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## FREE INCISION OF ABSCESS OF OSTITIS OF HIP; AND CLOSURE WITHOUT DRAINAGE.

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[Read January 11, 1893.]

I WILL in this paper refer only to cases in my private practice in preference to my hospital experience, because these cases were in a more favorable condition for operation, and because it was possible to keep them under control in a more satisfactory manner, and I was less likely to lose sight of them. My hospital experience in similar cases is far less satisfactory, and I regret that I cannot at this time give the statistics in addition to those contained in this paper.

I am convinced that the occurrence of an abscess of any considerable size is generally evidence of neglect, and that its growth to a size to raise the question of the advisability of its evacuation is a still further error. The neglect of early recognition of the malady and the enforced postponement of rigid immobilization render necessary the consideration of the question now under discussion.

In view of the well-recognized facts that spontaneous resolution by absorption does take place in favorable cases, and that even after spontaneous rupture of an abscess the resultant sinus sometimes does ultimately close, it might appear to be adding an unwarranted risk to operate at all. But on the other hand the occurrence of the abscess being often caused by neglect, and the doubt that must exist as to the possibility of obtaining a final favorable result, even with the employment of the desirable forms of mechanical rigidity of the joint, favors the application of remedial measures of an operative nature which are based upon sound surgical principles. The great diversity of opinions, even among orthopedic surgeons, as to the expediency of operative interference in hip abscess is evidence, first, that operative procedures alone never cure in this condition, and secondly, that the scientific use



of mechanical principles alone frequently accomplishes that which can be obtained in no other way. Until the recent introduction of asepsis and antisepsis the evacuation of hip abscess was followed by no better results, and not infrequently by not as good results as those obtained by spontaneous rupture. In those cases that did not succumb by amyloid degeneration or fatal tubercular disease elsewhere, there was almost invariably a sinus of nearly a lifetime's duration. At the present day the successful accomplishment of a cure of hip abscess, by free incision, depends upon the thoroughness with which aseptic precautions are observed. I am convinced that where failure has occurred it has been largely due to incompleteness in antiseptic precautions, and I believe that it would be far better not to open such an abscess when for any reason the most strict asepsis and antisepsis could not be obtained and maintained. I can see no good reason for waiting for an abscess of the hip to reach the point of rupture before resorting to surgical interference, because at that time there is not only a natural increase in the size of the abscess accumulation, but the original site of the osseous origin has had everything to favor an increased destruction. The abscess wall has become thin, and tends to a non-union at that point, leaving the much-to-be-dreaded sinus; the constitution will have become depraved from the presence and attempt at absorption of so great a quantity of deleterious material and it is not at all unlikely that bone excision is so frequently indicated because of the great extent of erosion produced by the delay in evacuation. The proportion of cases of hip disease that have abscesses is variously stated as being from 50 to 75 per cent.

The London Clinical Society's committee in 1880 reported 401 cases of hip disease, of which 69 per cent. developed abscesses in the course of a few years.

Cazin<sup>1</sup> reports 80 suppurative cases treated in a hospital at Berck. Fifty-five per cent. were cured;  $12\frac{1}{2}$  per cent. died; 25 per cent. were not cured;  $7\frac{1}{2}$  per cent. were improved. In Alexandra Hospital, London, in 260 suppurating cases,  $33\frac{1}{2}$  per cent died; 42 per cent. were cured. Hebern<sup>2</sup> classifies results obtained in his hands. Of those not operated upon in three years, 19 per cent. recovered, and 15 per cent. died; 66 of the remainder were not well in four years; 26 per cent. had recovered; 17 had died; 57 were not well. In five years 24 per cent. had recovered; 21 died; 55 not well.

<sup>1</sup> Bradford and Lovett: Orthopedic Surgery, p. 294.

<sup>2</sup> Ibid, p. 325.



Taking all the cases, those operated upon and those not, at the end of five years, 13 per cent. were without operation; 37 cases were resected, with a mortality of 51 per cent.; 11 per cent. had been amputated, with a mortality of 60 per cent., and 29 per cent. had remained not well.

