As the woman had not been ill no physician had seen her.

CASE VIII. F. D. This patient was a colored man thirty-five years of age; vaccinated in infancy. No constitutional disturbance. He communicated a severe form of the disease to his wife, and also to three or four other persons.

CASE IX. J. T., twenty-four years of age; vaccinated in infancy. This woman had a few of the firm, hard disks in the palms, and a few slight recent scars could be seen on the face and body. The most careful and persistent questioning, not only of the patient herself, but also of the other members of the family, failed to elicit any history of constitutional disturbance. The eruption had been so slight that it had not attracted the attention of any one. As in one of the preceding cases this mild and unrecognized attack of modified variola was the origin of a severe case of unmodified small-pox in a child with whom the patient was brought in immediate contact.

Many more cases, not only of varicella with marked constitutional disturbance, but also of modified small-pox, without illness, sufficient to attract the patient's attention, could be reported. But enough has been said to show:

- (1) That varicella is not necessarily an infantile disease.
- (2) That it is frequently attended with marked constitutional disturbance.
- (3) That small-pox in the vaccinated is not always accompanied with marked disturbance of the system.
- (4) That the history of the case and the general symptoms are of no assistance in forming a diagnosis, but that the appearance of the eruption and its sensation to the touch are the only sure guides.

THE ABSCESSSES OF HIP DISEASE, THEIR PREVENTION AND TREATMENT.¹

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THE treatment of the abscesses of hip disease is a question which has been widely discussed, and one upon which diametrically opposed views have been held. No figures bearing upon the relative value of the various treatments have yet been brought forward, and the debate so far has been largely confined to the assertion of personal opinion. As a general rule, surgeons have advocated the early incision of these pus collections wherever and whenever they form. Many of the leading orthopedic surgeons in America, on the other hand, advocate very strongly letting the abscesses break of their own accord unless their character is so acute as to render operative interference necessary. Their reasons for this are: first, the possibility that the abscesses may disappear spontaneously; secondly, that the operation has no effect upon the original disease to which the abscess is only incidental; and third, that there is a risk of septic infection due to operation. At the close of a discussion at the Orthopedic Section of the New York Academy of Medicine, held in the spring of 1889, the Chairman, Dr. Gibney, remarked that however interesting the discussion had been, it had led to no positive results, and that a previous discussion in the same section had been equally fruitless;

¹ Read before the American Orthopedic Association at Boston, September 17, 1889.

and he called the attention of the members, to the fact that the question could advance no further until some figures bearing upon the subject were brought forward.

In the hope of bringing to light some definite facts in the matter, the records of the Children's Hospital have been analyzed for the five years ending in 1888. Incidental to this investigation, such important facts were developed with regard to the conditions of the occurrence of hip abscesses that the division of treatment which relates to their prevention has assumed a much more prominent place in this paper than was originally intended.

We had for analysis several hundred cases of hip disease, which were under treatment in the surgical out-patient department of the hospital. In the five years ending 1888, 360 new cases came for treatment to the out-patient department. Of cases continued from the year 1883, there were certainly 50, giving at least 400 cases which were under treatment in these five years. Taking from this number the 80 new cases which came in 1888, in whom abscesses perhaps had not had time to develop; we had 320 cases under treatment at the out-patient department from 1883 to 1887 inclusive.

The operative treatment of hip abscesses, has been pursued at the hospital, in these years, to the exclusion of every other method, so that every abscess occurring in these cases has been admitted to the hospital and operated upon. There have not been more than a dozen exceptions to this rule in these five years: so that the figures, whatever they may be, are thoroughly representative of the operative treatment. Aspiration of the contents of the abscesses has at times been tried, sometimes followed by the injection of iodoform and similar substances. In every case of this sort it has been ultimately necessary to open the abscess by a free incision.

