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THE SPREAD OF ANKYLOSTOMIASIS.

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YOUR notes in the *BRITISH MEDICAL JOURNAL* of November 14th on the subject of ankylostomiasis are most opportune in drawing attention to the gravity of this pest. Few realize how enormous is the number of persons who are infested with this and other intestinal parasites, and in consequence how many soldiers and other persons who have resided in the tropics are likely to be infected and therefore become the means of spreading such disorders in Europe. When I became Inspector-General of Civil Hospitals in Bengal the subject soon attracted my serious attention. I found that in 1898, of all patients treated in the Bengal dispensaries 5.34 per cent. suffered from intestinal worms, and no fewer than 61.52 per cent. of these were in the Patna Division alone. In my report for 1902 on the Charitable Dispensaries of Bengal I find there were 274,595 such cases out of a total attendance of 4,452,628 individuals, or 6.16 per cent. In the Noakhali District the percentage was 21.88 and in the Durbhanga District it was 29.85. In Durbhanga town it was no less than 41.86, while in the fashionable hill station of Darjeeling it was 41.28 per cent.

Great as was the relief afforded by treatment of known cases of these affections it was clear that a large number escaped diagnosis, which could only be ensured in doubtful cases by microscopic examination of the faeces. I consulted Major Ronald Ross, who happened to be in Calcutta at the time, and in consultation with him Messrs. Baker and Company drew up a paper of instructions for issue with their plantation microscopes, which, at my instance have been or are being procured for most of the dispensaries in the province, and are used with excellent results. They are also supplied at the cost of Government, with the co-operation of the Inspector-General of Gaols, to all gaol hospitals in Bengal, and in these institutions much valuable information has been obtained by their use.

Recognizing that prevention was better than cure I requested Major Calvert, I.M.S., who, as Civil Surgeon of Durbhanga, had shown much zeal in the inquiry, to prepare a small pamphlet on intestinal worms for the use and guidance of hospital assistants, with the result that an excellent little work has been produced by him, and has been published by the Bengal Government. He states that in some districts in Bengal in 83 per cent. of the stools of the population the ova of the ankylostoma duodenale have been found. Twelve per cent. of the prisoners at Durbhanga had the ova of the tricocephalus dispar or whip worm and 9 per cent. the eggs of oxyuris vermicularis. In some districts 49 per cent. of adults and 75 per cent. of children suffer from ascaris lumbricoides. Major Calvert observes that "it might possibly be thought that the presence of a few intestinal worms, giving rise, as they sometimes do, to little inconvenience to their host, was not a matter of importance. As a matter of fact, this is not so. The people who harbour these parasites are the best judges of the inconvenience they cause; and from the numbers who now flock to the Bengal dispensaries to seek treatment which experience has taught them is effective and brings relief, it is evident that the presence of these worms is usually attended with considerable discomfort, if nothing worse." He does, however, point out that ankylostoma duodenale "do directly when in large numbers, and possibly indirectly when in smaller numbers, lead to the death of the host harbouring them." Moreover, we do not yet know whether the presence of such parasites is not a far more serious factor in the causation of inability to resist success-

fully the attacks of other diseases. Major Calvert goes on to show that there is very little difficulty, or even unpleasantness, in detecting the ova by the microscope. In Bengal those very useful persons the sweepers can easily be taught to carry out all the preliminary stages in the investigation. Most authorities recognize that success in abating the scourge can only be obtained by systematic and long-sustained efforts. It is easy to give immediate relief, but prevention in this case is much more important and difficult, and resolves itself into (1) treatment of infected persons so long as to ensure a complete cure; (2) destruction of faeces which contain the ova; (3) pure water supply; (4) conservancy; and (5), lastly, in my opinion, giving simple lessons in important sanitary matters in all schools, and even in colleges, because without the intelligent co-operation of all classes no effective sanitary reforms can ever be successfully carried out.

