

reactive x-ray picture, point toward the Tbc. lesion found to be present. It probably has suggested itself to the reader that as the operative treatment was much the same, the matter of a pre-operative differential diagnosis is less important. In this respect, two aspects should be emphasized, one the relative course and prognosis without operation, *i.e.*, the degree of necessity for operative intervention; and second, the great difference in the importance of the time of election for such intervention. In meeting these considerations, the proper diagnosis is highly desirable, and herein lies the ultimate justification for this paper.

This study was not taken up with the impression that it had to do with unique or particularly rare conditions. Of course, giant-cell sarcoma is not an every-day tumor, and has a predilection for the tibia, but it might well be expected in any other bony location. The records of the hospital were found negative for an occurrence in the upper femur, but that may be of minor importance. On the other hand, it was conjectured that, although Tbc. is uncommon in the diaphysis, the cancellous bone of the great trochanter provided the same favoring conditions for the lodgment of the bacillus as did the epiphysis, possessing, like them, a separate center of ossification, and that therefore Tbc. lesions would not be infrequently found. Curious to know the course of some of these, the writer consulted the hospital records, but with surprisingly meagre results. An index of all diagnoses made on ward patients since 1870 showed Tbc. of the great trochanter occurring just five times. A careful search was then made through the files of all cases of Tbc. seen in the Out-Patient Department in the last ten years. The diagnosis of bone or joint Tbc. in some form had been made 3,062 times in that period and only three times did the diagnosis of Tbc. of the great trochanter appear. Two of these patients were among those found in the ward files, giving a net addition of one. A search through the files of osteomyelitis revealed one case with such location in which the causative organism had not been determined, and etiology was unknown, therefore possibly includible in the Tbc. group, making seven. None of these were operated on in an early stage, all developing an abscess, breaking down spontaneously, with a resultant secondary infection, persistent sinuses, and a prolonged course of drainage and recurring abscesses, in spite of

treatment. As regards the above statistical evidence, it is possible that such cases may have been unrecognized, and diagnosed as hip-joint disease, or simply as "Tbc. of the hip." If it may be assumed from the course of the above seven cases that the lesion eventually breaks down, it would seem impossible that such lesions should ultimately escape proper diagnosis and classification. Even if an occasional case resolves and cicatrizes spontaneously, it seems proper from the above investigations to draw the following two conclusions: (1) that Tbc. lesions of the trochanter are quite rare, and (2) that when present, they should be given surgical intervention before the sinus stage has been reached.

No cases with similar diagnosis were found reported in the current medical literature for the last ten years. Half a dozen standard textbooks made no mention of similar incidence of either disease. Goldthwaite, Painter and Osgood report a case of Tbc. of the greater tuberosity of the humerus without arthritis, which may be comparable to Case 2. Dr. R. B. Osgood has told the writer of a case in his private practice treated for some time for a gluteal bursitis, but in which repeated x-rays finally showed a lesion of the trochanter which proved Tbc. and responded as satisfactorily to operative treatment as did this one.

In concluding this study, the writer wishes to mention his obligation to Dr. R. B. Osgood for many helpful suggestions in regard to its preparation.

EMPHYEMA. REPORT OF CASES OCCURRING AT BOSTON CITY HOSPITAL, ASSIGNED TO THE WRITER IN 1920.

By J. C. HUBBARD, M.D., BOSTON.

I AM to report, this evening, on the cases of empyema referred to me during the past year. If I wished, I could compile tables of statistics from these cases which would make you dizzy, but when all was done, they would amount to little, for the number of cases is too small to be of any more importance than suggestive value. and because it is impossible to reduce to tables several of the most important factors—the patient's resistance and the virulence of the particular form of bacteria. We know how the epidemics of pneumonia and "flu" have varied in virulence from time to time, and from place to place. Deductions from tables of cases of

empyema, therefore, should be made from large numbers, covering a considerable length of time. I am, therefore, refraining from burdening you with a lot of valueless tables.

There are, however, a few points which are interesting and perhaps suggestive. There were thirty-five cases, of whom four died. Let us look more closely at these fatal cases.

The first was a very sick man whom we had been watching along from day to day in an attempt to pick the right moment for emptying his chest. He died almost immediately after the insertion of a catheter. The wrong time evidently was chosen, and this death must be classed as due to operation.

The second case is of a woman whose back became infected through the puncture hole of an aspiration on the medical service, culture gave hemolytic streptococcus. Erysipelas developed on her back and she died twelve days after a rib resection.

The third died of auricular fibrillation when he was free from fever and was having no discharge from the incision. His only operation had been the insertion of a catheter under gas anaesthesia.

The fourth case was that of a woman who had been sick thirteen weeks before entrance. A catheter was inserted, and then a piece of rib resected. She never had any resistance, and gradually failed, overcome by septic absorption, and died three months after entrance.

The first death was due to bad judgment. The second was due to erysipelas. The third was due to auricular fibrillation, and the fourth to septic absorption. This, luckily, and I say luckily advisedly, is a good showing.

It may be of interest to review for a moment the different bacteria found on culture, though no deductions of any importance can be drawn from them. Thirteen were due to streptococcus hemolyticus, eight to pneumococcus, type 1, and the others scattered. When I began with the empyema cases, I thought that I could tell from the gross characteristics of the fluid in the chest what the particular germ was which was causing the infection. Soon I discovered that I was wrong, and that by culture alone was it possible to tell.