In the five years from 1884 to 1888, inclusive, there were only 70 abscesses opened in the hospital; and as all abscesses were opened as soon as they become superficial enough to give evidence of fluctuation, this number represents approximately the total number of abscesses occurring in the 320 cases treated in the out-patient department. The calculation cannot, of course, be more than an approximate one. A certain number of the 320 cases disappeared from view without being under treatment for any length of time; but these were few, and, as a rule, not the worst class of cases for the reason that there is no other large orthopedic clinic in Boston, and the cases which progress badly are almost sure to come to the Children's Hospital. The cases which are lost sight of are generally those in which the symptoms quickly subside, or in the long chronic cases where the symptoms never reach any very great severity. It is not, as it is in New York, for instance, where the cases shift from one clinic to another. In Boston they must come to the Children's Hospital, or go untreated, so that the error arising from this source is necessarily a small one.

So far as the writers have been able to judge, the figures represent *very fairly* the total number of abscesses occurring in the 320 cases of hip disease under treatment in the five years. Apparently, it is from a similar class of cases that the statistics bearing on the frequency of hip abscesses collected by Gibney, Marsh, and the Clinical Society have been taken: so that it is perfectly proper to compare the percentage of abscess occurring in this series of cases with the statistics of

those writers. In 320 cases, then, we had in the neighborhood of 75 abscesses, making all allowances for error, which is a percentage of 23.

Comparing, then, this percentage of 23 with the other figures relating to the frequency of hip abscesses, the writers were very much surprised to find that it was very much smaller than any previously reported group of cases. In the series of cases reported by the Clinical Society's Committee, in 1880, of 401 cases, 69% developed abscesses in the course of a few years. Mr. Marsh, analyzing the more recent cases from the Alexandria Hospital (those from 1880), calculated that 50% of all the cases developed abscesses before admission, or during the course of the disease. The diminished percentage, which was so much smaller than the Clinical Society's series, he attributed to the improved methods of treatment; and, he added, "My own estimate, from what I have seen in the hospital and elsewhere, is that the formation of an abscess may be averted by early treatment in at least 80% of the total number of cases."

Of the 80 cases of cured hip disease reported by Gibney in 1878, where the expectant treatment had been pursued, 48 cases, or 60%, had abscesses; and in the discussion following the reading of that paper, Dr. Yale stated, as the result of his own experience and that of others, that about 50% of all cases of hip disease develop abscesses.

The out-patient cases in the Children's Hospital series have been under treatment continuously, reporting once a month at the hospital. The method of treatment has been almost entirely by the use of the long-traction splint, with crutches, and a high shoe on the well foot.

In all cases where deformity occurs in the leg, as soon as flexion or adduction or abduction reaches any noticeable degree, the patient is at once admitted to the hospital, and the deformity reduced by means of traction in the line of malposition, while the patient lies in bed, secured to a bed frame, with the leg elevated or abducted or adducted, as the case may be.²

In the same way children, whose joints become acutely sensitive, are not allowed to go about on crutches, but are at once sent to bed until the joint quiets down. Formerly the cases were allowed to go about till the deformity became so great that the splint could not be comfortably worn, and the proportion of abscesses at that time was larger than it is now.

The time required in bed for this reduction of the deformity is rarely more than a few weeks, and only a few days in the milder cases. Correction of the position of the limbs under ether is only undertaken in very exceptional cases. It is to this careful correction of deformity, as soon as it occurs, and to the immediate attention paid to any acutely sensitive condition of the joint, that the writers would attribute this exceptionally small percentage of abscesses.

Leaving for a while that side of the question which relates to the prevention of hip abscess, and coming to the analysis of the 70 cases operated on at the hospital between the years 1884 and 1888 inclusive, only 55 of these proved suitable for analysis. The others were rejected because the records were imperfect, or because the information about the patients was scanty; and all

of these rejected cases were those of the earlier years (1883 and 1884). The cases for analysis were not selected upon any basis, except that of being well recorded, and no cases in the last three years were omitted. In addition to these 55 cases we have added 8 cases of hip abscess from the House of the Good Samaritan, which were not picked, and which were similar to the Children's Hospital cases in every way.

