Fertility in a male with trisomy 21

In 1989, we reported the first fully documented case of an apparently non-mosaic male with Down's syndrome fathering a pregnancy. This pregnancy subsequently miscarried about nine weeks after a CVS procedure.

The same couple returned to the Genetics Centre early in 1991 in the first trimester of pregnancy. A chorion villus sample was again obtained (Mr R. Taylor) and this showed a normal karyotype. DNA samples from the CVS were analysed with the highly polymorphic probes D7S21 and D17S56, the results confirming that paternal alleles for both markers in the CVS were also present in the putative father. This second pregnancy proceeded to term, and a normal boy has now been born to this couple.

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Clinical consequences of deletion 1p35

We would like to make a correction to our paper previously published in the journal. Upon analysis of another blood specimen at higher resolution, we found a balanced translocation. The corrected karyotype is 46,XY,r(1)(p34.3q25).

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Masillonasal dysplasia (Binder's syndrome) and chondrodysplasia punctata

In a recent letter to the editor, Sheffield et al. discussed the true relationship between maxillonasal dysplasia (Binder's syndrome) and chondrodysplasia punctata. The authors noted that the number of patients diagnosed as chondrodysplasia punctata had been underestimated because punctate epiphyses disappear with age, and they suggested looking at old radiographs that had been performed in infancy.

We have another suggestion. If the patient is a male, it would be advisable to examine the hands of his maternal relatives, especially uncles and nephews, to look for brachydactyly. Moreover, if the disease seems to be inherited in an X linked recessive fashion, an analysis of Xp could be indicated as the gene CDPX 1 has been mapped to Xp22-32. In one familial case, Petit et al. found an interstitial deletion in Xp22.3.

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BOOK REVIEWS

All titles reviewed here are available from the BMJ Bookshop, PO Box 295, London WC1H 9TE. Prices include postage in the UK and for members of the British Medical Overseas, but overseas customers should add 15% to the value of the order for postage and packing. Payment can be made by cheque in sterling drawn on a UK bank, or by credit card (Mastercard, Visa, or American Express) stating card number, expiry date, and full name.


In this book, the Hungarian author reviews some of the clinical and scientific publications, published up to 1989, concerning the association between genetic factors and malignant disease, with particular emphasis on congenital chromosome aberrations and tumour development.

In the first chapter the nature and frequency of congenital chromosome aberrations associated with cancer predisposition and associated clinical symptoms are described. The relationship between induced chromosome aberrations, chromosome instability, oncogenes, fragile sites, and malignant disease is discussed in chapter two. Chapter three is very short and deals with the topic of genetic counselling for cancer patients and their families. An attempt is made to give advice to patients and their families regarding the risk for cancer development in the family.

The final chapter describes a number of culture and banding techniques for the preparation of chromosomes from various tissues. The classification of structural chromosome aberrations and the nomenclature (ISCN 1985) used to describe them is included.

Much work has been done over the past few years in this fast developing field and a review of this subject is timely. Unfortunately, much of the data presented here are not up to date and some of the experimental data derive mainly from the author's own laboratory. There is a wealth of publications available concerning congenital chromosomal aberrations and cancer predisposition and a number of important new developments have not been included in this volume. For instance, the association between Beckwith-Wiedemann syndrome and Wilms' tumour and the suggestion of two possible loci for Wilms' tumour on chromosome arm 11p (Mannens et al. Hum Genet 1988;8:41–8) are not mentioned. Also, many of the incidence figures quoted for particular disorders relate only to Hungary and therefore may not have much relevance for a wider readership. It must be mentioned, however, that there may be problems in obtaining some current journals in eastern Europe which may have contributed to this lack of up to date references.

