

how many patients on the other side he cured by hypnotism.

It is interesting that no one has mentioned one thing in regard to this condition, regarding the strapping with orthopedic appliances. We sometimes lose sight of the fact that the sacrum acts as a sort of keystone between the two ilia, and rest in bed on the face will enable gravity to help us out along with strapping.

*Dr. Martin (closing).*—There are a great many people not familiar with this condition, who are apt to overlook it. We ought to be prepared for it. I did not go into the question of dislocation, which is a big subject. Dr. Hancock touched upon it. Dislocations can be reduced under anesthesia with the legs fully extended and flexed upon the abdomen.

It is a hard thing to speak of the pathology of this condition. We don't know it exactly. Let me give you a personal experience; then I think I can better illustrate what I wish to say.

Twelve years ago, when I was assisting in lifting a very heavy man from the table to the bed, his weight was thrown upon my back. I immediately felt something give way; I dropped to the floor and had a numb feeling in both legs. I do not know what happened. They put me upon the bed. I felt a tingling in my toes. In about an hour's time I was relieved of that sensation. My back was strapped, and in a few days, with the exception of a little soreness, I had no further trouble. About four years ago, while kneeling in front of the fireplace to shake the fire, I did not notice a piece of wood in front of the fireplace about two inches thick. I put my left knee on it and it threw the joint out again. That was much more painful than the first time. For a week I could scarcely get around. The last time was two years ago, when I was cranking an automobile. I was invalidated for a week. I had none of the reflex pains. It was a loosening of the joint. Here is what I have concluded from that: that these conditions are curable. I believe most of them are. Of course, when the psychic element is involved you are dealing with a complication. As Dr. Foss said, many people have these troubles and continue to suffer, and are absolutely honest. I can not tell you what to do for these people, but I can tell you this: if you are dealing with an individual who is absolutely honest and wants to get well, I believe the large majority of them will get well with proper strapping of the back or a properly fitting bandage. That is the experience in our clinic. We have a large clinic, and we find that these people will get well, especially if they are not going to get any compensation. And even those that do, respond to the treatment.

When you find that you have these reflex conditions and they are not relieved by the proper strapping, you can make up your mind that it comes from the teeth or something else.

I have never had a case where the reflex pain went so far as the teeth. I have seen it go to the neck. I do not believe that condition has anything to do with it. That is what we must try to differentiate, between pains caused by other conditions and the sacro-iliac joint. Remember you can not injure that joint unless the pelvis is fixed. Usually when the pelvis is fixed you can cause the

injury, but you can not do it by merely being thrown about. If that were so, think how many football players would suffer from sacro-iliac luxation. You must have a fixed joint, unless you have direct trauma. In those conditions, of course, it is easy to make the diagnosis.

There is something in the strapping. The minute you have it below the trochanter you can not walk. Stand the patient with his toes together, his hands behind his neck, get perfect relaxation, and put the straps on the back just in front of the trochanter. This gives almost immediate relief, but in a few days the straps begin to pull. You will find the best way to overcome that is to bring a piece in front around the abdomen, binding the ends and preventing slipping. That has given us more satisfaction than anything else.

The last patient I saw was in my office a few days ago. The man was crossing a ditch with a lady. His foot stuck as she was holding his arm and it gave a twist to his back. He felt nothing that day, just a little pain in the back. The case became aggravated. He had suffered a week when he came to me. I saw him again just before I left, still suffering. A little thing of that kind will cause it, but it takes a tremendous amount of trauma with a fixed pelvis to cause this dislocation. If you want to make a diagnosis, the history is absolutely necessary.

The two cases that I referred to as suing the road have no history of that kind. One was sitting in the car; he was not thrown from the seat. The car did not leave the track. He is getting worse all the time, but dislocation, I am confident, is mental.

