LETTER TO THE EDITOR

Maxillonasal dysplasia (Binder's syndrome) and chondrodysplasia punctata

The recent article by Quarrell *et al*[1] on 'Maxillonasal dysplasia (Binder's syndrome)' made various suggestions concerning aetiology and proposed the use of the term Binder phenotype. They stated that there is a phenotypic overlap with the mild form of chondrodysplasia punctata that we described some years ago.[2] This statement is quoted from Horswell *et al*[3] who found two patients with chondrodysplasia punctata in the patients they described as having Binder's syndrome.[3] We know that they underestimated the number of chondrodysplasia punctata patients as we have studied many of their patients in our recent study of this disorder.[4 5] The underestimation of the contribution of chondrodysplasia punctata to the aetiology of the Binder phenotype arises because the Binder phenotype classically presents as an adolescent or young adult concerned about facial features to maxillofacial or craniofacial surgery units. Non-facial features may be overlooked and the age of presentation means that the diagnostic radiological findings of puncta have disappeared and so this diagnosis is often not considered. Puncta usually cannot be verified at the age the patient presents for facial surgery because of their resolution with age.[2]

There is a paucity of published reports describing the association of the two conditions, but we have shown that many cases of the Binder phenotype are in fact the mild type of chondrodysplasia punctata.[4–6] The similarity in facial features of the two diagnoses has also been noted.[7]

The initial suggestion that many cases of Binder phenotype represented the mild form of chondrodysplasia punctata came from experience in working in a craniofacial unit where the Binder phenotype was quite a common diagnosis.[6] The facial features were judged to be exactly as expected in older cases of mild chondrodysplasia punctata.[2] The diagnosis of Binder phenotype was always made on facial features by the plastic and oral surgeons. In a series of 10 patients we set out to assess how many patients had had *x* rays in early life for whatever reason and, if they had, to see if puncta were found.[6] Only one patient was found to have early *x* rays and not only were puncta seen but the clinical diagnosis of chondrodysplasia punctata had been made and appeared in the hospital records. This diagnosis had been forgotten by the time the patient presented for facial surgery and the new diagnosis of Binder phenotype was then attached. Examination of a photograph from this baby confirmed the typical facies which is diagnostic of chondrodysplasia punctata in the infant.[2 6]

In the cases described by Horswell *et al*,[3] the patients came from the same hospital where the mild form of chondrodysplasia punctata was described.[2 3] The usual procedure of our genetics department is to refer patients with chondrodysplasia punctata, who require craniofacial surgery, to the craniofacial clinic with a referral diagnosis of chondrodysplasia punctata. This was the case with five patients in the report of Binder phenotype of Horswell *et al*,[3] only two of whom were recognised in the report as having puncta seen on *x* ray.[3] This report also included another patient who had a history of exposure to warfarin during pregnancy. As maternal warfarin ingestion is a known cause of chondrodysplasia punctata,[8] this brings the total number of known chondrodysplasia punctata patients in the report of Horswell *et al*[3] to six and not two as they reported. It is also not surprising that other patients had cervical vertebral abnormalities of the type seen in older patients with vertebral involvement of chondrodysplasia punctata. Thus, the number of patients with proven chondrodysplasia punctata has been underestimated by Horswell *et al*[3] and the age of diagnosis and the limited *x* rays available made it impossible to assess this diagnosis in others. As mentioned above, most patients with the Binder phenotype have not had *x* rays at an earlier stage in life and therefore puncta cannot be seen at the age they present to plastic surgeons. In a study of chondrodysplasia punctata the only residual findings that were seen in an older age group were terminal phalangeal hypoplasia of the hand (in some patients only and sometimes in some digits only) and patchy distortion of vertebrae which are residual findings of vertebral clefting.[4 5] The *x* rays in a patient described in the article of Quarrell *et al*[1] were kindly forwarded to us and they show hypoplastic terminal phalanges of the middle and ring finger in the hand radiograph that was available. There was some anterior wedging of the fifth to seventh thoracic vertebrae. In the skull view there was an underdeveloped body of the third cervical vertebra and a misshapen dens. Earlier films are not available, but the above findings (in the patient used by Quarrell *et al*[1] to show Binder phenotype) are consistent with the residual changes of chondrodysplasia punctata.[4 5]

