An Address ON THE SURGICAL FORMS OF ILEO- CAECAL TUBERCULOSIS.

DELIVERED BEFORE THE MEDICAL SOCIETY OF LONDON,
DECEMBER, 1906.

BY DR. HENRI HARTMANN,

ASSOCIATE PROFESSOR IN THE MEDICAL FACULTY OF THE UNIVERSITY
OF PARIS; SURGEON TO THE LABIBOISIÈRE HOSPITAL; AND
MEMBER OF THE SURGICAL SOCIETY OF PARIS.

MR. PRESIDENT AND GENTLEMEN,—When you were so kind as to invite me to give an address to your old and renowned Society, I was greatly honoured, though I was tempted in the first instance to refuse, for I feared to bore you, speaking in bad English, on a subject with which you are already acquainted. I decided, however, to accept your invitation, as I was convinced you would excuse any defects in my address, knowing well with what indulgence and courtesy you treat the shortcomings of your guests.

My reason for selecting the subject of surgical forms of tuberculosis of the caecum, or the forms amenable to operative interference, is because I think they occur more frequently than is generally recognized; and, moreover, when suitable treatment is followed patients thought to be incurable may be cured.

It is only about fifteen years ago that the surgical forms of ileo-caecal tuberculosis became known; up to that date they were confused with the other forms of intestinal tuberculosis, which only physicians were called upon to treat. The words "intestinal tuberculosis" evoked always the idea of diffuse lesions, of numerous ulcerations, more often secondary to a pulmonary tuberculosis already advanced in its evolution.

In the meantime some writers had described cases of localized tuberculosis of the caecum. One of your countrymen, Ward, in 1849, pointed out in pathological specimens the existence of localized tuberculous deposit, causing thickening of the coats of the caecum. In France, Leudet and Lasègue had described, from a clinical point of view, tuberculous typhlitis. But until the present day, when intestinal surgery has undergone the development with which you are acquainted, we hardly thought that some cases of caecal tuberculosis were amenable to operative treatment.

The physicians alone seemed able to treat them, for two reasons: First, because modern intestinal surgery was at its beginning and could not venture upon complex cases of ulceration, of perforation with pyostercoral fistula, and extensive inflammatory thickening. Secondly, because the forms most accessible for surgical treatment—those strictly limited to the caecum—were mistaken for cancer and removed as neoplasms, no one dreaming that the tumours might be of a tuberculous nature.

The progress of intestinal surgery, the increasing use of short-circuiting, and of excision of intestines, has made it possible in an indirect manner to operate upon extensive lesions accompanied by intestinal fistula. Moreover, the progress of pathological anatomy, showing the tuber-

culous nature of certain tumours, has taught us that we often remove tuberculous tumours, instead of neoplasms, as we thought.

As a general rule the caecum is more often the seat of tuberculosis than any other part of the intestines. In the statistics of Fenwick and Dodwell we find out of 100 cases of intestinal tuberculosis, 85 cases in which the caecum was affected; and in 9.6 per cent. of these 85 cases the caecum was alone affected. The frequency of localization of tuberculosis in the ileo-caecal region has been attributed to the fact that there the chyme makes its way more slowly than in the other parts of the bowel, so that it comes into more prolonged contact with its coats; the caecum also has a special circulatory system.

What is true regarding tuberculosis in general is much more so in regard to surgical forms of tuberculosis. Ileo-caecal tuberculosis is much more amenable to surgical treatment than that which attacks other parts of the bowel.

It is of these surgical forms of ileo-caecal tuberculosis that I wish to speak to-day, leaving aside tuberculosis of the appendix, which is treated in the same way as ordinary appendicitis. Appendicectomy in such cases does not present anything particular, and more often it is only the microscopic examination that shows us, instead of an ordinary appendix, a tuberculous one.

The surgical forms of ileo-caecal tuberculosis were not described previous to the last fifteen years. Czerny in Germany, Durante in Italy, had made a few excisions of tuberculous caecums. But we must go back only to 1891 to see Billroth in Vienna, and Hartmann and Pilliet in France, simultaneously insisting on the fact that in the caecum tuberculous lesions exist which are mistaken for cancerous diseases. Since that date numerous works have been published on the question. Among the most important are those of Conrath in Germany and, in France, the clinical lectures of Dieulafoy, the papers of Demoulin, Bérard and Patel, etc.