Senn, in his work on *Tuberculosis of the Bones and Joints* (page 448), says: "A suppurating hip-joint in the adult warrants a grave prognosis. Anæmic patients and patients suffering from tuberculosis of other organs, or from other serious complicating disease, are bad subjects for operative interference." And again (page 449): "The more conservative operations on the hip-joint, in the operative treatment of tubercular affection, that are now gradually displacing typical resections, will yield more satisfactory functional results, while the thoroughness with which osseous foci, the disease capsule, and infected para-articular tissue are now being removed, will be less frequently followed by local recidivation."

Lovett and Goldthwait<sup>1</sup> say that in every case of abscess of the hip treated in the Children's Hospital of Boston, from 1883 to 1887, that had been subjected to aspiration, whether followed by injection of iodoform or not, subsequent free incision became necessary. In the same hospital from 1884 to 1888 inclusive, there were 370 cases of hip disease, of which number 70 were suppurating.

Dr. R. H. Sayre<sup>2</sup> says: "It seems to me that the cases reported as dying of amyloid disease and general tuberculosis are an additional argument in favor of more thorough removal of diseased tissue before the general system has become exhausted beyond hope of recovery."

The procedures that I have found to give the most satisfactory results are those by free incision, extending the entire length of the abscess, evacuation of the contents, and sealing of the wound. The day prior to the operation the field is as scrupulously prepared as is customary in surgical procedures. The incision is made at first only large enough to permit the contained pus to slowly escape; as soon as it has ceased to flow, the incision is increased to the full extent of the cavity. Peroxide of hydrogen (medicinal) is now thrown in in a small stream until ebullition almost ceases, and the accumulation of detritus is then thoroughly washed out by means of a stream of warm 1 to 1000 bichloride of mercury solution, from a fountain syringe. By the use of the Barker-Willard irrigating curette, the entire pyogenic membrane is carefully and thoroughly scraped, and any

<sup>1</sup> Transactions of American Orthopedic Association, vol. ii. p. 83.

<sup>2</sup> Op. cit.



shreds of fibrous tissue remaining are removed by scissors. It is now possible to trace the site of the original ostitis, and when found, if not too extensive, its removal is frequently easily accomplished with a gouge.

The difficulty experienced in obtaining a sterile, and at the same time an efficient emulsion of iodoform in olive oil, has induced me to dust powdered iodoform over the entire surface after it has been carefully dried with gauze sponges. The edges of the wound are brought in contact and so held by silkworm-gut sutures, and the entire surface is covered with a thick fold of aseptic gauze, the incision having been covered with protective.

Enforced immobilization is secured with a long padded splint reaching from the axilla to the malleolus, and retained in position with plaster-of-Paris bandages applied to the leg and the trunk, or by some form of portable bed or fixation apparatus. At the expiration of one week to ten days the stitches are usually removed, if primary union has been obtained. The external dressings and fixation apparatus are readjusted and maintained for a period of three weeks more. The subsequent procedure is enforced mechanical immobilization of the joint, either in bed or by apparatus, as the individual requirements of the case may indicate.

While the statistics I have to offer cover a comparatively small number of cases, they may be of use when added to others, and I therefore give them. The cases operated upon by me by the method described number twenty-four. There were 16 girls and 8 boys. Eighteen were upon the left side and six were upon the right. The abscesses had been observed by the patient, parent, or attending physicians as follows: For three months in 5 cases; seven months in 3 cases; eight months in 4 cases; ten months in 6 cases; one year in 4 cases; two years in 2 cases.

