A CASE OF LEUKAEMIA SHOWING MIXED MYELOID-
LYMPHOID CHARACTERISTICS AND AN UNUSUAL
CHROMOSOME PATTERN

A. S. TODD, SHEILA M. WOOD, JANET ROBERTSON, AND R. A. G.
BROWN (Dundee) Many haematologists doubt the
occurrence of mixed leukaemia since earlier case reports
lack the precise data possible with modern haematological
methods. In a few instances, however, it is difficult to deny
the possibility of mixed leukaemia. In this report we
present the clinical, haematological, cytogenetic, and
necropsy findings in such a case.

The patient was a woman of 65 years. From the begin-
ing her blood and bone marrow showed leukaemic cells
of both lymphoid and myeloid series. Cytological studies
showed an abnormal extra chromatin mass in the early
myeloid cells. Cytogenetic studies showed the loss of a
suit E (17 or 18) chromosome in presumed myeloid
cells. The same cells showed multiple minute paired
chromatin bodies. Hitherto cytological and cytogenic
abnormalities of this type have been reported only in
malignant tumours of children and in a bronchial cancer.

The patient also showed bilateral ureteric duplication,
one of the multiple abnormalities associated with deletion of
a group E chromosome. In this case, however, the
somatic karyotype was normal female as judged by culture
of skin and lymphocytes.

The probability of both types of leukaemia occurring
together in a patient of this age and sex was calculated
from leukaemia mortality tables and was found to be
50 to 60,000 times less than the probability of either type
of leukaemia occurring alone. Nevertheless it seems very
likely that the case is one of true mixed leukaemia.

RECURRENT FAMILIAL INFLAMMATORY FIBROID POLYPS
OF THE SMALL INTESTINE

D. SPENCER (Exeter) Two cases, mother and daughter,
are discussed. The daughter has suffered three episodes of
ileo-ileal intussusception in five years. On each occasion a
bowel resection was necessary to remove a polyloid
tumour. The mother had a similar tumour causing an
intussusception removed in 1967.

In each case the histopathology of the tumours was
characteristic of inflammatory fibroid polyps, namely, an
ulcerated surface, a loose oedematous fibroelastic stroma,
and a uniform eosinophil infiltrate. These changes were
confined to the submucosa, the underlying muscle and
serosa being normal, clearly differentiating the polyps
from eosinophilic granuloma of the small bowel which is
diffuse, involving the full thickness of the bowel wall.

The histogenesis of the lesion is uncertain, many
authors accepting an inflammatory theory first pro-
 pounded by Helwig and Ranier (1953). Goldman and
Friedman (1967) suggested that they were neurogenic
tumours and Stout (1949) that they were haemangioepi-
cytomatous.

Subsequently the mother had three small polyps (two
gastric, one ileal) removed, which were basically the same
as the larger polyps, but without ulceration, oedema, or
eosinophils.

Therefore in our opinion the inflammatory changes are
secondary to ulceration, rather than the primary lesion.
The appearances of the smaller polyps are either hamar-
tomas or true neoplasms, of the latter the most likely,
histologically, and in view of the multifocal and familial
tendency are neurofibromata.

REFERENCES

A CYTOLOGICAL METHOD FOR ASSESSING THE TOPOGRAPHY
OF NEOPLASTIC CHANGE IN THE ENDOCERVICAL CANAL

D. M. D. EVANS (Cardiff) When a membrane such as a
nucleopore filter (GEC) is applied to the ectocervix, cells
from the cervical surface adhere to it; microscopical
examination of the stained membrane provides a method
for assessing the topography of a carcinoma in situ of the
ectocervix (Evans, 1967; Evans, McCormack, Sanerkin,
Ponsford, and Jones, 1969).

Membrane cytology has now been developed for
assessing the extent of neoplastic change in the endo-
cervical canal. A narrow cylinder of membrane is intro-
duced into the endocervical canal by means of the
Tenvovus endocervical probe (Evans, 1969). This has a
retractable cover to protect it from cell contamination
during its introduction and removal. Withdrawal of the
retractable cover brings the membrane into close contact
with the endocervical canal lining and the surface cells
adhere to it. Before allowing the preparation to dry it is
sprayed with aerosol fixative. It may be conveniently
transported to the laboratory in a plastic bag while still
on the probe. It is then carefully removed and processed,
the Papanicolaou-stained membrane being mounted on a
slide like a histological specimen. Microscopic examination
reveals the distribution of carcinoma cells over the
impression area. By marking the position of carcinoma
cell clusters by ink dots on the coverslip the extent of the
lesion can be estimated. Correlation of the endocervical
topographical cytology with the histological localization
of the carcinoma in situ as revealed by the subsequent
cone biopsy is being undertaken. The results are encourag-
ing.

REFERENCES
———, McCormack, Jennifer Sanerkin, N. G., Ponsford, P., and Jones,

TELEVISION SCANNING OF CERVICAL SMEARS: THE
QUANTIMET

O. A. N. HUSAIN (St Mary Abbots Hospital, London) This
image plane scanner, converted from its use in metal-
lurgy, has been shown to be able to register the large,
darkly stained nuclei of malignant exudates and scrape
smears. Operating by means of a single spot scan with
line memory, it is being used to test the hypothesis that
malignant cervical scrape and irrigation smears contain
enough of these large hyperchromatic malignant nuclei
to provide a means of alerting the cyto-
Though the series surveyed is still small, it is apparent that most if not all cases of carcinoma in situ are detected, but that certain glandular cancers and an occasional invasive squamous cancer might be missed.