From the point of view of pathological

anatomy, the surgical forms of ileo-caecal tuberculosis reveal themselves under two different aspects: First, the ulcerative caseous tuberculosis which is more often accompanied by pericaecal inflammation, and is sometimes described for this reason as the entero-peritoneal form of ileo-caecal tuberculosis. Secondly, the hyperplastic form which, by its aspect and evolution, has a strong resemblance to certain strictures of the rectum, formerly described as inflammatory or syphilitic strictures, and which recent research has often shown to be of tuberculous origin.

1. *Entero-peritoneal Form.*—In this form the caecum alone may be involved; it is the exception. In many cases the lesion occupies at the same time the end of the ileum, which, like the caecum, is sloughed away by the ulcers. The appendix is often destroyed, the whole of the ileo-caecal region is lost in a mass of adhesions, interspersed with caseous matter, and even purulent tuberculous cavities, communicating sometimes with the intestinal tract. When these tuberculous abscesses advance towards the abdominal wall their rupture is followed by a pyostercoral fistula, which usually occurs in the right iliac fossa, but which is sometimes found in the back, at the umbilicus, etc. Contrary to what we observe in the tuberculous ulcerations of the small bowel, the ulcers, when they heal, do not form fibrous strictures.

2. *Hyperplastic Form.*—The hyperplastic form, which I described with Pilliet in 1891 as tuberculous typhlitis

Fig. 1.—Hyperplastic tuberculosis of the caecum.

simulating neoplasms, is the most important to the surgeon. It is generally limited to the caecum, it rarely involves the ileum, and then only to a slight extent and at a late period; moreover, when this involvement takes place, the lesions are different in character, the ulceration destroys the ileo-caecal valve and spreads to the adjacent parts of the ileum, but the hyperplastic process remains confined to the caecum.

The hyperplastic lesion (Fig. 1), beginning in the caecum close to the valve, gradually involves all that part of the bowel, and when it spreads it does so in the direction of the colon, seeming to be a descending tuberculosis.

In a patient whom I examined, and who was operated upon by my assistant, Dr. Cunéo, the lesions, which left the end of the ileum quite intact, had spread over the end of the ascending colon, and even to the angle of the transverse colon (Fig. 2).

In a case operated on by Roux (of Lauzanne) the lesion had extended much more considerably, and the surgeon was obliged to remove with the caecum the whole of the ascending colon and a part of the transverse colon.

Besançon and Lapointe have seen the whole of the large intestine as far as the sigmoid part involved by the hyperplastic process.

Exceptionally the hyperplastic tuberculosis of the caecum is associated with other hyperplastic tuberculosis of the colon, as we have observed at the *post-mortem* examination of one patient (Figs. 3, 3a, 3b, 3c).

In this form of tuberculosis, the caecum appears externally increased in volume, more or less mobile in the iliac fossa, and often included in a fibro-adipose mass which attains a thickness of 3 or 4 cm. (Fig. 4).

This fibro-adipose deposit can be compared to that observed around the kidneys in calculous pyelitis, and is the manifestation of a chronic inflammatory process. It may spread as far as the spinal column, and contains lymph glands.

The regional lymph glands are involved, and are more voluminous than in cancerous degeneration. As a result of the chronic inflammation of the mesocolon, whether or not there is a fibro-adipose thickening, a retraction of the tissues is sometimes produced which displaces the colon and the caecum upwards. The ileum, instead of being at right angles to the caecum, then passes upwards for a length of 8 to 10 cm., and seems to continue the direction of the colon.

When the intestine is opened we find the coats have become rigid with much thickening; its cavity has disappeared to a great extent; the cul-de-sac normally formed by the caecum is effaced, and is only represented by a slight depression. The stricture will generally admit the index finger; it may be more marked, not thicker than a goose's quill; its maximum is reached at the valve, which is shrivelled up, rigid, and sometimes impossible to recognize. Exceptionally there is a dilatation of the diseased parts.