## EARLY DIAGNOSIS AND TREATMENT OF JOINT TUBERCULOSIS\*

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This paper is not an attempt to introduce new methods of diagnosis and treatment, but to emphasize facts long known, hoping that they will reach the attention of the larger proportion of our confreres who are doing general practice and general surgery. Further, it is my desire to promote free discussion of the subject in order that we may have the benefit of the opinions of the many orthopedic surgeons present.

For a number of years I have been impressed with the haphazard methods employed for the diagnosis of early tuberculous joint lesions and the varying forms

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of treatment instituted. I have been equally impressed with the need for certain general rules of standardization for early diagnosis and especially for the adequate treatment of these cases. The responsibility for the functional end results in a vast majority of these cases of bone and joint tuberculosis rests with the medical man who sees them first, usually the general practitioner or the general surgeon. It is therefore of very great importance that these rules of standardization be called to the attention of the general profession as forcibly as those measures for the prevention of communicable diseases.

It is time for the fashion to disappear by which these conditions are diagnosed "growing pains," "rheumatism," "white swelling," "malaria," "curvature of the spine," "bad blood," "metastatic abscesses," "dislocated vertebrae" and many other such names equally foreign to the real pathology. And it is time for medical men generally to use easily obtainable diagnostic methods and come to a logical and accurate diagnosis, and institute treatment when it will benefit the patient most. In other words, the patient's welfare must not be sacrificed for the inattentive doctor.

When a suspected joint is presented for examination it is impossible for even the most experienced to make a diagnosis without investigation. It is too often the case that the investigation stops with an x-ray examination, whether it shows bone pathology or not. In going over the records of many joint cases in our clinics it was found that diagnoses of tuberculosis were made without evidence to prove their accuracy. It is important, therefore, that a standard for examination should be advocated constantly, and accuracy sought after. Such a standard is not elaborate, but is simply the routine, detailed examination.

A careful history is often disregarded. The inquiry, "Has any member of the patient's family had tuberculosis?" satisfies the questioner as to the possibility of exposure. It is of greater importance to inquire in regard to the occupants of the dwelling prior to the present family, and to make careful inquiry into the milk

supply of the children. Especially is this true since it has recently been stated by competent authority that 10 per cent of all cows' milk in this country is infected with tuberculosis.

Loss of weight progressively, glandular enlargement, night cries, night sweats, the existence of afternoon temperature as shown by a two-hourly chart, are of the greatest value as diagnostic aids, yet are in the largest number of cases not brought out.

One takes for granted a very great deal if he thinks that because a fusiform swelling of a knee exists a tuberculous arthritis must be present, or that if an excess of fluid in a knee joint exists it necessarily rules out the existence of a tuberculous arthritis. Certainly the existence of infectious arthritis resulting from infected teeth, tonsils, genito-urinary tract and other pus pockets must be considered and cleared up before one can say the joint is or is not tuberculous. One can not be entirely sure even with an excellent x-ray whether tuberculosis or syphilis exists. Many of our radiologists claim that it is frequently impossible to differentiate these two.

The above remarks are no doubt commonplace and elementary, yet all of you have, almost daily, seen cases in advanced stages of destructive joint disease being treated for rheumatism, etc. Only recently I have seen caries of the cervical spine treated by a reputable gynecologist for rheumatism, while a woman with Pott's paraplegia was being beaten on the back with a hammer by a chiropractor at \$5.00 a visit. This woman had seen fourteen physicians without a diagnosis. The responsibility for such conditions rests upon the shoulders of the physicians who see them early and do not make a correct diagnosis, and who treat them indifferently rather than refer them to a competent specialist.

Only recently the statement was made by a nationally prominent surgeon that it took a surgeon like Dr. J. B. Murphy to take the orthopedist out of the harness-maker class. A second surgeon, in addressing an audience said, "Ladies and gentlemen and orthopedists." But neither of them detailed the number of tubercu-

lous abscesses they had opened wide and allowed to become secondarily infected when they could not find the offending bone lesion. Nor did they offer an explanation for the frequent curetting of chronic sinuses by surgeons instead of opening the sinus and removing the diseased bone.