Thus, it appears that many cases of the Binder phenotype are actually the result of the mild type of chondrodysplasia punctata, which is a symmetrical type of lesion.[5] The fact that they present first for plastic surgery suggests that their clinical features as an infant were mild and often unrecognised, and as such they probably represent the mildest type of the spectrum of chondrodysplasia punctata. As yet the genetics of the condition is unclear and this knowledge does not change the conclusion of the article by Quarrell *et al*[1] regarding this. However, if one assumes that most patients with Binder phenotype have chondrodysplasia punctata then secondary causes of chondrodysplasia punctata should be eliminated. We have recently found a second patient labelled as Binder phenotype in the craniofacial unit who had a maternal history of warfarin ingestion during pregnancy. The two patients exposed to warfarin were of normal intelligence and stature and only had maxillonasal dysplasia as the manifestation of warfarin embryopathy. Thus the Binder phenotype may be the result of a number of causes, both genetic and non-genetic, but has in common the fact that chondrodysplasia punctata appears to underly many cases of the Binder phenotype.

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BOOK REVIEW

Prenatal Diagnosis and Prognosis. Ed R Lilford. (Pp 245; £39·50.) London: Butterworth Scientific Ltd. 1990.

The editor's stated aim for this book is to concentrate on the prognosis rather than the diagnosis of disorders and abnormalities detected prenatally, since it is the prognosis for a disorder which influences parents' decision making, and current publications often lack this type of information. The book is highly successful in this regard, providing detailed, authoritative, and clear summaries of what is known about the outcome for malformations and chromosomal abnormalities detected prenatally. The book does not cover metabolic disorders, but includes sections on DNA technology and risk calculation, sampling procedures, and decision making.

The book starts with chapters on antenatal ultrasound diagnosis of craniospinal defects, and extra-craniospinal anomalies, with a separate chapter on renal tract anomalies. The authors take the useful approach of starting with an ultrasound abnormality and then discussing diagnostic possibilities and prognosis. Extensive reviews of published reports are presented and information regarding prognosis summarised in a form which is immediately useful to the clinician 'on the spot' who may not have time to review published reports personally, or may not have rapid access to the relevant ones. The authors give recommendations for further investigation and management, based on their own and reported experience, and several algorithms are included.

A chapter on screening for Down's syndrome leads the reader through the mathematical complexity of calculating composite risks and interpreting the results of multiple screening tests, providing information essential to clinicians setting up an antenatal screening programme or counselling patients. There is then an introductory chapter on chromosomes which provides a clear explanation of terminology and chromosome structure for those unfamiliar with modern cytogenetics. This is followed by an excellent chapter on prenatal diagnosis of chromosome anomalies which covers the identification of pregnancies at high risk, and the interpretation of results, including addressing the particularly difficult problems of identifying confined placental abnormalities and assessing the likely clinical significance of mosaics, de novo structural rearrangements, and supernumerary markers. This is the longest chapter in the book (61 pages) and contains a wealth of useful information, detracted from only by the complexity of the text subheadings.

Three subsequent chapters examine the role of recombinant DNA technology in clinical practice: an introduction to modern genetics; a description of current technology for DNA diagnosis; and an explanation of risk calculation using results from DNA studies. These chapters provide a very well presented outline of this rapidly developing area, essential reading for those not familiar with this aspect of prenatal diagnosis.

Chapters on invasive diagnostic procedures and decision analysis in prenatal diagnosis conclude a book that is highly informative and enjoyable to read. The multi-author text is well written throughout and there are many excellent illustrations and tables as well as algorithms suggesting management schemes. This book usefully fills a gap in the market and should be highly commended to all clinicians involved in any aspect of prenatal diagnosis.

HELEN KINGSTON

NOTICE

Clinical genetics: recent advances

The British Council are holding a one week course on 'Clinical genetics: recent advances' on 23 to 28 March 1992 at the Institute of Medical Genetics for Wales, Cardiff. Further information can be obtained from Courses Department, The British Council, 10 Spring Gardens, London SW1A 2BN. Tel: 071-389 4406/4264/4252.

Association of Clinical Cytogeneticists

The annual scientific meeting of the ACC will take place at Earnshaw Hall, University of Sheffield on 2 to 4 July 1991. The Scientific Sessions will include papers on aspects of clinical cytogenetics, molecular genetics, and the cytogenetics of malignant disorders. The guest lecturer will be Professor M Greaves who will be talking about aetiological mechanisms in leukaemia. For further information contact Mrs I Barnes, Centre for Human Genetics, 117 Manchester Road, Sheffield S10 5DN.