The mucous membrane is more often ulcerated; sometimes we find villous vegetations, granulations and projecting polypi which may be as big as a hazel nut, growing above the ulcerations but not ulcerated. These vegetations, which extend to a certain distance, bring to mind certain forms of laryngeal tuberculosis (Fig. 5). The appendix, lost in the inflammatory exudation, is often almost intact; sometimes it is thickened and in some cases ulcerated. When it is diseased the lesions affect its proximal part, continuing directly the lesion of the

caecum, leaving the end intact. In the ordinary appendicitis the appendix tends to be obliterated at a point more or less approaching its caecal implantation; in the hyperplastic tuberculosis the appendix is always open, and often communicates with the caecum by an enlarged orifice.

In connexion with the usual form of hyperplastic tuberculosis of the caecum, there are a few exceptional forms to be noticed. The lesion may be limited to the ileo-caecal valve. In a case of Jaboulay, there was a tumour in the shape of a cauliflower implanted on the upper lip of the valve. In another case of Souligoux it took the form of an orange ending in a point with an orifice in the inferior side, and projecting in the caecum like a shark's jaw.

I must also mention a case that was operated on in my hospital by my assistant, Dr. Michon, in which the lesions were confined in the lower part of the ileum; the ileo-caecal valve, thickened and deformed, made a circular projection into the caecum.

Microscopically, the lesions differ from ordinary tuberculosis because they are neither entirely ulcerative nor destructive. There exist with tuberculous lesions, sometimes slightly developed, other modifications of the intestinal wall due to a defensive reaction of the tissues, showing itself to the naked eye by the thickening of the intestinal wall, and by the usual development of a new adipose formation.

The tuberculous lesions may be developed at the surface of the mucous membrane, or chiefly in the subserous coat. When the mucous membrane is especially affected the ulcerations are more or less deep, very exceptionally reaching as far as the serous membrane, which may be perforated; as a rule, however, they stop at the muscular coat.

We find between the glands and in the tissue of the ulcerations a great quantity of round cells, with here and there some giant cells and in some parts caseous deposits. The most extensive lesion is the diffuse round-cell infiltration, which is the chief of these tuberculous lesions (Pilliet). This round-cell infiltration continues in the submucosa, where we find also giant cells and caseous tubercle; it spreads through the muscular coats, following the lymph vessels and extending again in the subserous tissue (Fig. 6).

In a few cases the mucous membrane is not ulcerated, and we find two layers of infiltration—one in the submucosa, the other in the subserous coat (Fig. 7). Together with these tuberculous lesions showing the peculiarity of being associated with a considerable round-cell infiltration, we find other lesions which are simply inflammatory; for example, the sclero-adipose thickening, and the production of polypi and vegetations, nearly always present in the disease. These polypi have the ordinary structure of intestinal adenoma and are not tuberculous.

In connexion with hyperplastic tuberculosis of the caecum I should like to discuss certain strictures, called inflammatory, which have been described by Gerard Marchand and Demoulin, and by Schwartz. Twice I have met with such strictures. Though microscopic examination and inoculation in both cases failed to prove the tuberculous nature of the lesions, and though the complete recovery of the patients after the operation and their general good health were entirely in favour of simple inflammatory lesions, still, in the first case, the patient returned after nine years with phthisis, of which she died ten years after the resection for the stricture, without the

Fig. 2.—Hyperplastic tuberculosis of the caecum and ascending colon.

least intestinal trouble; in the second case, the patient remained well for six years after the operation, but during the seventh year a new suppuration of the pelvis supervened, from which she died. At the *post-mortem* examination mesenteric glandular tuberculosis was found. It can therefore be affirmed that both these patients (the first ten years after operation, the second seven years afterwards) succumbed to tuberculous lesions.

The question therefore arises, Is it a simple coincidence or was the primary lesion, in appearance non-tuberculous, in reality of bacillary origin? We are tempted to believe it, inasmuch as to-day the work of Poncet of Lyon has attracted our attention to certain forms, before unknown, of inflammatory tuberculosis very different to ordinary tuberculosis from the pathological point of view.

