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Contemporary Themes

Role of the School Eye Clinic in Modern Ophthalmology

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Summary

Routine sight tests for children at intervals throughout their school career are clearly important; three-quarters of those referred to the school eye clinics in this area had some ocular defect. It is probably no longer necessary for myopic schoolchildren to be treated by a consultant ophthalmologist after their initial examination.

Forty-five per cent. of children referred to the school eye clinics in this area were found to have squint and/or hypermetropic/anisometropic/astigmatic refractive errors. Priority should be given to this group because of the association of amblyopia with these conditions. Their treatment requires closer association with the hospital ophthalmic department, perhaps even complete unity. Transfer of children at present seen in the school eye clinic to a hospital-based "children's eye clinic" would

also fit in with a unified health service administration structure and be better placed to indicate, evaluate, and control future developments towards the prevention of amblyopia.

Introduction

School eye clinics are an integral part of the medical services provided for schoolchildren and yet the way they are run has hardly changed since their inception in 1910. The role of these clinics in the overall picture of the ophthalmic services probably varies from area to area.

The high birth rates in Northamptonshire draw attention to the medical problems of children, putting pressures on the resources (not least in manpower) available to deal with them. In the new town of Corby, as in other new towns, a high proportion of the population is in the preschool and school age groups. This is reflected in the patients seen in the hospital and local authority ophthalmic clinics where problems of refractive errors, squint, and amblyopia predominate. It became necessary to review the organization of the school eye clinic to decide on priorities. This gave a chance to review the place of this

particular clinic in the overall ophthalmic services provided for an individual area.

Patients and Methods

The diagnosis was recorded of each new case referred over a period of one year to the school eye clinics at Corby and Kettering, which are operated by the same personnel. None of these cases had received ophthalmic treatment before. A record was also made of the presence or absence of a family history of squint, "cast," or "lazy eye" in each case, and the age at which each case was detected. If there was doubt about the family history—for example when the child was adopted—it was recorded as negative.

A child with a refractive error of $+2.00$ D.S. or more was recorded as being hypermetropic. Anisometropia (a significant difference in the refractive error of the two eyes) was recorded if there was >1.00 D.S. difference or more than >1.50 D.Cyl. difference in the refractive error between the two eyes. >1.50 D.Cyl. was taken as a significant degree of astigmatism.

Results

Of 327 children seen during the year an abnormality was found in 243 (see table). There was a positive family history of squint or amblyopia in 55% of cases in the group containing children with squint, hypermetropia, and hypermetropic anisometropia or astigmatism. The age at which children were first seen is shown in figs. 1, 2, and 3. Among children with squint or related defects the proportion reaching the clinic after the age of 7 was 43%, and 46% of these had a positive family history of similar problems.

Proportion of Children with Visual Defects in whom there was a Positive Family History

Diagnosis	No.	Positive Family History	%
Myopia	96	27	28
Squint	48	28	58
Hypermetropic anisometropia	57	30	53
Hypermetropic astigmatism	28	15	54
Hypermetropia	12	7	58
Miscellaneous*	2	—	—
No abnormality	84	39	46
Total	327	146	44

* One case of congenital nystagmus and one case of dendritic ulcer.

FIG. 1—Ages at which children with myopia were first seen.

Discussion

The original purpose of this investigation was to review the school eye clinic from the point of view of the work load, bearing in mind that an excessive number of old patients re-attending delayed examination of new ones. Nothing abnormal was detected in a quarter of the new cases, while a further 29% were diagnosed as having uncomplicated myopia. These children

FIG. 2—Ages at which children with hypermetropic refractive errors and/or squint with positive family history were seen.

FIG. 3—Ages at which children with hypermetropic refractive errors and/or squint with no family history or a doubtful one were first seen.

merely require refraction, the prescription of spectacles, and a periodic check on their visual acuity and on their glasses. They can be adequately treated by an ophthalmic optician or by an ophthalmic medical practitioner under the supplementary ophthalmic service and do not require the attention of a consultant ophthalmologist. The instillation of cycloplegic drops used to be thought advisable for proper refraction of these cases, and as the use of these drops formerly required the presence of a medical practitioner the convention developed that opticians could not adequately treat them. This no longer applies, since the Faculty of Ophthalmologists has recently agreed that ophthalmic opticians may now use cycloplegic (and other) drops.

The striking finding in this review of a year's work is that nearly half of the children with squint or with refractive errors associated with squint and amblyopia were over the age of 7 when first detected. At that age most of these children were past the stage when there is any real hope of improvement with treatment. There is a family history of related eye defects in 55% of children with these defects: surely more could have been detected before school age or in their first few months at school? The results are more of an indictment of the efficiency of the organization for sight-testing schoolchildren than of the school eye clinic itself, but they undoubtedly draw attention to the problems of screening children for ocular defects.