The present instrument provides a 30-parameter measurement output per field in just under one second but its logic circuitry is not entirely appropriate to malignant cell scanning. A new instrument, more purpose built, is being constructed so that rapid scanning of linear cell tracks on film strip is possible. It is estimated that a three minute scan of around 50,000 cells should be possible if the problem of cell presentation and suitable contrast training is achieved.

It is suggested that a test profile may be necessary to detect the endometrial and other invasive cancers by adding the 6-phosphogluconate-dehydrogenase enzyme test to the cell samples of all women over the 45-age group.

LABORATORY TESTS IN VIRAL HEPATITIS

PATRICIA E. TAYLOR, A. J. ZUCKERMAN, AND W. D. BRIGHTON (London School of Hygiene and Tropical Medicine, and the National Institute for Medical Research, Hampstead Laboratories) Increasing evidence suggests that the Australia antigen is closely related to, if not identical, with the agent responsible for viral hepatitis (Levene and Blumberg, 1969; London, Sutnick, and Blumberg, 1969). This antigen was first described in 1964 by Blumberg who found that sera from two multiply transfused haemophiliacs contains an antibody which reacted with the serum of an Australian aborigine in immunodiffusion tests to form a single precipitin line. The aboriginal antigen was first considered to be another example of a serum protein pleomorphism, but this view was later modified with the discovery of its association with leukaemia, Down’s syndrome, and hepatitis (Blumberg, Gerstley, Hungerford, London, and Sutnick, 1967). Soon after Blumberg’s report, Prince (1968) described a similar closely related if not identical antigen, the SH antigen, in the blood of transfused patients during the incubation period and early acute phase of post-transfusion hepatitis.

A modified two-dimensional immunodiffusion technique, complement fixation, and immune electron microscopy are being used at the London School of Hygiene and Tropical Medicine to study the epidemiological distribution and morphological characteristics of the antigen. For all three tests, indicator sera containing antibody to the Australia-SH antigen have generally been obtained from patients who have been presumably hyper-immunized by receiving multiple transfusions of blood or plasma, some of it containing the Australia-SH antigen. On occasion, antibody to the antigen has also been found in persons who have not been transfused but who have had subclinical contact with cases of viral hepatitis.

The technique used for immunodiffusion and the source of reference reagents have already been described (Zuckerman and Taylor, 1969). With this technique, antigen has been found in approximately 40% of adult patients with acute viral hepatitis. Detectable antibody has not been found in sera collected from these patients during convalescence. The presence of the antigen is usually transient during the acute phase of the disease. However, fresh samples of serum collected in 1968 and 1969 from a blood donor who was identified in 1951 as a 'silent' carrier of the virus of serum hepatitis have been found to contain the antigen (Zuckerman and Taylor, 1969). This indicates that, on occasion, a long-term carrier state may develop. Furthermore, in two instances, both antigen and antibody have been present at the same time in the same specimen of serum.

A standard microtitre complement fixation system (Sever, 1962) is also being used for the detection of Australia-SH antigen. Preliminary results indicate that this technique is somewhat more sensitive than immunodiffusion. Very high antigen titres, up to 1:2,048 or more, are found. With some specimens, a prozone effect is noticeable.

Immune electron microscopic studies, carried out in collaboration with Mrs J. D. Almeida and Professor A. P. Waterson of the Royal Postgraduate Medical School, have revealed characteristic particles which correspond to the Australia-SH antigen (Almeida, Zuckerman, Taylor, and Waterson, 1969). The main antigenic constituent is a roughly spherical particle approximately 200 Å in diameter. A considerable degree of pleomorphism exists and many tubular and aberrant forms are seen. The tubular forms may extend up to several thousand Ångstroms in length, along which can be seen a periodicity of approximately 30 Å. The diameter of these tubular forms is approximately 200 Å.

In addition to the above studies, intensive efforts are being made to cultivate the responsible agent of viral hepatitis in tissue cultures of human embryonic liver, as primary cultures of differentiated parenchymal cells and as a continuous cell line made up principally of spindle-shaped cells. Cultures of tissue obtained from adult liver by percutaneous needle biopsy are also being used. In addition, immunofluorescent methods similar to those described by Millman, Zavatone, Gerstley, and Blumberg (1969) are being applied for the detection of antigen in hepatic cells obtained by needle biopsy of the liver from patients with the antigen in the serum. Future studies include the development of other serological methods, including passive haemagglutination and immuno-electrophoresis, for the study of the antigen.

REFERENCES


Levene, C., and Blumberg, B. S. (1969), Nature (Lond.), 221, 195.


THE BACTERIOLOGY OF TRAVELLER’S DIARRHOEA

B. ROWE AND JOAN TAYLOR (Salmonella Reference
Television scanning of cervical smears: the quantimet.

O A Husain

doi: 10.1136/jcp.22.6.743-d

Updated information and services can be found at:
http://jcp.bmj.com/content/22/6/743.4.citation

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/