It is common practice for such poor surgical judgment to complicate a condition already serious. The blood picture, total white count and differential and temperature chart are often entirely ignored when such surgery is done. The trocar for draining dependent or otherwise troublesome tuberculous abscesses is a forgotten instrument, and if used, is not used intelligently.

The end results of tuberculous joint lesions, as I have been able to observe them in several parts of the country and especially in our own section of the South, are not indicative of the function for which we should strive. It has become fixed in the minds of many of us that the best that can be hoped for in such cases is ankylosis. This view is one that should be corrected, but such a correction can be brought about only if we all meet upon a common plan for the proper treatment of such cases. As the situation stands opinions differ widely, which prevents progress toward a perfect functional result.

All members of our profession must be brought to a full realization that a tuberculous joint is not a localized condition, but a constitutional disease: that it is not sufficient, after a diagnosis is made, to rest the part and apply extension in an indifferent manner until the pain has been relieved and the deformity to some extent reduced and resort to fixation alone. But that extension and freedom from weight bearing should be maintained over a long period of time, certainly not less than two years; that placing the patient in the proper hygienic environment, increasing the general resistance by forced feeding, heliotropy, both local and over the entire body, are as important as local treatment.

We have in our Southern states a climate particularly favorable for the use of heliotherapy. In the city of New Orleans ideal conditions exist for such treat-

ment over a maximum period of time, a longer period of time than any point south or north, even within the boundaries of the State. The following records from the United States Weather Bureau support this claim:

"Normal mean temperature for the average year, 69.2° F. The percentage of all possible sunshine is 57 per cent, that is, over one-half of the sunshine it is possible to get, is always with us. The onset of our cold weather, which is never severe, is very late. The onset of weather below 65° F. is not until November 2, and weather below this average lasts only until March 28. In other words, there are five months only in which the weather is ever below 65° F. and many days in these five months the weather is above 65° F. and only once or twice in the year reaches near the freezing point."

It would therefore be possible to keep sick children in the open, sunshiny air practically 95 per cent of the daylight hours. The mild climate permits sleeping out of doors at night also.

We should be encouraged in striving for a better, if not a perfect, functional result by following the lead of Rollier of Switzerland; Calve of France; Sir Robert Jones of England; Freiberg and Campbell of the South; and Bradford and Lovett of Boston.

#### SUMMARY

(1.) It is my belief that sufficient care is not taken in making a diagnosis in the average case of early joint tuberculosis.

(2.) That the average general practitioner and general surgeon is not fully awake to the importance of early and accurate diagnosis and treatment in such cases nor are they fully conscious of their responsibility as related to the functional end result.

(3.) That the treatment of joint tuberculosis requires not local treatment of the affected part alone, but rigid and long-continued constitutional treatment.

(4.) That protection and extension of tuberculous joints should last over a period not less than two years, especially as regards weight bearing.

(5.) That the promiscuous opening of tuberculous abscesses and haphazard curetting of sinuses is extremely bad surgery.

(6.) That the end result striven for

should not be ankylosis, but a functioning joint. And that it is unfair to hope for such a result if weight bearing is allowed upon an actively diseased bony structure.

#### DISCUSSION

*Dr. Archer O'Reilly, St. Louis, Mo.*—The general practitioner, especially, is very lax in making a diagnosis of tuberculosis of the joint. From our experience in the hospital in St. Louis "rheumatism" seems to be the favorite diagnosis. I trust that those who are doing orthopedic surgery will not make a diagnosis of "rheumatism." The general practitioner should be educated to think of tuberculosis or some other serious condition when he has a case of joint disease, and not give the patient some medicine and call it rheumatism until serious deformity develops.

With regard to opening sinuses, the general surgeon has been taught that an infection should be opened wide and freely drained. In a case of a tuberculous abscess the general practitioner, or surgeon, is prone to open wide the abscess, pack it, leave it that way, and then turn it over to the orthopedic surgeon later to heal.