If this supposition be confirmed, hyperplastic tuberculous lesions will be increased by the addition of a number of so-called inflammatory strictures. In any case, clinically or therapeutically, or even from the point of view of pathological naked-eye anatomy, these strictures remind us of hyperplastic tuberculosis.

Etiologically, ileo-caecal tuberculosis, in its surgical forms, is equally observed in both sexes. Conrath has recorded cases in 36 males, 41 females; Demoulin in 48 males, 35 females; my cases number 105 males, 112 females.

The disease seems to present its maximum frequency between the ages of 20 and 40; before 20 and after 40 it becomes rare. We find only few cases between 10 and 20; however, Guinon and Pater have published a case in a child 4 years old.

The patient may be affected with lung tuberculosis, but generally to a slight degree or even not at all. There is, between localized caecal tuberculosis and ordinary tuberculous enteritis, a great difference from this point of view, the tuberculous enteritis appearing in the late stages of lung tuberculosis. It seems that infection is brought about by ingesta, and that it localizes itself in the caecum because of the stagnation of intestinal contents which favours inoculation.

Clinically, the surgical forms of ileo-caecal tuberculosis manifest themselves chiefly by two kinds of symptoms. Some of the cases exhibit the reaction of the peritoneum and its surroundings, simulating more or less appendicitis. Others are the result of intestinal stricture, and remind us of neoplasms, and do so all the more because direct examination nearly always allows us to state the existence of a tumour.

In some cases the symptoms of the peritoneal reaction increase, and the iliac fossa is filled with an inflammatory mass; abscesses and fistulae are developed. In other

cases, on the contrary, the symptoms of peritoneal reaction are slightly marked, there being simply a tumour and signs of intestinal stricture.

Clinically in the entero-peritoneal form, which is characterized anatomically by the presence of numerous ulcerations in the ileo-caecal region with inflammation and even with pericaecal suppuration, there is a collection of symptoms corresponding to the lesions. The patient has sometimes, at the beginning of the disease, signs of tuberculous enteritis; the stools are frequent, copious, liquid, and contain some blood. The attention is then attracted to the ileo-caecal region by an acute attack of pain in the right iliac fossa. This painful attack is sometimes the first symptom; I have sometimes been tempted to consider such an attack to be due to appendicitis, and all the more because I was able to find a tumefaction in the iliac fossa. The rate at which the disease increases is, however, as a rule, slower than that

of appendicitis, and the tumefaction, instead of diminishing after the acute period, persists. The disease generally progresses, the swelling becomes diffuse, extends to the median line towards the pelvis, and then becomes accessible to rectal or vaginal examination. A slow suppuration develops and discharges spontaneously through the skin above the femoral region. There one or more fistulae are found through which a loose serous pus is discharged, mixed with faecal matter; these fistulae

extend sometimes as far as the umbilicus and lumbar region, etc. Sometimes these abscesses open into the intestine, and their evacuation is accompanied by purulent discharge per anum.

The general symptoms increase by the constant persistency of the suppuration and also as the result of the evolution of a pulmonary tuberculosis, usual in these patients. Exceptionally the abscess bursts into the peritoneal cavity, and death occurs within two or three days.

Clinically the hyperplastic form of tuberculosis of the caecum, which is the most interesting form, has, as a rule, an insidious onset, with loss of appetite, slow digestion, and disagreeable but vague sensations in the right iliac fossa. For months this condition

remains nearly stationary, improving sometimes temporarily after a course of appropriate treatment. Then the disease declares itself. The intestine becomes clogged, there is alternating constipation and diarrhoea, sometimes attacks of colic two or three hours after meals, accompanied by local meteorism, peristaltism, and gurgling, which indicate generally the end of the attack. In other cases the signs of intestinal stenosis are less marked or even entirely absent. The attention is simply attracted by

Fig. 3.—Multiple hyperplastic tuberculosis of the caecum and of the colon (*post-mortem* specimen).

Fig. 3a.—Caecum in the above case.

intermittent pains in the right abdomen, by recurrent acute attacks, simulating appendicitis. As a rule the patient does not recover entirely in the interval. In certain emaciated patients mere inspection shows a swelling which makes us think immediately of the presence of a tumour; this projection may be absent when the abdominal wall is thickened, or when there exists a slight meteorism, or when the tumour is small, but by palpation it can generally be felt. The tumour is sharply outlined at its lower end, but it is more difficult to follow its edge at its superior part where it becomes continuous with the colon; it is slightly mobile and tender.