In this particular branch of ophthalmology there must be a close working relationship with the public health authorities, not least because they carry out the sight tests at school and are responsible for screening tests in children of preschool and school age group generally. Further advances in the treatment of squint and amblyopia are most likely to arise from detection of the squinting child before he actually develops a squint and the detection of many of these amblyopic schoolchildren before they go to school.

During this investigation it seemed opportune to consider other aspects of the service provided by the school eye clinic—in particular, the records in use and its possible role in future developments in prophylactic treatment of squint and ambly-

opia. The use of a common set of records for all the children referred either to the school clinic or the hospital requiring treatment for squint or amblyopia would be administratively much easier and be more sensible from a clinical point of view. In this particular area a child with a squint and amblyopia detected as a result of a sight test at school could have three sets of records each kept in a different place—for example, a school clinic card, hospital records (if operation was necessary), and separate notes for the orthoptist. Furthermore, it is quite common for a child to attend both the hospital and the school eye clinics. For example, he could be referred before he goes to school to the hospital clinic with a squint, only to default and reappear at the school clinic after his amblyopia had been picked up again as a result of a sight test done at school. In such circumstances a second round of attendances would start on a second set of records, and much extra work by the ophthalmologist and orthoptist and unnecessary attendances for both parent and child could be prevented by the initial set of records being readily at hand.

The idea of one set of records for all these children, together with the concept that they should all be seen in the same clinic, led to our thinking that it would be better to have a special

children's eye clinic. This clinic would draw cases referred both from the general practitioners and as a result of sight tests at school. Furthermore, the traditional orthoptic record sheets have been dispensed with and all notes kept on the ophthalmologist's records.

The idea of a children's eye clinic is not an entirely new one because in some parts of the country—for example, Northampton—children with ocular defects detected at a school eye test are seen in a "school clinic" held in the hospital eye department, although they are not recorded on hospital records. This applies, however, only to those children who live in the borough of Northampton. Children living just outside the borough at present come under the County Health Authorities and are referred to a "school eye clinic" held elsewhere in the town of Northampton. Rationalization of anomalies such as this should come with the imminent merger of the three divisions of the health services. This will mean that advances in preventive medicine will have to originate from a single source and probably, in the case of specialized subjects such as this, this would be the hospital part of the service. The concept of a children's eye clinic centred in the hospital eye department seems to be ideally suited to fill this role.

Hospital Topics

Technique of Oil Myelography

JAMES BULL

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Some medical men regard myelography with apprehension and most patients are apparently told by their friends that it is a frightening procedure. If the examination is properly conducted both parties are wrong. Like many techniques in medicine, history plays a large part in its development or lack of development. Just over 50 years ago Sicard struck upon this method of investigation quite by accident. Two or three millilitres of iodized oil (Lipiodol) was introduced inadvertently into the spinal theca by one of his assistants. Relieved to find that the patient suffered no ill, Sicard tilted him head-downwards and noted that the oil flowed along the theca. Thus oil myelography was born. Ever since that time there has been a tendency in many places to introduce the oil blind after lumbar puncture in the ward, and to use about the same small quantity as Sicard. For many years his method was used to define a complete block in the spinal theca and for this purpose 3 ml was quite adequate. Over the years, however, myelography came to be used for several other purposes including particularly the diagnosis of protruded intervertebral discs when the profession became aware of this condition about 35 years ago.

The main factor inhibiting the use of more oil has been the tradition in Britain not to remove it because by using small quantities it seemed unnecessary. On the other hand, medical men have been reluctant to introduce a quantity two, four, or six times as large as Sicard used, and still leave the contrast in the patient knowing that it is very slowly absorbed and sometimes

hardly at all. In the United States it has been the practice for many years to at least attempt to remove the contrast substance (however small a quantity was injected) for medicolegal reasons. It was in that country that the trend to use larger quantities developed, knowing full well that it could be removed afterwards.

Perhaps the most important factor leading to advances in technique has been the advent of the image intensifier and television screen. Nowadays, wherever this facility is available, the whole examination should be conducted in the x-ray department. Indeed it can be so conducted with the old-fashioned fluorescent screen, but less satisfactorily.

Details of technique

Unless the patient is apprehensive he or she requires no premedication. Having first explained the procedure to the patient and disillusioned him as far as possible of its horrors, one places him face-down on a tilting x-ray table with a pillow under his lower abdomen and pelvis to reduce the lumbar lordosis. The lumbar spine is then examined on the television screen and a suitable site chosen for the lumbar puncture. Any of the spaces from L2/3 to L5/S1 can be used. It is useful to place a heavy metal marker (such as a Spencer Wells forceps) across the spine at the site one intends to puncture, the level of the iliac crest being a less accurate means of determining a particular spinous process. It is also helpful to have a choice of level of puncture as one naturally wishes to introduce the needle at a site other than where the lesion is suspected.

Having chosen a suitable spinous interspace, a small quantity of local anaesthetic is injected into the skin and deeper tissues.