circulation in the opposite limb and whether or not it is severe enough to be likely to cause discomfort at an uneconomic distance. The only certain way to solve the problem of whether either leg will be responsible for immediate failure after tenotomy is by employing the Hunterian method. The patient is walked until he is halted by claudication in the leg on which tenotomy is contemplated. Claudication is then abolished by blocking the nerve supply to the gastrocnemius and soleus with lignocaine and the patient is walked again. With relief of pain in the group on which tenotomy is under consideration, the behaviour of the limbs on exercise can be studied.

Osteoarthritis.—It is not surprising to find degenerative changes in joint cartilage in the age period in which degenerative changes in arteries are most often present. Osteoarthritis in the knee-joint is not uncommonly a co-partner with arteriosclerosis in limiting a patient's activity. A minor degree of arthritis may pass unnoticed in a patient whose walking is severely reduced by intermittent claudication. If, however, the claudication is relieved, permitting increased activity, the hitherto quiescent arthritis may become an even more intractable disability than the claudication. It is very disappointing to find that the calf pain which hitherto limited walking to 200 yards (183 metres) is replaced by an equally crippling discomfort at 300 yards (274 metres). The risk of such an occurrence is particularly great after tenotomy of the tendo Achillis on account of the slight degree of instability of the knee following defunctioning of the gastrocnemius. Tenotomy may convert a subclinical degree of osteoarthritis of the knee-joint, hitherto painless, into a crippling disability by depriving the joint of the postural support of the gastrocnemius muscle. One-third of our late failures were due to osteoarthritis. In some patients the onset of osteoarthritis is unpredictable, but probably half of our failures due to osteoarthritis could have been avoided by more careful selection.

Bilateral Tenotomy.—Owing to the possibility of instability and thigh pain we feel that this should very rarely be done. It should certainly not be done with only a short interval between the two operations. We feel that a possible indication may be the late occurrence of calf pain in the other leg of an already tenotomized patient, whose previously sectioned tendon has rejoined sufficiently to allow him some moderately powerful plantar flexion on that side.

Angina, Emphysema, and Bronchitis.—Disappointment after alleviating exercise pain in the calf muscles is not infrequently due to breathlessness from bronchitis or emphysema, or anginal pain limiting activity. As it happens, we have no examples of either of these conditions in our series of tenotomies, though this unfortunate sequel has been seen after relief of claudication by other means. Great care, therefore, should be taken to exclude, so far as possible, patients in whom there is a risk of these conditions limiting activity.

In practice the decision for or against tenotomy is made by weighing the likelihood of further arterial insufficiency against the patient's desire to walk and his willingness, after being fully informed of the hazards, to accept the risks of failure. With careful selection our recent results have been more pleasing. In our last eight patients, five have had complete relief, with an average follow-up period of three years. There were no immediate failures; but we had three late failures, due to osteoarthritis in two and to intermittent claudication in the other leg in one.

Summary

Our experience of subcutaneous tenotomy of the tendo Achillis for the relief of intermittent claudication in 72 patients is discussed.

The technique of this simple procedure is described and the complications of the operation are discussed.

The results, tabulated under three headings, were: (*a*) complete relief in 16 (22%), including two bilateral tendon sections; (*b*) temporary relief—minimum of one year—in 15 (21%) including one bilateral tendon section; and (*c*) immediate failure in 41 (57%) including seven bilateral tendon sections.

The causes of failure are discussed in detail. Immediate failures were due to intermittent claudication elsewhere in the same leg or in the opposite leg; these constitute approximately 50% of the failures. The remaining 50% were divided almost equally between early union of the divided tendon without lengthening, onset of ischaemic changes leading to amputation, and osteoarthritis.

We feel that this high failure rate (57%) could have been greatly reduced by better selection; 34 out of 41 probably should never have been tenotomized.

The principles of selection are discussed and the difficulties outlined.

In our opinion this operation has a definite though limited place in the management of intermittent claudication.

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INCIDENCE OF INTUSSUSCEPTION AND CONGENITAL HYPERTROPHIC PYLORIC STENOSIS IN EDINBURGH CHILDREN

BY

IAN McD. SMITH, M.B., Ch.B.

From the Royal Edinburgh Hospital for Sick Children

Recent comparison of the incidence of acute intussusception in Newcastle upon Tyne (Court and Knox, 1959) and in Birmingham (MacMahon, 1955) has shown a marked difference between the incidence in the two cities, while the incidence of congenital pyloric stenosis in Newcastle upon Tyne (Davison, 1946) and Birmingham (MacMahon *et al.*, 1951) shows a striking similarity. Before any conclusion can be drawn from these figures it will be necessary to carry out similar surveys in other centres, and with this in view a survey has been made of such cases occurring within the City of Edinburgh during the period 1950 to 1958.