All of us are aware of the obstinacy of these affections, thus, for example, Dr. Ralph Stockman, in his paper which appeared in the *JOURNAL* of July 25th, remarked that the original worms in the case of ankylostoma die in about six years, and a natural cure then results. Fortunately, however, this period can be much shortened by appropriate treatment, and, in suggesting in Bengal, as I always did, that the stools of all prisoners should be examined on admission into gaol for ova, and treatment carried out until they were completely cured, I considered that not only would the individual be relieved but a large number of possible disseminators of the affection would, for at least a time, be rendered harmless. Moreover a man who is freed from this scourge is less likely to increase the gaol sick-rates and death-rates, because he is more likely to resist the usual gaol disorders. There can be no doubt that essential points in prevention are a pure water supply, improved conservancy (including destruction or disinfection of stools, which in public institutions is an easy matter), and habits of personal cleanliness, but, although it will be long before diseases of this kind are stamped out and the general population greatly influenced, a beginning can be made by educating the children and especially the people in right views on these subjects. In order to carry out these ideas I co-operated with the Director of Public Instruction in Bengal in inducing the Senate of the University of Calcutta to encourage training in elementary sanitary science and in hygiene by introducing the subject into examinations. Further effect was given to this decision by preference being accorded, all other things being equal, in appointing teachers under the Education Department and in accepting youths as engineering and medical students to those who had obtained the sanitary certificate of the University.

Moreover Major Bedford, I.M.S., has written a suitable manual on the subject for the use of students, in which special prominence has been given to native habits and modes of thought, points of much importance in order to remove many prejudices—religious, caste, superstitious, and otherwise. While all must be convinced of the extreme necessity of teaching the young why we should be clean, why spitting and other bad habits spread disease, or mosquito nets are desirable, and other simple matters of this kind, it is equally necessary to insist on such training being carried on into the higher branches of education so that teachers may be taught what to teach, and so that those who obtain high university degrees may be impressed with the importance of sanitary expenditure and legislation when they come to sit on municipal councils, and thus be led to aid, and not to oppose, such projects as they now sometimes do. My proposals to include in some way these important questions in the higher university training and tests met with some ridicule amongst the less informed native graduates, but they could hardly have realized the fact that, owing to the sanitary lapses, indifference, and ignorance of their poorer neighbours, even cultured citizens may run the risk of being eaten up of worms, as Herod of old was said to have been. The early environment of many rich and distinguished Orientals sometimes tends to make them indifferent to these serious matters, hence the necessity of so often calling attention to them. I believe that even in the case of plague many of the difficulties experienced in managing it would have been diminished by a more widely-spread knowledge of its causes and treatment, and that it is to a general spread of education in hygiene that the best hope lies for the future of mitigating such terrible diseases.

I have referred to the investigation of problems of this kind in gaols. No other places in India and in the tropics afford such excellent facilities for the study of many obscure problems in medicine and in hygiene. This is fully recognized by our best gaol medical officers, but unfortunately at present

economic and other reasons stand in the way of relieving them from the non-professional work of prisons, which leaves them very little time to devote to such important inquiries.

In these days of rapid communication between all parts of the world, it is, perhaps, unnecessary to emphasize the risks that are run of the introduction of tropical affections into temperate climates, and to the desirability of studying and preventing them.

A CASE OF ABDOMINAL HYSTERECTOMY FOR RETROPERITONEAL CERVICAL FIBROID

(WEIGHING 13½ POUNDS).

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THE case recorded in the following paper is the sixth case of fibroid of the cervix that I had operated on within the last three years. I cannot remember having met with a case before October, 1899; at all events, I have never operated on a case of retroperitoneal fibroid of the cervix before that time. In all six cases the patients made good recoveries.

M. H., a single woman, aged 42, a Board School teacher, was admitted into the London Hospital under my care on June 3rd, 1902.

Present Illness.—She had first noticed a swelling in the abdomen about three or four years ago, and from that time it had gradually increased in size. Twelve months ago she began to have a feeling of weight in the abdomen, and a dragging pain, chiefly on the right side. The pain had been worse just before menstruation, and had been less severe immediately after the period; the pain had also been relieved by lying down. It had not been sufficiently severe to actually prevent her going on with her work. She had, however, suffered from a feeling of increasing weakness and prostration, and from slight attacks of faintness when the pain had been severe. Of late the legs had swelled after standing. The bowels had been regular and the appetite poor. There had been no trouble as regards micturition.