*Dr. Willis C. Campbell, Memphis, Tenn.*—For many years I have been deeply interested in heliotherapy and have employed this measure as a routine in all cases of tuberculosis of bones and joints when possible. We realize that in many adults we must frequently resort to more radical measures, as we must consider the economical status of the case in question. Tuberculosis in any form should not be considered as a local process, but a general infection if a permanent cure is to be expected. We have employed heliotherapy in several hundred cases, and have concluded that the sun's rays undoubtedly have a definite action on the diseased process. However, a grave error may be committed by depending on heliotherapy alone. The same careful application of orthopedic appliances for the prevention of deformity and fixation is an absolute necessity, as in the past, only such apparatus must be constructed so as to allow insolation of the entire body, and not to the local diseased area, for the beneficial action of the active rays on the entire body, as evidenced by pigmentation, is the real curative agent. Dosage must be worked out on scientific lines for each individual case, which requires constant and painstaking surveillance on the part of the surgeon. In the South heliotherapy can be systematically given for at least nine months in the year and should be more universally employed.

*Dr. F. W. Carruthers, Little Rock, Ark.*—There is one point in reference to tuberculosis of joints which I should like to bring out. The essayists stated these joints should be protected from weight-bearing for at least two years. During a recent visit to Chicago with some orthopedic men when I was examining a patient with Potts disease one of them said to me: "What do you think about this case?"

"It looks as though he is well."

"How long would you keep this case up?" I said I would keep it up at least one year, if not

two, after the symptoms had disappeared. This is the particular point in my mind: to relieve weight-bearing for one or two years after all symptoms have disappeared.

As to the question of diagnosis, the orthopedic surgeon is confronted with an important problem when the question of tuberculosis of joints comes up. The average surgeon says, "You orthopedists regard every arthritis as tuberculous." We know that tuberculosis must be ruled out, and in treating the case I carry out the orthopedic treatment and not the general surgical treatment.

In reference to heliotherapy, I impress upon my patients that in carrying out this treatment I want them to look the color of Mexicans, and that cannot be accomplished with sixty minutes exposure a day. If it does it will take longer than they want to live.

*Dr. W. B. Owen, Louisville, Ky.*—We realize the importance of careful examination and thorough records in attempting to make an early diagnosis. If we omit them, it is not because of ignorance. Probably there are two or three reasons. First, it is carelessness; second, probably laziness; and third, we are attempting or forced to treat a great many people; paying more attention to the volume of practice than to the individual case. Early diagnosis in any disease is very important.

Dr. Campbell has covered in a very elaborate and practical way the advantages of heliotherapy, with which we all firmly agree. Unfortunately there are too few sunny days. Many of the institutions are not so arranged that they can have the advantage of sunshine. While the patient is at home it is difficult to make the family and friends realize the importance of heliotherapy and give it properly.

There is another point in Dr. O'Ferrall's paper to which I desire to refer. All roentgenologists will tell you that the differentiation between tuberculous and luetic infection is that a tuberculous infection shows a localized atrophy and decrease in density, while a syphilitic infection shows an increased density and hypertrophy. That does not always apply, because in many early cases the x-ray findings will be negative, though you have the clinical symptoms of infectious arthritis.

Immobilization and general constitutional treatment should be instituted at once. The source and type of infection can be determined later.

When the x-ray findings are negative, depend upon your clinical symptoms.

*Dr. Earl D. McBride, Oklahoma City, Okla.*—The essayist expressed the hope in the beginning of his paper that general practitioners might reap some benefit from bringing out information regarding tuberculosis of the hip and other joints. Nowadays the medical profession is trying to educate the layman. Only a week ago I made a speech in a church regarding cancer during cancer week, and a short time before that we had tuberculosis week, and so on. But I have heard no one bringing out the subject of joint tuberculosis in Red Cross tuberculosis drives. It seems to me the orthopedic sections of the various medical societies over the country should get busy and take a hand in educating laymen regarding joint tuberculosis. A great many people are opposed to having the joints of their children immobilized.