Sometimes the tumour, instead of occupying the normal position of the caecum, is higher up at the upper part of the iliac fossa, or even higher, above the iliac crest. This is a point that Obratzow has well defined, and one which has been noticed in several of my patients, the ileum ascending about 8 to 10 cm., and, when there is a marked stenosis, forming at the lower part of the iliac fossa under the raised caecum a hard sausage-shaped mass corresponding with the contracted intestine, or a coil animated by peristaltic contractions. On percussion the caecal tumour does not give the normal sound of the intestine; there is some dullness, and sometimes a sound of a special character.

The evolution of this hyperplastic tuberculosis is a slow one, inasmuch as the lungs are often intact for a long period. Gradually the obstruction advances, the general health is impaired, and the emaciation accentuated.

Sometimes the tuberculosis extends to the peritoneum, and the disease takes some characteristic resembling the entero-peritoneal form. This is exceptional. Or a pulmonary tuberculosis is developed, from which the patient dies. The disease never retrocedes, and I also agree with Bérard and Patel "that spontaneous evolution of the hyperplastic tuberculosis of the caecum, such as we know to-day, is fatal."

The average duration of the disease, according to Conrath, is two and a half to three years. It is in reality very difficult to state a definite period, because its onset is

insidious, and there exists sometimes a previous simple enteritis. What we must remember is that, in the absence of complications, it has the appearance of being a chronic disease, and that the patients only die after a long time by the progress of cachexia, by a secondary pulmonary tuberculosis, or by a diffuse tuberculosis of the intestines or of the peritoneum.

In diagnosis the entero-peritoneal form of ileo-caecal tuberculosis can be mistaken for appendicitis, but the absence of resolution of the indurated mass, the subacute attacks of inflammation, the concomitant diarrhoea, and the frequent coexistence of pulmonary tuberculosis should guide one to a correct conclusion.

When fistulae exist, there is sometimes hesitation between tuberculous lesions and a simple pyostercoral fistula following an appendicitis. The history of the disease and an examination for the tubercle bacillus will often enable us to distinguish these affections.

Actinomycosis can only be suspected when the abdominal walls are rigid and board-like. When sinuses appear and discharge a reddish-yellow puriform material, the characteristic sulphur-like granules are usually

seen, and with the microscope we can verify the presence of the actinomycetes. It must also be remembered that some sinuses of bony origin can also give rise to errors.

The hyperplastic form of caecal tuberculosis may be mistaken for neoplasm. The most distinctive features in the diagnosis of this form of the disease are: (1) the evolution, in neoplasms the obstruction increases more rapidly; (2) the characters of the tumour, which is more nodular in carcinoma and does not preserve so much the normal form of the caecum as in tuberculosis. It is also evident that the presence of pulmonary disease will favour the diagnosis of

caecal tuberculosis, but this pulmonary disease, fairly frequent in the entero-peritoneal form, is on the contrary rare in the hyperplastic tuberculosis, especially at its onset. In the same way the detection of tubercle bacilli in the stools, which is of positive value, is seldom seen, except in ulcerative forms.

Fig. 3b.—Hyperplastic tuberculous stricture of the ascending colon (same case).

Fig. 3c.—Hyperplastic tuberculosis of the transverse colon, with subserous ulceration (same case).

Tuberculin is no longer used. In one case Dieulafoy relied for diagnosis upon the positive result of sero-diagnosis by the method of Arloing and Courmont. This method of investigation has only a negative value, because it does not allow us to exclude the existence of other tuberculous foci.

Practically, moreover, the diagnosis between hyperplastic tuberculosis and carcinoma has no interest, because in both cases operation is indicated. It is the same in cases of inflammatory strictures, these being, perhaps, the result of a special form of inflammatory tuberculosis already described.

The treatment of ileo-caecal tuberculosis is surgical. You must always open the abdomen.