A number of serious scientific inaccuracies are also present in this book. The author states incorrectly that carriers of constitutional 13q14 deletions usually develop unilateral retinoblastoma rather than bilateral tumours. With describing the t(9;22) translocation in chronic myeloid leukaemia (CML) the author states that the breakpoint on 9q34 is located close to the c-abl oncogene. However, it is known that the breakpoints on 9q34 are scattered and can be located both 5' of the first c-abl exon as well as located within the c-abl oncogene (Heim and Mittelman. Cancer cytogenetics. New York: Liss, 1987). It is also stated that in CML the c-abl oncogene is associated with the immunglobulin heavy chain locus. This statement is incorrect as the t(9;22) translocation involved in CML places c-abl next to the breakpoint cluster region on chromosome 22 (Shivelman et al. Nature 1985; 315:550–4) and not in association with the immunoglobulin heavy chain locus.

The translation into English is poor and consequently the book is difficult to read in places. Also, the quality of many of the figures, including those reproduced from other publications together with ones from the author's own laboratory, is very poor. For example, in a figure showing deletions of chromosome 13 involved in retinoblastoma it is very difficult to see the GTG banding pattern on the chromosome. Furthermore, the poor reproduction of figures on pages 52 and 53, depicting induced chromosome aberrations, makes their interpretation difficult. Finally, the presentation of Q, G and R bands reproduced from the Paris System (1971) has been altered by the addition of extra and incorrectly positioned light G bands on the long arms of chromosomes 13,14,15, and 16.

The book is primarily aimed at paediatricians, oncologists, and medical geneticists. However, as it is sadly out of date, it will only be useful as a general introduction to the topic. If greater detail is required by the reader then it will be necessary to read more up to date publications.

ERIKA L D MITCHELL


This book presents an overview of molecular biology in relation to fundamental oral and
dentate research. Three distinct themes, den-
tal hard tissues, oral microbiology, and sal-
iva, are covered. Four chapters relate to the
molecular biology of the dental hard tissues.
These include genetic control of the
dentin, enamel proteins, and immunolu-
lisation proteins secreted by the dentinal
tissues and their expression, and, lastly, dentinal
enzymes and the expression of molecules there-
in. One chapter is devoted to the molecular
genetics of oral bacteria and the microbial
settlement of dental caries and periodontal
diseases. The remaining section deals with
salivary composition, with separate chapters
on salivary macromolecules, salivary proteins,
and the proteome.

Chapters are contributed by distinguished researchers
in each field. Some chapters appear somewhat
subjective but this reflects the relative con-
tribution of the author(s) to their subject of
interest. The comprehensive list of references
at the end of each chapter will provide a
valuable source of further reading for those
seeking to further their knowledge of the field.

Over the last 20 years the purely descriptive
field of cytogenetics, and the reductionist,
analytical field of molecular biology have
steadily approached each other until it is
almost time for them to celebrate their wed-
ing. Although it is not yet possible to con-
struct a detailed model of chromosome organi-
isation, the ways in which genes are
organised in chromosomes and chromosomes in
nuclei are beginning to be well under-
stood. The present volume makes an
appropriate appearance. However, the value
of this book as a contribution to this impor-
tant field is debatable.

To be able to expect a series of
detailed descriptions and evaluations of tech-
niques at the leading edge of chromosome
research, whereas what we find is a mixture
of review articles (some quite excellent) and
technical chapters, with the majority of the
latter lacking sufficient detail to make them
an adequate guide to implementing the tech-
niques described. There is also a problem
(possibly arising from the delay between the
submission of the manuscripts and publica-
tion) with material becoming outdated. Very
few of the references cited by most of the authors
are later than 1989, and in such a rapidly
changing field, this is usually too long ago.

In a volume of such diverse character, I
feel that the best way to give an idea of the
value of the book is to run briefly through the
chapters, with a brief description and com-
ment on each. The book is divided into three
sections: Molecular Techniques, Cytogenetic
and Linkage Analysis, and Cel-
lar Techniques respectively.