The time of the occurrence of these abscesses in the history of the disease proved to be a matter of some practical interest. In 59% of all the cases, it occurred within one year of the beginning of the disease. Of the remainder, it occurred in 13 cases within two years; in 9 cases, in three to five years; and once each in seven and nine years. In 26 of the cases (41%) the abscesses appeared before the patients came under treatment, while four more appeared within two months after the beginning of treatment: so that 44% of the total number of abscesses occurred either before any treatment was begun, or within the next two months. In 37 cases the abscess came on while the patients were under treatment, and it is worth while to analyze these cases very carefully. The abscesses came on under the use of a Taylor traction splint 22 times; with the use of a Thomas splint, four times; with the use of a posterior wire fixation splint (the Cabot frame), six times; and under miscellaneous treatment might be grouped four cases, — one bed extension, one Sayre short splint, one plaster bandage, one high shoe and crutches. Analyzing the 22 cases, where it came on in the course of treatment by a long traction splint, in nine cases it was stated in the records that the treatment was markedly inefficient on account of the drunkenness or carelessness of the parents. In the remaining 13 cases, where the abscesses came on under treatment by the Taylor splint, the care of the patient at home was good, and the treatment efficient, so far as the out-patient surgeons could judge, except in three instances, where the splints were discarded at home, and the abscesses followed; so that really in only 10 of these 22 cases did the abscesses come on under what could be considered efficient treatment by this method. The groups of cases where abscesses occurred with the use of a Thomas or Cabot splint are too small for analysis. In the great majority of all cases, where the abscesses occurred under treatment, it came on in from six to twelve months after the application of the splint.

It has already been stated that the operative treatment has been pursued in all cases, and the question of the risk of the operation is, of course, one of very great interest. The technique of the operation has been perfectly simple. The abscess has been freely incised; drained by counter-openings, if necessary; and the cavity has been curetted, and thoroughly irrigated with a strong corrosive solution. The wound has either been loosely packed with iodoform gauze, or drained by a tube which has remained in only a short time. Antiseptic dressings have been applied for weeks after operation, and only when the sinuses have been reduced to small openings have open dressings been applied.

In the 63 cases there was no case of anything approaching septicæmia. In feeble children the temperature rose slightly on the day after operation, from reaction; but it always fell again, and was never of a character to give anxiety, with the exception of one patient who died of tubercular meningitis within ten

² The child is fixed to a bed frame so that motion is impossible. The child cannot sit up or turn over, and when lifted, is lifted on the frame, as on a *gouttière de Bonnet*, or wire cuirass. Fixation is practically as complete as in the *gouttière de Bonnet* (wire cuirass), with the addition that traction in the line of the deformity is possible.

days after operation. This is the only case in the 63 where death could possibly be attributed to the operative procedure, and in no other case did death occur within three months; and generally in the fatal cases it was only after a lapse of one or two years. As a rule, the operation was followed by a decided improvement in the general condition of the patient and by an improvement in the joint symptoms.

Of these 63 cases, 16 are dead and 4 are dying, while in 7 cases the end result is not known. This is a mortality-rate of approximately 40% which is exceedingly high in comparison with the death-rate by suppurative hip disease in general. But a comparison of these cases with such groups as the Alexandria Hospital series is unfair, because the percentage of abscesses to the whole number of cases of hip disease is so widely different in the two groups. Here the abscesses were only 23% of all the cases; in the earlier Alexandria group they formed 70% of all the cases.

The treatment pursued in this series has eliminated abscess in a large number of cases, and confined its appearance, as a rule, to a small percentage of cases where the disease is of such intrinsic severity that suppuration is inevitable; and necessarily the percentage of death in such cases must be a high one. It would, therefore, be misleading to compare the figures of the death-rate with those of Gibney, Marsh, Billroth or Cazin.

Of the 16 fatal cases, 4 died of tubercular meningitis, 2 of phthisis, 3 of amyloid degeneration of the viscera, 3 of exhaustion and prolonged suppuration, and one each from excision and enteritis many months after operation. Of the 4 cases that are classed as dying, 3 have advanced amyloid degeneration of the viscera, and one is hopelessly exhausted, with but little prospect of relief even by amputation. In 7 cases the end result is not known. This gives a mortality of nearly 40%, in cases which have only been under observation but a few years, a majority of them less than three.

