosis of tuberculosis makes this the first case of epididymal tuberculosis with elevated beta-hCG in the literature.

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SEROPREVALENCE OF HIV, HBV, HCV AND SYPHILIS IN VOLUNTARY BLOOD DONORS

Sir,

Screening of blood is now mandatory for many diseases and is undertaken routinely in blood banks. Many studies have been done on human immunodeficiency virus (HIV), syphillis, Australia antigen (HBsAg), hepatiis C virus (HCV) separately, but the knowledge about the interrelationship between these transfusion transmitted diseases (TTD's) is limited, the present study was undertaken to find out the prevalence and correlation between various infectious markers in healthy blood donors.

A total of 44064 blood units collected in department of transfusion medicine, Dayanand

Table no 1 showing the incidence a percentage of various infectious disease markers in healthy blood donors

	Year 2001 (Jan-Dec)	*Year 2002 (Jan-Dec)*	*Year 2003 (Jan-Oct)*	*Total/ %age*
Total units bled	15042	13830	15192	44064
HBsAg positive	159	85	46	290/0.66%
AntiHBc positive	40	08	01	49/0.11%
Anti HCV positive	224	161	98	483/1.09%
HIV ½ positive	13	16	08	37/0.084%
VDRL positive	120	154	99	373/0.85%

Medical College & Hospital, Ludhiana, during the period of January 2001 to October 2003 were studied. No professional or honorary donor was bled. Screening of all the blood units for anti HIV-1/2, HBsAg, anti HBc, anti HCV & syphillis was done by a fully Automated Microplate Elisa Processor (ARIO model) from SEAC RADIM group using commercially available kits. Any serum found reactive by the first assay was retested using a second assay based on a different antigen preparation and/ or different test principle. HIV seropositivity was seen to be 37/44064 (0.084%) and few of these were also confirmed by western blot test. HBsAg sropositivity was 290/44064 (0.66%), anti HBc positivity was 49/44064 (0.11%), anti HCV positivity was found to be 483/44064 (1.09%) and syphillis positivity was found to be 373/44064 (0.85%) as shown in Table 1. Also a definite correlation between positivity of HIV & syphilis was observed, but no correlation was seen between HIV and HBsAg/anti HBc/ anti HCV positivity. The positivity of anti HBc was found to be more than positivity of HBsAg suggesting the ability to detect Hepatitis B virus (HBV) infection in window period.

Otuonye et al[1] observed that amongst the 150 (21.5%) patients positive with sexually transmitted diseases, 82 (54.65%) were found to be positive for HIV antibodies. Patil et al[2] also observed a positive correlation between HIV & VDRL positivity. Therefore, serological screening for syphillis serves as a surrogate test for HIV infected donors. Jain et al[3] and Gosavi et al[4] found prevalence of anti HCV 1.57% in New Delhi and 15.9% in Mumbai, respectively. Risbud[5] found that there was lack of evidence for sexual transmission of hepatitis C virus in patients attending STD clinics in Pune, India. Kothari[6] observed that out of a total of 200 blood donors, 3% were positive for HBsAg, 1% for HIV, 2% for HCV and 4.5% for syphilis. So, taking into consideration rising prevalence of these infectious markers, a routine screening of all the donated blood units for anti HIV-1/2, HBsAg, anti HBc, anti HCV and syphillis should be done, which will assist blood transfusion services in improving blood product safety and donor recalls.

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PRACTITIONERS SECTION

MEGALOBLASTIC ANEMIA - PART I

ASHA SHAH

Megaloblastic anemia is most commonly due to deficiency of Folate or Cobalamin (vitamin B12). It is characterized by peculiar type of morphologic changes i.e. presence of megaloblasts or larger than normal sized precursors of red cells and granulocyte series in the bone marrow.

PHYSIOLOGY OF VITAMIN B12 AND FOLIC ACID

Vitamin B12

It is synthesized by micro-organisms. Higher plants and animals cannot synthesize it amd must depend on external sources. Milk, vegetables, cereals, pulses, etc. are poor sources of B12. Curd, cheese, and such milk products contain B12. Contamination of legumes by B12 synthesizing bacteria is another source of B12 for a vegetarian. Non vegetarian articles of food like liver, kidney meat, oysters, crabs, egg yolk etc are rich sources of B12. B12 is synthesized by colonic bacteria but this is not available for absorption and is excreted. Fecal contamination of food and water which is responsible for infections like amebiasis etc. is ironically a source of B12 for majority of population of our country!

The daily requirement of B12 is only 1 microgram.

B12 absorption requires the presence of intrinsic factor in the gastric juice. Hydrochloric acid and enzymes are required to split B12 from its combination with proteins in food. B12 is absorbed from lower part of ileum.'

Majority of B12 is stored in the liver (about 4-5 mg). Megaloblastosis occurs when the body B12 stores fall below 0.1 mg.

Folic acid

Folic acid is present in nearly all foods. Articles rich in folate are liver, yeast and green leafy vegetables. Prolonged cooking of food in large quantities of boiling water destroys folate and leads to folate-deficient diet. This is an important cause of dietary folate deficiency.

The daily requirement of folate is about 50 micrograms. Folate requirements increase in conditions with increased cell turnover for e.g. hemolytic anemias, malignancies, infections, etc.

Folic acid is absorbed from the entire length of the small intestine. Folate synthesized by the bacteria present in the colon is not absorbed.

The total body folate stores are about 5-10 mg and about one third of this is in the liver.

CAUSES OF B12 AND FOLATE DEFICIENCY