Menstrual History.—The catamenia appeared at the age of 14. Menstruation had never been regular; there had been intervals of five, six, or eight weeks between the periods. The period had generally lasted about four days; the amount lost had been normal. During the twelve months before admission menstruation had occurred more regularly. The periods about twelve months ago had lasted five or six days. During the three months preceding admission to the hospital, however, less and less had been lost at each period.

Previous Illnesses.—She had had typhoid fever, complicated with pneumonia and haemorrhage, eight years ago. She had always been subject to "colds" and "sore throats."

State on Admission.—The abdomen was markedly prominent from the epigastric region downwards. On palpation an irregular swelling was felt reaching in the middle line 4 in. above the umbilicus. In the right nipple line the tumour extended to the ribs, and reached far back into the right flank. In the left nipple line the highest point of the tumour was 2 in. from the costal margin. A loud uterine souffle was heard at

various places over the surface of the tumour. The circumference of the body at the umbilicus was 36 in. A little fluid was pressed out of the right nipple, but none could be pressed out of the left.

On vaginal examination it was found that the hymen admitted the finger without tearing. The posterior vaginal wall was bulged downwards and forwards by a fixed elastic swelling, having, it was judged, a transverse measurement of between 3 and 4 in. The vaginal portion of the cervix could not be reached. I came to the conclusion that the tumour was probably a large uterine fibroid. The presence of the fixed portion bulging down the posterior vaginal wall led me to expect that an operation to remove the tumour would be more than usually difficult.

Operation (June 5th, 1902).—The abdomen was opened by the usual incision in the middle line and the incision was subsequently extended upwards so as to measure ultimately about 9 in. The body of the uterus was readily seen. It was uniformly enlarged so as to be about the size of the uterus immediately after delivery, but as regards its shape it was not in any way deformed. It became evident at once that the greater part of the mass forming the tumour lay behind and below the posterior

layer of the peritoneum. The fibroid had evidently grown from the supravaginal cervix, burrowing below the peritoneum which formed Douglas's pouch and raising this completely from the pelvis. It was impossible at this stage to move the tumour appreciably, and it was clear that the only way to remove it would be to incise the peritoneum forming the covering of the mass and to enucleate it gradually from the extensive retroperitoneal "bed" where it lay. I began by tying the left ovarian vessels and then opening up the left broad ligament. Incisions were carried somewhat transversely across the peritoneum over the tumour, one in front of and below the body of the uterus and one behind. All the usual relations were so much altered by the manner in which the tumour had grown that it was impossible to follow the usual steps of an abdominal hysterectomy, making the peritoneal flaps at one stage, finding and tying the uterine arteries at another stage, and so on. The large vessels were tied as they came into view or after they were divided. Working first on one side and then on the other, the mass was gradually enucleated from its attachments. I was, of course, well aware of the probability that the pelvic part of the tumour would be in close proximity to one or both ureters, and on the left side of the pelvic off-shoot of the tumour I found, and fortunately recognized, some 3 in. of the left ureter, tightly stretched, like a

Fig. 1.—Retroperitoneal cervical fibroid removed by abdominal hysterectomy. A, body of uterus enlarged but not deformed; B, tumour; P, cut edge of peritoneum.

piece of narrow white tape, over the left convex surface of this part of the tumour. It looked white, and not unlike a piece of thickened fibrous tissue. It was carefully freed from the tumour, and the enucleation continued. I did not see the right ureter.

Ultimately the whole tumour was freed from its attachments behind the peritoneum, and it was then found to be continuous with the uterus at the level of the supravaginal cervix—that is to say, the tumour was a retroperitoneal cervical fibroid. Several portions of the tumour had become cystic, and some of these cysts were opened in the course of the operation in order to make the mass smaller. They contained thin bloody fluid. The whole mass, consisting of the body of the uterus and tumour, was then cut away, leaving little more than the vaginal portion of the cervix. The remaining portion of the cervical canal and external os uteri was opened sufficiently to admit the finger. A few silk ligatures were required to control bleeding from the cervical stump. These were passed so as not to occlude the lumen of the