It may then be said of the operation for abscesses in hip disease, that it is not attended with the risk of septicæmia which is sometimes attributed to it, and that it does not prevent amyloid degeneration from taking place.

The present condition of the diseased limb is not known in 7 of the patients, who may be alive or dead. In the 16 cases which died, with one exception, the sinuses were all open at the time of death. In the 43 cases where the present condition of the patient is accurately known the abscess wound is closed in 20, and one or more sinuses are still open in 23. Of the cases where the sinuses are still open, in 5 a year has passed since the operation, 10 are open at the end of two years, 7 at the end of three years, and one at the end of four years. In the cases where the sinus is closed, the time of closure is, of course, of much interest. In the 20 cases, 10 closed within a year after operation and in 6 between one and two years. In three of the remaining it closed at the end of two years, and in one case at the end of four years. In only one case did it close within six months of operation, and in this case within a month. Secondary abscesses, very superficial, occurring in the cicatrix of the operation, have occurred in one or two cases. It must, therefore, not be expected that the sinuses will close immediately after operation; and in most cases where the closure is to occur, it takes place within a year or eighteen months of operation.

It is very difficult to sum up a paper which is at best only an imperfect summary of an important series of cases. From the figures that have been presented it seems fair to conclude that the preventive treatment of hip abscesses is an exceedingly important matter, and that by the confinement of the patient to bed when symptoms of deformity or joint tenderness arise under efficient treatment the abscesses may be averted in a large proportion of all the cases. But when this smaller proportion of abscesses has occurred in them, the mortality per cent. is exceedingly high, and the prognostic outlook very much more serious than in suppurating hip disease in general. Operation does not seem to be attended with the risk of septicæmia, nor does it prevent the occurrence of tubercular meningitis or amyloid degeneration; and finally it may be stated that thorough operation is followed, in a fair proportion of all cases, by the speedy closure of the abscesses, a closure which remains permanent.

SPASTIC TORTICOLLIS APPARENTLY DUE TO FAULTY POSITION OF THE EYES, AND CURED BY TENOTOMY.¹

BY O. F. WADSWORTH, M.D.

CARL F., a bright, intelligent boy, nearly fourteen years old, of good size and with well-shaped head, was brought to me June 5, 1887, because of a deformity which was said to have commenced in infancy and to have been becoming more pronounced up to that time. On the supposition that he had wry-neck and lateral spinal curvature, he had been first taken to Dr. E. H. Bradford. Dr. Bradford found no permanent contraction of the muscles of the neck, and that, while there was a well-marked convexity of the spine toward the left, the vertebræ were apparently normal. He also observed that the eyes were not directed properly, and advised that the boy be taken to me.

The brief history of the case, obtained mainly from the boy's father, was as follows: In early infancy it was noticed that the boy's eyes were "wild" and that the left eye rolled up; at least as early as when he began to walk the head was held tipped to the right, and as he grew older the right shoulder dropped. Of late years the eyes had not been so "wild," but appeared more so when he was excited. He had never had double vision. The tipping of the head and dropping of the shoulders had gradually grown worse, and of late the remarks of his schoolmates on his figure had caused him much annoyance.

The boy was well grown, his muscular system well developed. He sat or stood with his head tipped to the right, his face turned a little to the right and inclined considerably forward, his right shoulder considerably lower than the left, the spine laterally curved with convexity to the left. (Fig. 1.) In walking the left shoulder was carried a little in front. The excursion of each eye was good in all directions. In ordinary positions, in fixation for near or distance, the left eye stood about 1" higher than the other. Only when the eyes were turned much down and to the left, while at the same time the head was inclined forward and to the right, and rotated a little to the right, did he apparently get binocular fixation; even in this position the left eye rolled up when it was covered, and on being uncovered again did not instantly come back

¹ Read before the American Ophthalmological Society.