They say these joints will become stiff. We should educate the laity and not depend upon individual lectures in our offices. If we do this we shall accomplish a great deal of good.

I was impressed with what I saw this summer while in France. All of you who have been there know how thoroughly the people submit to treatment. They use heliotherapy very successfully, because patients go to be treated with the full expectation of doing exactly as they are asked to do. Patients are put flat upon their backs for a certain period of time. They are not kept in bed. They are given a donkey and cart and drive over the plains and seashore sands. Spitz in his Vienna clinic had 150 cases, mostly children, on his sun roof. If the lesion is in the spine or below the twelfth dorsal, he strings them up by the feet. If the lesion is in the cervical region or down as far as the twelfth dorsal, he strings them up by the head and lowers the feet. They submitted to that treatment without trouble, and looked not only like Mexicans, but sometimes like Negroes. They were black. He is getting very good results from his treatment.

We should as an orthopedic section begin to show our influence in educating laymen in regard to the diagnosis and early treatment of tuberculous joint lesions.

*Dr. Edward S. Hatch, New Orleans, La.*—It is strictly the duty of men all over the country who are doing bone and joint surgery to educate not only the doctors, but the laity in reference to this line of work. Too much can not be said on this very point. We get these cases when the golden opportunity for securing good results has been lost, simply because a wrong diagnosis was made or inadequate treatment given after diagnosis. We should spread this propaganda at every possible opportunity, because it is our duty to teach people as well as doctors that these cases can be helped and that the joints can be made to function infinitely better than they have done in the past.

*Dr. O'Ferrall (closing).*—One of the first things we should attempt is to get together on our own methods of treatment. While I believe thoroughly in the education of the laity, the general practitioner and general surgeon, this is our first step. Methods among orthopedic men differ widely. If I, for instance, say that a child that has a tuberculous joint must be given rest and freedom from weight-bearing for two years or longer, if the parents have not been educated, they are going to object unless I am supported by other orthopedists. If that is the incorrect thing to do, it discredits me. If I should see a patient in my city, and you should differ with me in regard to treatment we have not gained anything. The first thing is to get together on a recognized treatment and support each other in that treatment. We may lose a few dollars by it in the beginning. If I make an effort to put a child at rest for two years and the parents refuse to have it done, they may take the child to another man. He may put on a plaster spica, and charges a fancy fee. He has made some money and I have lost it, but the most important thing is that the child has been permanently damaged. Unless we can get together on a recognized treatment we can not accomplish much with the laity.

## TYPES OF INJURIES MET BY THE RAILROAD SURGEON\*

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In reviewing the cases seen within the last year as a result of railway accidents, we have been impressed with the predominance of certain characteristics of the injuries in general as well as by the varying types of injuries that have been encountered.

In considering injuries received on any public carrier we should, of course, bear in mind the injured, whether he be an employee, a passenger or "other person." Recent reports of the Interstate Commerce Commission show that "other persons" outnumber in injuries and in fatalities both passengers and employees, and it is further shown that over 85 per cent of the other persons are trespassers, so called. In our own experience the severe injuries and the fatalities were found almost entirely in those classed as a rule as trespassers, there being one fatality in an employee who was riding as a passenger. In jumping from a rapidly moving train he received such injuries to the skull that he died in convulsions and coma within three hours.

The injuries received by the employees were as a rule comparatively slight, although there were several who received multiple wounds. In all cases seen in passengers the wounds were classed as slight or moderate in severity. In the matter of the final adjustment of any claim for injury the relation of the injured to the carrier as well as his mental attitude regarding the nature, extent and severity of his injuries are factors that enter in a large measure and must be given due consideration.

As to the characteristics of the wounds in general, the most striking was the relatively large number who received multiple injuries. One of the employees had nine

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