Non-Hodgkin’s lymphoma presenting as ‘chronic active
toxoplasmosis’

N.J. Dudley¹ and A.H. Balfour²

¹Infectious Diseases Unit, Seacroft Hospital, Leeds and ²The Toxoplasmosis Unit, Regional Public Health
Laboratory, Leeds, UK.

Summary: We report the case of a 58 year old man in whom an unusually prolonged infection
with Toxoplasma gondii was the presenting feature of an underlying non-Hodgkin’s lymphoma. This
case demonstrates the particular usefulness of the IgM ELISA test in monitoring disease activity.

Introduction

Toxoplasmosis is a recognized complication of lymphoma in both adults and children.¹⁻³ It may arise
de novo or secondary to reactivation of latent infection and has a tendency to infect the central
nervous system.⁴⁻⁷ Infection is more commonly associated with Hodgkin’s disease than non-
Hodgkin’s lymphoma.¹⁻³ The explanation for this may lie with the type of impaired immunity classi-

cally associated with each of these conditions, and the fact that immunity to toxoplasma depends principally on T-lymphocytes and to a much lesser
degree on antibody production.⁸ In Hodgkin’s disease there is classically a defect in cell-mediated
immunity.⁹⁻¹² Humoral immunity remains intact until advanced stages of disease have been
reached,¹³ although it has been shown that antibody production is impaired in splenectomized
patients following radiotherapy or chemotherapy.¹⁴⁻¹⁵ In contrast to this, non-Hodgkin’s lymphoma is classically associated with a defect in
humoral immunity, although in advanced stages cellular immunity may also be impaired.⁹⁻¹⁶

We report on a patient in whom a prolonged infection with Toxoplasma gondii was the presenting
feature of the lymphoma. This case illustrates how continuing disease activity may be missed by relying
on toxoplasma kit tests used in non-specialized laboratories. It underlines the importance of sending
sera for more specialized tests, especially when titres remain elevated and the illness does not follow
the anticipated clinical course.

Case report

A 58 year old man was referred to the infectious diseases unit with a 22 month history of generalized
lymphadenopathy, recurrent abdominal pain, lethargy and a toxoplasma latex agglutination (Eiken
Toxoreagent) (LA) titre of 1,024. The lymphadenopathy had developed over a few weeks at which
time initial investigations showed an absolute lymphocytosis of 8.7 x 10⁹/l, some of the lymphocytes
being atypical and suggestive of viral infection. Toxoplasmosis was diagnosed by a raised LA titre
of 1,024. Improvement occurred without treatment and the lymphadenopathy became less marked.

Four months later, he was admitted to the local hospital with acute abdominal pain. Pancreatitis
was diagnosed for which no precipitating cause was found. Prior to discharge a white cell count showed
a lymphocytosis of 6.8 x 10⁹/l and a repeat LA titre remained elevated at 2,048. Both this and the
original serum were sent for further testing at the Toxoplasma Reference Laboratory, Leeds. Rising
titres were reported in the dye test, 16,000 to 64,000 and the IgM enzyme linked immunosorbent assay
(ELISA),¹⁷ 141 to 186 EIU (Enzyme Immunoassay Units). These were reported as being consistent
with recent infection. During out-patient follow-up he had repeated bouts of abdominal pain thought
to be pancreatic in origin and persistent lymphadenopathy. At 12 months the LA titre was still 2,048
and the absolute lymphocytosis remained.

At 22 months his clinical condition had not improved so he was referred for further investiga-
tion. Toxoplasma serology showed a dye-test titre of 64,000 and a strongly positive IgM ELISA titre
of 108 EIU. Once again the absolute lymphocytosis was noted, although this time the blood film was

Correspondence: N.J. Dudley, M.B., Ch.B., M.R.C.P.,
City Hospital, Hucknall Road, Nottingham NG5 1PB,
UK.
Accepted: 30 June 1988

© The Fellowship of Postgraduate Medicine, 1988
suggestive of early chronic lymphocytic leukaemia or lymphoma. A non-Hodgkin's lymphoma of diffuse pattern of centrocytic-centroblastic cell type was diagnosed from a lymph node biopsy and marrow trephine. No treatment was required for the lymphoma. As elevated IgM levels are normally considered indicative of recent infection, a 3-week course of spiramycin 1 g b.d. was given. This produced an unusually rapid and dramatic reduction in the degree of lymphadenopathy with associated symptomatic improvement, although on stopping treatment he suffered a relapse which responded to a further 3-month course of spiramycin. The IgM ELISA fell quickly to levels of doubtful significance at 41 EIU after 3 months, although the dye-test titre remained high at 64,000. The absolute lymphocytosis persisted throughout treatment. Apart from an episode of suprapphalthic zoster, the patient has remained well during a 2-year follow-up period without any recurrence of abdominal pain or lymphadenopathy, and the IgM test has become negative at 15 EIU.

Discussion

Neither the clinical nor serological progression of the illness were wholly compatible with a diagnosis of acute toxoplasmosis. Lymphadenopathy persisting for almost two years is atypical, the natural history being one of spontaneous resolution of symptoms and lymphadenopathy within a few months. The diagnosis of the underlying lymphoma explained the presence of the lymphocytosis which had been incorrectly attributed to toxoplasma infection. It also explained why no precipitating cause was identified for the episodes of pancreatitis, this probably being a manifestation of toxoplasma infection as pancreatic involvement is a recognized finding in immunocompromised patients.

The serology was also unusual as a strongly positive IgM ELISA of 108 EIU is certainly abnormal at 22 months, this test normally being negative one year post infection. Specific antibody of the IgG class can persist for a number of years, although as this case well illustrates, in the presence of such elevated titres it is important to perform a specific IgM test in order to determine disease activity.

It would appear that the presence of the underlying lymphoma prevented an adequate immune response being mounted against the toxoplasma infection, resulting in a prolonged infection as indicated by persistent lymphadenopathy and elevated IgM titres.

Acknowledgement

We thank Dr J. Stevenson for allowing us to report on his patient.

References


Non-Hodgkin's lymphoma presenting as 'chronic active toxoplasmosis'.

N. J. Dudley and A. H. Balfour

doi: 10.1136/pgmj.64.757.883

Updated information and services can be found at:
http://pmj.bmj.com/content/64/757/883

These include:

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/