Because of various reasons, it was impossible to treat the cases along any definite plan, for the routine was frequently upset through the quarantining of wards because of smallpox and

the contagious diseases, every one of which seemed to be present in the hospital. We simply did the best we could. The treatment was therefore, not according to the best technique of any particular method.

Now, how did the cases come out, as far as a pneumothorax was concerned, after this what might be called irregular treatment? In twenty-five cases, there was a definite statement about the presence or absence of a pneumothorax as shown by an x-ray taken usually just before the patient left the hospital. Mention is made of the x-ray findings in two of the cases that died. One had a catheter inserted, and then a rib resection. About a month after the resection, a small pneumothorax was present. A month later, the report of a second x-ray was made without mention of a pneumothorax. A month after this last x-ray, and two months after the earlier one, the patient died. It seems reasonable to believe that the pneumothorax had nothing to do with the death.

The second case had a pneumothorax ten days after a rib resection. Four days later, she died of erysipelas.

Five cases that recovered had a pneumothorax in the last picture. Two of these, after having left the hospital healed, returned in two to six months because the wound had broken open and discharged. One of these had had a primary rib resection and one had insertion of a catheter. The pneumothorax with the other cases apparently was of no importance. One reported that she had just married and was well. Twenty cases had no pneumothorax, the duration of time elapsed between operation and x-ray varied from twenty-two days to eight months.

CASES OF PNEUMOTHORAX.

I. Pneumonia—pneumococcus type I. Empyema. Catheter followed by resection; x-ray taken twenty-two days after resection, shows small pneumothorax. Another, few days later, no mention of it. Writes, seven months after discharge, that she is well, just married, and keeping house.

II. Empyema—streptococcus hemolyticus. Primary resection. X-ray one month later. Pneumothorax practically all of left side. Left the hospital, wound closed. Six months later, as it broke out, had to return to hospital.

III. Pneumonia. Empyema. Pneumococcus type IV, apparently only trochar. Pneumothorax.

IV. Pneumonia. Empyema. Pneumococcus type III. Catheter. Two months after dis-

charge had to return with collection of pus in chest.

V. Empyema. Streptococcus hemolytic. Catheter, and later, rib. Twenty days after rib, had a pneumothorax, lung expanding.

It is interesting to see that the type of operation had little to do with the presence of a pneumothorax. Catheter only two, catheter and rib resection four, primary rib resection one.

Four cases of the series had to return to the hospital after having been discharged healed. Two of these cases when discharged the first time had a pneumothorax. The third case had no pneumothorax. The fourth case probably was without one, as no definite mention is made of its presence. It would seem from this, that the presence of a cavity in the thorax, though the sinus to it may have healed, is a danger. Although some cases, healed but with an unobliterated cavity, have no further trouble. Others return to the hospital because the sinus originally closed, has broken open and discharged.

There are records of the type of operation in thirty-two cases. Of these, eleven had a primary rib resection, twelve the insertion of a catheter with, later, a secondary rib resection, and nine a catheter insertion only. Of these, seven recovered and two died—one immediately, and the second of auricular fibrillation when surgically progressing favorably. That so many made a satisfactory recovery with nothing more than drainage through a catheter, is interesting.

To a questionnaire sent out, sixteen cases answered. Thirteen were well; three, however, had to return to the hospital because the wound which had been healed, had broken open and discharged. The length of time since discharged, varied from five to nine months. Apparently the thirteen well cases were really well, though there was an occasional mention of some discomfort in the side, with a little cough. The folly, however, of believing that end results can be determined in this length of time is shown by the following case. On July 8, the patient was discharged healed. In August, the wound opened again, but finally healed. In November the wound opened again and she returned to the hospital. All this time she had considered herself well. The occurrence of a few cases like this, shows the folly of trying to draw conclusions about end results till many months have elapsed.

Before closing, I will answer the question which might well be asked, how I should now treat an ordinary case of empyema. I cannot back up my opinion by figures, but I have, in my own mind, a fairly definite idea of the treatment. In the first place, an empyema is no longer the emergency it was formerly considered. I believe in not operating for several days, to try the effect of repeated aspirations, and later, to put a catheter into the chest through a trochar, under gas oxygen anaesthesia. The end of the catheter is clamped so that the method is a closed one for a few days. I do not believe it is necessary to work hard or bother the patient much with attempts to keep a tight joint, for long. Some cases will recover with no further treatment. Others however, will not drain properly or show evidences of absorption. These require the resection of a piece of rib, which operation I should do again under gas oxygen.

I believe irrigations and installations of Dakin's solution are of benefit. Unless the proper careful technique is carried out, this solution is no better than any other.

NOTE.—I am indebted to Dr. Elsworth for the interpretation of the x-ray plates.

THE PRESENT STATUS OF THE RADIATION TREATMENT OF HYPERTROPHIED TONSILS.*

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PROBABLY no recent development in radiation therapy has so quickly penetrated to the laity and aroused so much discussion as the question of the radiation treatment of hypertrophied tonsils. As in any new development of the science, there is always danger of exploitation by x-ray and radium enthusiasts on the one hand, and of opposition due to ultra conservatism on the part of the supporters of older methods on the other.

It has been known for some time that the x-ray has a selective action on certain types of tissue. Lymphoid tissue is one of the types so affected. Very small doses of x-ray will stimulate the growth of lymphoid tissue, and larger doses will inhibit or destroy it. Murphy¹ and others have shown that this selective action of

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