The first section begins with a review of
'Molecular diagnostics' (Summar and Phil-
ips), which is detailed and well written, my
only criticism being that mentioned above,
that there is no reference more recent than
early 1989. Chapter 2 is a chapter on
'Cloning and analysis of large DNA mol-
ecules' (Scherer and Tsui). This is primarily
concerned with YAC technology and the
radiation hybrid analysis of human DNA by
electrophoresis (PFGE). There is thorough
coverage of this important area, but, al-
though protocols are given, they tend to lack
the precise details necessary to translate them
into successful laboratory procedures. The
next chapter is a detailed report of a single
piece of work involving the 'Molecular analysis
of a single chromosome sub-band' (Yunis). While
the authors are to be congratulated for the
work involved in molecular cytogenetics, it is not sufficiently
universal for the reader to be able to apply it to similar
problems in a different system. Chapter 4
describes a method for purifying DNA frag-
ments by immobilised oligonucleotide
probes as a stage in high efficiency cloning
(Wada, Tsurai, and Suyama). Although the
authors state that I FIA is not common prac-
tice (Nanda, Schmid, and Epplen). This is
an excellent chapter, reporting a new approach
in good and adequate detail. Chapter 6,
on the 'Analysis of flow-sorted chromosomes'
(Shimizu and Minoshima) has useful proto-
cols, but limited application owing to the use
of a single fluorochrome and laser, with the
limited resolution available with this system.

Again, the most recent references are 1989.
The last chapter in this section covers
'Pulsed-field gel electrophoresis', and I am
grateful to John Maule for reading it and
providing me with his comments. Although
this is an excellent chapter, reporting a new
approach, it provides a basic introduction to
PFGE, and the experimental protocols are not sufficiently
detailed or accurate to allow a novice to carry
them out. Some of the figures are of poor
quality and the legends are, in some cases,
inaccurate, while some of the information is
out of date, and some of the cited references
are inappropriate. Although the list of ref-
ences is extensive, there is again nothing after
1989.

The second section begins with a chapter
on the 'Analysis of chromosomal alterations
in human solid tumors' (Meese and Trent).
This is a useful chapter on a complex subject
point out that classical analysis of complex
translocations by banding is subject to error,
and chromosome painting by fluorescent in
situ hybridisation (FISH) is often shown very
different conclusions and detects transloca-
tions overlooked by classical analysis.
Chapter 9 is a comprehensive review of the
whole subject of 'Fragile sites on human
chromosomes' by Sutherland, the doyen of
the field, while chapter 10 is again a review,
in this case of 'Immunocytogenetics', again
by two of the leading exponents of the field,
Haaf and Schmid. It is primarily a historical
survey of the development of the subject,
from the early 1970s up to 1989. The remain-
ing three chapters in this section cover as-
pects of gene linkage studies. As D'Eustac-
chio, the author of the first of these
('Molecular linkage genetics of the mouse')
says, construction of linkage maps is not a
simple matter. However, it is easy to see why
these chapters, however sound they may be
(and I certainly have no criticism of this one),
are doing in a book with the title this one
bears. The second of the linkage chapters
discusses 'Genome duplication and compar-
active gene mapping' (Nadeau), an interesting
and important subject. However, the data are so
poorly presented, either because of poor
proof reading or errors in composition,
that the value is much reduced. The final
chapter in this section, 'Human linkage
analysis of chromosomal translocations
(Weeks) presents an advanced mathematical
and statistical approach to the topic, likely to
be of value to dedicated constructors of
maps.

The final section, on 'Cellular techniques',
begins with the editor's own contribution, on
the 'Arrangement of chromosomes in human mitotic cells'. This describes the construc-
tion of chromosome spreads (cytogenetics),
but this reflects the relative con-
tration of value to the reader to apply it to similar
problems in a different system. The next chapter
reviews the use of 'Cloning and analysis
of large DNA molecules' by electrophoresis
(PFGE) (and Pulsed-field gel electrophoresis)
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