In cases of glandular tuberculosis with subserous nodules, signs of slight localized peritonitis, without symptoms of lesions in the intestinal mucous membrane, the simple explorative coeliotomy may be followed by cure. I have had the opportunity of observing such a case, the patient remaining well after two years.

Crouzet, in his recent dissertation, has published several similar observations. Campiche has collected 19 cases, with 15.7 per 100 of permanent cure. It is evident that after such operations an appropriate general treatment is quite necessary. More often, however, in the entero-peritoneal form and in the hyperplastic tuberculosis, we have to do a more extensive operation.

I have summarized from the literature on the subject 229 operations:

9 partial excisions of the caecum, 8 cures, 1 death.

78 resections with end-to-end anastomosis, 59 cures, 19 deaths.

19 resections with end-to-side implantation, 16 cures, 3 deaths.

31 resections with side-to-side anastomosis, 26 cures, 5 deaths.

10 resections in two sittings, 7 cures, 3 deaths.

29 short-circuitings (ileo-colostomies), 25 cures, 4 deaths.

9 unilateral exclusions, 8 cures, 1 death.

22 bilateral exclusions, 20 cures, 2 deaths.

Lastly, 22 patients have undergone multiple operations, 14 cures, 8 deaths.

Total, 229 cases operated on, with 46 deaths.

When I add that many patients have succumbed more or less lately from pulmonary, intestinal, or peritoneal tuberculous complications, it seems at first that the results are not good, but in reality they are much

better than these statistics *en bloc* would lead us to suppose.

Intestinal surgery has in the last few years made such strides, and its results have so much improved, that now the question is quite different. This is evident when we divide our statistics of resection into two parts: the cases operated on before 1900 and those operated on after 1900.

Before 1900, 73 cases, 22 deaths = 30 per 100.
After 1900, 58 cases, 7 deaths = 12 per 100.

Personally, I have made 7 resections for tuberculous disease with 1 death, and that was a case operated on

before 1900; all the cases operated upon after 1900 have been cured.

I think that, in the future, I shall obtain better statistics than those I am now able to publish, and as the disease when left to itself is always fatal, I advise operation in all cases.

The question next arises as to which operation is to be done for the condition. In the hyperplastic form of caecal tuberculosis I advise resection.

The method of ablation in two sittings, of which the advantages are appreciated in removing tumours of the colon, and in those of the caecum accompanied by almost complete obstruction, seems unnecessary in the tuberculous disease of the caecum, where the obstruction is never extensive.

Through an incision in the iliac fossa we can reach the diseased caecum, and take it out of the abdomen, limiting with gauze the field of operation. The breaking-down of adhesions does not present great difficulty.

It is important to remove, with the caecum, the glands generally occupying the ileo-caecal angle, which are always enlarged and often caseous. The resection performed, we may reunite the ileum and the colon end to

Fig. 4.—Ileo-caecal tuberculosis. There is a large fatty deposit around the caecum and an ulceration in the lower part of the ileum.

Fig. 5.—Hyperplastic tuberculosis of the caecum.

end or end to side. I prefer to close the cut intestines and to do side-to-side anastomosis (Fig. 8). To unite the two openings I use, as in all my gastro-intestinal work, two sutures, both continuous. The inner one includes

button are then united; the purse-string suture is unnecessary, the opening of the gut having exactly the dimensions of the cylinder. In the entero-peritoneal form, or when with a hyperplastic tuberculosis there is

Fig. 6.—Ulcerative caecal tuberculosis. U., Ulceration; Musc., muscular coat; F.T., microscopic tubercle.

Fig. 7.—Non-ulcerative caecal tuberculosis. M., Mucous membrane; S.M., submucosa; F.T., microscopic tubercle; Musc., muscular coat; S., serous membrane.

all the coats; the outer, the serous, muscular, and submucous coats. If I use the Murphy button, I think it is a good plan, before closing the ends of the cut intestines, to insert each half of the button through the

an extensive mass of adhesions, resection is dangerous, and the indirect treatment, the exclusion of the diseased parts, is indicated. Generally unilateral exclusion is sufficient (Fig. 10); the bilateral exclusion, with closure of

Fig. 8.—Lateral anastomosis.

