

Ricketts (B. M.)

Traumatic Periostitis.*

BY. B. M. RICKETTS, M. D., CINCINNATI, OHIO, CHIEF SURGEON C. P. & V. RD.

Having had a number of cases of traumatic periostitis under my observation, two or three of which have gone from bad to worse, I am led on this occasion to speak of the good results following prompt surgical interference. That the periosteum may be diseased independently goes without saying. That it is susceptible to injuries of any kind there seems to be no doubt. That the serous effusion as the result of inflammatory changes becomes purulent under certain conditions has been well established, even where there is no apparent connection externally. There is no class of injuries that present so great a number of opportunities for the study of this disease as railway injuries. The prompt interference in cases where there is a serous effusion not only shortens the course of the disease but greatly lessens the liability of the bony structures becoming involved. This interference consists in making one or more incisions through the entire thickness of the periosteum, depending upon the amount of tissue involved. The evacuation of fluid of any character under these circumstances is always attended with most gratifying results, and I feel sure that the premises and investigations of Mr. Ollier have been the greatest means of arriving at these conclusions.

While the periosteum in its normal condition is tough and inelastic it is not so in as great a degree when thickened by inflammatory processes. The effect of inflammation upon this membrane is to cause it to become several times its normal thickness, the changes being the same as in any inflammatory process. The pain is sometimes excruciating and persistent, and if the pressure upon the bone is not relieved soon after the effusion takes place, there is great danger of bony necrosis, which, when once established, may have no limit. Especially is this so about the epiphysis and the apophyseal lines. The further the injury is upon the epiphysis from the apophyseal line the greater the danger to bony destruction; in other words, the softer the bony tissue involved the less resistance it has to abnormal

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changes. Unfortunately the softest bony tissue is found near the articular surfaces; hence the great danger to joints when these tissues are the least involved. It has been customary to postpone surgical interference where the periosteum is involved near articular surfaces. I am thoroughly convinced that this procrastination has been the occasion of many joints being needlessly involved. The nearer the articular surfaces, the more prompt the surgeon should be in removing fluid of any character, either supra or sub-periosteal. As stated before, the periosteum is tough and inelastic, and in nature's great effort to absorb any kind of fluid, especially about the epiphyses, there is great danger of their destruction. It is better, in these days of aseptic surgery, to take our chances for a good result in the evacuation of these fluids under these circumstances, than to leave them in the hands of mother nature. True, she does her work at times rather perfectly, but there are times when she must be assisted, and I look upon this condition as demanding prompt attention.

It has been my fortune to have several of these cases under observation, a few of which I have been enabled to treat from this standpoint, and I feel assured that the good results following in each of these cases has been due to the early evacuation of the effusions. Who would hesitate to freely incise a felon, which is nothing more or less than an acute periostitis due to trauma? If it is good in one it must surely be good in the other. This rule holds good, not only in trauma, but in periostitis from any cause, unless it be syphilitic. There are certainly conditions of this form of periostitis in which much good would be obtained from free incisions, viz: in cases of persistent pain, which have defied the anti-syphilitic remedies. In this connection I will say that I am led to believe that tuberculosis is the cause of 80 per cent of all the cases of periostitis.

Case No. I. Female, aet. 40, weighing about 240 pounds, fell in her yard, striking the inner and middle portion of the left lower leg on a box. She complained of acute pain in this locality for two days before I was consulted. There was considerable tenderness and swelling; temperature 99 degrees. It was necessary to give her morphia to relieve the pain; elevation and hot applications were of no benefit. This state of affairs continued for seven days, when I prevailed upon the patient to allow me to make a free incision. This would have been done on the fourth day had it not been for her husband's interference. Under the influence of chloroform I made an incision two inches in length directly down upon the tibia, not however until after I had explored with the needle, showing that fluid was present. The moment the

periosteum was incised about two ounces of serous fluid escaped. I introduced my finger and found that the bone was denuded for an area of about one inch. This was to me a most remarkable condition. The periosteum was very much thickened and gave evidence of degeneration. I believe that had I delayed the operation for a week or so there would have been supuration, resulting in the destruction of both the periosteum and bony structure. Her recovery was uninterrupted and she was upon her feet with a cane at the end of the third week.

Case No. II. A man, aet. 44, weighing about 160 pounds, in stepping from a street car struck the shin bone upon the platform. He did not pay much attention to it for a few hours, but as the pain became gradually worse I was consulted for its relief. It was also necessary in this case to administer morphia to accomplish this purpose. On the following day he found it necessary to take to his bed, where he remained for two days, at the end of which time he felt that necessity compelled him to proceed on his journey. The swelling and tenderness increased until the entire tibia seemed to be involved. He went from under my care, but consulted me one year after, when I found that the tibia was very much enlarged; that the entire leg had been gradually involved; that he had done no work whatever, and that the suffering at times had been very severe. I reported this case as one where free incisions were not made, and to show the result of not making them. This bone will always be 20 per cent larger than its associate, and will be more or less troublesome for years to come. Had the patient remained under my care and submitted to the operation that I advised I firmly believe that the present state of affairs would not exist.

Case No. III.—Male, aet. 33, of rather good habits, occupation clerical, struck the right arm upon his desk causing but little inconvenience until after the first 24 hours. The pain was rather severe and dull in its character. There was considerable tenderness and but little swelling, showing, to my mind, that the swelling was not in proportion to the amount of pain, indicating that the fluid was beneath the inelastic periosteum. It was necessary to put his arm in a sling, as he would not consent to have an incision made down upon the bone. However, as the pain became more severe, he gladly consented on the fourth day to allow me this privilege. Under the influence of chloroform I made an incision about a quarter of an inch in length down through the periosteum, which allowed about a half-ounce of bloody serous fluid to escape. The acute pain did not again occur, although it was necessary to place the arm in plaster of Paris, with an opening in it over the incision. A small probe was

occasionally introduced through the incision down upon the bone, that the fluid might have easy exit. This was not done after the first 48 hours. The swelling of the arm, which had by this time somewhat increased, gradually diminished. I feel certain that had this incision not been made the epiphysis of the ulna would have become involved, thus seriously affecting the elbow joint. The arm was kept in plaster for two weeks, when it was removed, and motion in the joint found perfect.

Case No. IV.—Young man, 22 years old, a brakeman, allowed his knee to be caught between bumpers. It is a question as to the amount of space between the bumpers. The drawbar of the tender of a locomotive is always stronger than that of any other car, so that it does not have any spring, otherwise I believe the knee would have been crushed and amputation necessary. However, the epiphyses of the tibia and femur being injured made it necessary to give the parts complete rest. Here is a case where the pressure was so uniform that there was no particular part of the periosteum or bone involved. The force was not sufficient to seriously affect either, so that at the end of three days he was able to get about on crutches, which were used for two or three weeks. The tenderness about the external condyle of the tibia and femur was rather acute, and there seemed to be some question as to the extent of involvement, that is, whether or not there was the presence of periosteal effusion. This I am certain did not exist sub-periosteal. The fact that the course was short and the pain slight led me to believe that the effusion was so limited that operative interference was not necessary. This is a case where it was not necessary to resort to any surgical interference other than complete rest and the constant application of heat.