In 5 cases reaccumulation occurred, and subsequent evacuation was required. In 3 of these there has been no reaccumulation, although several months have elapsed. In 1 case a persistent sinus exists. In 1 case infection took place from a stitch-wound abscess, when catgut sutures were employed. In 14 cases more than one year had elapsed, and in 11 of this number the original cicatrices have remained firm and unbroken; 3 were reopened for reaccumulation, and the second cicatrices have not yielded six months after the second operations. In 10 cases, less than a year has elapsed since the operation, of which number 9 have remained closed, and in 1 a persistent sinus is now present. In 16 cases the



bone origin was not found. In 3 it was found to be of an extensive character, involving the head of the femur and acetabulum. In 3 cases the deposits were found to exist in the femur, and were of small size. In 2 cases the site was found in the rim of the acetabulum and quite small in extent. In addition to the above there were a number of suppurating cases upon which I did not consider operation advisable. Some of them were upon the point of spontaneous rupture, the overlying skin was thin, very tense, and the abscesses of large size. In other cases recourse was had to mechanical fixation without operation. In contrast to the distressing persistent sinuses that have so frequently followed attempts to avoid the radical procedure here described, I have felt that in future I should be inclined to extend the range of cases upon which I would consider the operation advisable.

I have frequently observed spontaneous resolution without rupture of an abscess of considerable size, and have seen many cases where the spontaneous closure of a long-standing sinus has occurred after a prolonged period of time; but these were under the most favorable circumstances, and I can but doubt that they would have obtained a more speedy cure if these abscess-accumulations had not been left so largely to themselves. Upon the other hand the presence of persistent and often multiple sinuses is of entirely too frequent occurrence, and would tend to favor the employment of measures that, while apparently of a serious nature, certainly offer prospects of the avoidance of sinuses—relief from which can often be obtained only by recourse to operative procedures very similar to that employed in their prevention. The unsatisfactory results obtained in the treatment of hip abscess may be traced to—

- a*, delayed operation;
- b*, imperfect measures of operating;
- c*, squeezing the abscess to evacuate the contents;
- d*, the employment of the drainage-tube;
- e*, and most important of all, the failure to employ prolonged and absolute fixation of the hip-joint.

(*a*) In delayed recourse to operative procedures the extensive destruction of bone tissue prevents the closure of an abscess cavity by a constantly renewing accumulation. (*b*) The imperfect operative measures are those which remove but a part of the sac contents or wall, or where the cavity to be closed is too large to permit a thorough cleansing of the parts, or where the cavity about to be closed is filled with some fluid which, in escaping through the incision, tends



toward the production of a sinus. (c) In squeezing the parts surrounding an abscess to assist in more rapid evacuation, the already inflamed tissues are bruised, and upon this point I can cordially indorse every word that Phelps<sup>1</sup> said when discussing this same subject in 1889. He deprecates the squeezing out of the pus, and says that "if the abscess is properly opened at first there will be no necessity for doing this." (d) With reference to the employment of the drainage-tube, I cannot agree with Dr. DeForest Willard<sup>2</sup> with reference to the necessity for its use. Dr. Willard advocated gradual withdrawal of the rubber drainage-tube, believing that it assisted in effecting a thorough cure, and that this was of far more importance than obtaining primary skin union. My own experience is that the employment of the drainage-tube is invariably followed by a sinus which but rarely closes spontaneously. R. W. Lovett, in his classic prize essay, entitled *The Etiology, Pathology, and Treatment of Diseases of the Hip Joint*, 1891, p. 120, says: "The experience with regard to the drainage-tube at the Boston Children's Hospital is of interest. Of forty-three cases of abscess of the hip operated on between 1884 and 1888, one is recorded as having healed within six months, and about half of the sinuses healed within periods varying from one to two years, the rest remaining open almost indefinitely. These cases were all thoroughly cleansed after free incision, and were either packed with gauze, or, more commonly, drainage-tubes were inserted and antiseptic dressings employed. The site of the drainage-tube was almost always the site of a sinus, which persisted for a varying period of time." (e) In the failure to employ prolonged and absolute fixation after the evacuation of an abscess there is an entire disregard of the fact that by this means alone abscesses have been arrested in their growth, and that absorption has thereby been induced. If these are facts—and no one can doubt the statements made by Shaffer, Judson, and other orthopedists who deprecate the resort to surgical measures—then the employment of immobilization will materially assist in the recovery after the evacuation of an abscess, and in the prevention of reaccumulation.

<sup>1</sup> Transactions of American Orthopedic Association, vol. ii. p. 92.

<sup>2</sup> Ibid., p. 146.