Method

The method used is similar to that employed in the previously reported series (Davison, 1946; Spence and Court, 1950; MacMahon, 1955)—the total number of children with an Edinburgh address admitted to any of the children's units within the city during the nine-year period 1950 to 1958. Again, as in the previous series,

only those cases confirmed by operation or by barium-enema examination have been included, while those classed as " spontaneous reduction " have been excluded.

In the case of congenital hypertrophic pyloric stenosis only cases confirmed by operation or by necropsy (one case) were included in the series. There was, in fact, no record of a medically treated case of pyloric stenosis during the period of the survey, all cases diagnosed being surgically relieved by Ramstedt's operation. This differs considerably from the series reported from Birmingham, in which 83 out of a total of 578 cases were either medically treated or found at necropsy.

Findings

During the nine-year period 105 cases of intussusception were admitted to the children's units in the city, and, though the rate of admission was on the whole steady, in three of these years there was a marked drop in the incidence despite the fact that the birth rate was essentially unchanged; this being noticed also in the rate of admission of children from outside the city.

From 1950 to 1958 the number of live births in the City of Edinburgh totalled 66,966, thus giving an incidence of intussusception of 1.57 per 1,000 live births. This shows a much lower incidence than that in Newcastle upon Tyne during the period 1950 to 1957—4.3 per 1,000 live births—and is comparable to the incidence in Birmingham of 1.49 per 1,000 live births.

During the same period 205 cases of congenital pyloric stenosis were admitted to the various hospitals, giving an incidence of 3.06 per 1,000 live births. This figure is very similar to those previously reported from Birmingham (3.0 per 1,000 live births) and from Newcastle upon Tyne (2.8 per 1,000 live births).

Discussion

Despite the fact that there is a considerable difference in the occupation of the inhabitants, conditions of work, density of population, and, to some extent, climatic conditions between the cities of Birmingham and Edinburgh, there is a marked similarity in the incidence of intussusception between the two cities. It may well be that the incidence in Newcastle upon Tyne is unusual in being so high and that the figures for Birmingham and Edinburgh bear a closer relation to the incidence in the country as a whole. It has been suggested that in the Birmingham series some cases which should have been included may have been treated in hospitals on the periphery of the city; this does not arise in Edinburgh, where the city boundary is quite clearly determined.

The striking similarity in the incidence of congenital pyloric stenosis could well be explained by the fact that this condition is not so liable to variance due to population shift as acute intussusception, which is usually later in onset and is, of course, not a congenital disease.

If one accepts that intussusception is more prevalent in the North of England than in the Midlands and in the South, then it might follow that further north the incidence might be even higher. This, however, has not been found to be the case, and the answer may well lie in the more sociological aspects of the cities in which figures have been obtained.

It will be necessary for similar surveys to be carried out in other centres before any concrete conclusion can be drawn from the figures obtained in this series and in those previously reported.

Summary

An account is given of the incidence of acute intussusception and of congenital pyloric stenosis in the City of Edinburgh; comparison is made with other reported series from Newcastle upon Tyne and Birmingham, and it is found that the incidence of intussusception in Edinburgh (1.57 per 1,000 live births) approximates to that in Birmingham, giving the impression that the incidence in Newcastle upon Tyne is extremely high; on the other hand, the incidence of congenital pyloric stenosis (3.06 per 1,000 live births) is very similar to the incidence in both Newcastle upon Tyne and Birmingham.

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Reviews

EARLY DIAGNOSIS

Early Diagnosis. By Various Authors. Edited by Henry Miller, M.D., F.R.C.P. (Pp. 400+viii. 25s.) Edinburgh, London: E. and S. Livingstone Ltd. 1959.

This book on early diagnosis is particularly appropriate for the family doctor, for whom it is specifically written. It is the family doctor who sees disease in its earliest phases, and it is in these early and rather vague and indefinite periods that diagnosis is most difficult. The family doctor has to rely almost entirely on clinical acumen to pick up the beginnings of diabetes, cancer, thyrotoxicosis, disseminated sclerosis, and the like. He has to piece together the patient's disjointed history and relate it to the minimum of physical signs, and then finally has to rely on his past knowledge of his patient and on the impressions which all these pieces of evidence create in his mind to make the " diagnosis." He has also to be sufficiently alert to be able to think of possible " organic " diagnoses, which tend to be rare in general practice compared to the many minor and relatively trivial disorders that may present with identical symptoms.

Early diagnosis in practice is essentially a personal and a clinical matter, and as a rule the doctor finds little help from the standard textbooks on his shelves (this is probably why they are so rarely opened and consulted). This book is an exception. Designed for the family doctor, it approaches the problems from highly practical and clinical aspects. In every instance it is the clinical observations that receive the greatest consideration; the importance of a good history and significant, albeit slight, aberrations from the normal receives appropriate emphasis, as do possible early abnormal physical signs. The ancillary investigations mentioned are always those that can be easily carried out by the family doctor, provided he has access to local radiological and pathological departments.

Written by an " all-star " collection of contributors ranging from Lord Cohen through eminent professors and consultants right down to practising family doctors