open end of the bowel; after closing the cut ends, the button is grasped through the intestinal coats, the projecting cylinder causes the intestinal wall to bulge (Fig. 9); a small incision is made in the bowel with the bistoury or the Paquelin cautery over the cylinder, and the two halves of the

Fig. 9

both ends, is specially used in cases of faecal fistula (Fig. 11); Hochenegg advises bilateral exclusion and leaves both ends of the excluded part opened and stitched

to the skin (Fig. 12); sometimes this practice has allowed a secondary extirpation. Even when secondary

Fig. 10.—Unilateral exclusion with end-to-side anastomosis.

resection is not possible, the improvement is such that the patient has no trouble, gains weight, and, practically, is cured.

Fig. 11.—Total exclusion (previous fistula of the caecum).

This, gentlemen, is what I wished to say about the surgical forms of ileo-caecal tuberculosis, which are now

Fig. 12.—Total exclusion (Hochenegg's method).

well distinguished from other diseases of that region, and in which the various indications for operation seem to us well established.

Clinical Remarks

ON

THE TREATMENT OF SURGICAL TUBERCULOSIS.

By F. J. STEWARD, M.S., F.R.C.S.,

ASSISTANT SURGEON TO GUY'S HOSPITAL; SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

THE striking improvement in the results of treatment of medical forms of tuberculosis, particularly of pulmonary tuberculosis, during the last decade is thoroughly well recognized and appreciated, but it is doubtful whether it is realized by the general body of the profession that during the same period an improvement equally if not more marked has been brought about in the results of treatment of those forms of tuberculosis generally looked upon as surgical. The reason for this probably lies in the fact that in connexion with the treatment of surgical tuberculosis there has been no striking innovation such as the introduction of open-air treatment in the case of phthisis, but that the improvement is due rather to gradual perfection in the details of the application of the principles of surgical cleanliness in the first place, and to advance in pathological knowledge in the second. Both these factors have helped to diminish the number of cases in which a secondary infection by pyogenic organisms is added to the original tuberculous infection, and herein lies the key to the advance that has been brought about. Sinus formation is, however, unfortunately still often spoken of and described in the textbooks as being a stage of tuberculosis, and the bearing on the case of the added element of pyogenic infection is consequently to some extent lost sight of. The great importance of due recognition of this distinction is twofold. In the first place, the principles of treatment that apply to a case of pure tuberculous disease are very different from those suitable to a case of mixed infection, and in the second the prognosis of the case is profoundly affected in an adverse direction when once a secondary pyogenic infection has been added to a tuberculous lesion.

Tuberculosis of bone or joint is, under appropriate treatment, curable in the great majority of cases, but once sinuses have formed and the bone or joint has become infected secondarily, the case is rapidly drifting into the incurable class with the prospect of the eventual onset of lardaceous disease. It is clearly, therefore, of the highest importance to be careful in these cases lest operative measures should lead to a mixed infection, and thus contribute to the production of a condition far more serious than that for which they are undertaken. The risk of such a result is at the present day considered to be almost negligible, and with careful and thorough aseptic technique such should be the case. But that this risk is even in these days very real must be recognized by all who have had experience in the out-patient departments of large hospitals and especially of children's hospitals. I may seem, perhaps, to unduly labour this point of sinus formation; I feel, however, that it is necessary to emphasize its importance, for, great as the improvement has been in the last few years, the results might well be still better, and no doubt will be as it becomes more and more realized that in strict attention to detail lies the hope of success. Infected sinuses are, perhaps, most frequently seen in cases of spinal disease, and, unfortunately, it is in this very class of case that such a result is most to be deplored, for, once a pyogenic infection of the carious vertebrae has taken place, the chance of cure becomes very poor, owing to the impossibility of dealing radically with the seat of disease; whereas, apart from this contingency, tuberculous disease of the spine is of all forms of bone disease probably that which most readily becomes cured.

Attention to the following points in the treatment of spinal abscess and tuberculous collections generally will, I believe, help to minimize the chance of subsequent sinus formation.

PREPARATION OF THE PATIENT.

The patient—I refer particularly to hospital patients—is usually in bad general condition from pain and insuffi-