

separated from the hospital colony, would receive non-criminal habitual drunkards from the courts on indeterminate sentence or commitment.

The commitment of a case of drunkenness to the hospital removes the stigma of a prison sentence, thus insuring the co-operation of the patient if it is a possible thing, and relieving the family of the disgrace which necessarily follows a prison sentence.

It is believed that this plan, allowing for the colonization of non-criminal cases of drunkenness, and proper segregation of the types, will facilitate the study of contrasts in cases, and by furnishing opportunity for scientific study, will contribute to medicine and society new and important knowledge for the better study of the problems of drunkenness.

TUBERCULOUS MESENTERIC GLANDS SIMULATING APPENDICITIS.*

BY DAVID W. PARKER, M.D., MANCHESTER, N. H.

I BELIEVE that it has been the experience of many surgeons when opening the abdomen, perhaps for a supposed appendicitis, to have, at some time, found a comparatively rare and unusual condition instead of the supposed lesion. A case of this kind occurring in my own practice, suggested this paper.

Tubercular disease of the mesenteric glands secondary to general tuberculosis or tuberculosis of the intestines, is so familiar to all that it needs no discussion. There has in recent years, however, come to be recognized among surgeons, a more unusual form of the disease, namely, that of primary mesenteric glandular tuberculosis, so called, cases in which no other tubercular foci can be found on careful general examination, and no others disclosed or macroscopically demonstrated at operation.

These isolated glands or groups of glands may occur anywhere in the mesentery, but most commonly do occur in the mesentery of the ileocecal region. This probably takes place because of the physiological comparative stasis of the products of digestion in a mildly alkaline medium just beyond the ileo-cecal valve (Corner—*Lancet*, Feb. 17, 1912). This stasis favors the passage of tubercle bacilli through the intact mucous membrane of the bowel into the lymph channels and adjacent glands without evidence of present or past ulceration of the mucosa as is supposed may take place by Thiemann (*Archiv. für Klin. Chir.*, Jan. 23, 1910). This supposition of Thiemann, however, is not recognized by many eminent pathologists, for example, Takeya and Dold of the University of Tübingen state that from their latest experiments in regard to the penetrability of the mucous membrane of the intestine to the bacilli that "There is always a coaffection of the intestines and

glands in which the intestinal affection surpasses the glandular disease in intensity and extent."

The question of the mode of infection, however, is not of paramount importance from a strictly clinical standpoint as, if this coaffection primarily exists, in a majority of cases the intestinal elements must have entirely disappeared, as no evidence of it is present in cases reported by competent observers. As Schlossman says: "For him it is enough to be convinced that there is, clinically, an isolated and primary appearing mesenteric glandular tuberculosis, that is, a tubercular disease of these glands beside which further tubercular foci do not need to be found in the body, often cannot be anatomically found and behind which a previous but perhaps not necessarily specific affection of the intestinal canal can be traced back to the entrance place of the bacilli, although at times, especially some time after the resulting affection, their tracing is wholly impossible. This condition is apparently quite common in children according to Corner, who states that tubercular glands of the mesentery will be found in practically every child submitted to an abdominal operation. He further states that "these children do well and live long, therefore this form of tuberculosis must be very amenable to treatment." If this is true it must also be a fact that these glands disappear spontaneously, except as a rarity, before or during the age of adolescence even without any treatment whatsoever, as the statistics of cases reported in the literature, both domestic and foreign, where primary isolated tubercular mesenteric glands giving rise to serious symptoms have been found at operation are very meagre.

It must be accepted, however, as absolute that primary tuberculosis of the mesenteric glands is to be observed clinically as an exception, perhaps as a rarity, but when it does occur is so alarming in its manifestations, that it deserves serious consideration.

This condition might be supposed to be one essentially of childhood. This also is not a fact, as according to the reported cases of Thiemann, Schlossmann, Newbolt, Lockwood, Maylard and Spelissy, a total of thirty-nine cases, the condition occurs with equal frequency in young adults. Newbolt even states that the condition is met with usually in young adults.

Corner divides the condition into two varieties, an adult type and a type peculiar to children, the former occurring in the neighborhood of the cecum giving rise to pain in the stage of caseation usually diagnosed as appendicitis without palpable tumor formation. The second, among children, giving palpable glands usually in the free mesenteric edge of the small intestine. Thiemann's twenty-six cases, however, do not agree with this classification of Corner, as he finds nine cases of children's type in adults and four cases in children of the adult right iliac type of Corner, therefore we must not be misled in seeking a certain fixed type ac-

* Delivered before the New Hampshire Surgical Club, September 17, 1912.

cording to the age of the individual. We do know that the disease seems by pre-election to occur in the ilio-cecal triangle, and although rare, must be considered seriously in our diagnosis of conditions in this region.

Unfortunately the diagnosis of this disease is very difficult, in some cases even impossible, as it apparently follows no definite peculiar symptom complex. A certain proportion of cases complain of vague abdominal pains pointing to no particular organ, in children possibly coming on at night or after the ingestion of food accompanied by the loss of appetite and disturbance of bowel function, more often constipation than diarrhea (Corner).

Maylard goes so far as to state that except when the glands form sufficiently large masses to become tangible, it is doubtful whether there are any symptoms in themselves suggestive of tubercular infection.

He further states that when wasting, diarrhea, night sweats, increase in temperature, etc., are present, they are probably the result of other tubercular lesions than those exclusively dependent on the mesenteric glandular involvement. On the other hand isolated mesenteric glandular tuberculosis may be the underlying cause of a very alarming train of symptoms demanding, or seeming to demand, immediate surgical intervention.

It is a peculiarity of this lymphatic gland disease that it occurs either with moderate indefinite pains pointing definitely to no abdominal organ, or appears, and with a certain preference, under the aspects of two of our worst and most frequent abdominal diseases. This is well illustrated by the cases which I will report and on which this paper is based.

CASE. Male, 18 years old.

Family History. Parents healthy, several brothers and sisters all living and well. No history of tuberculosis.

Past History. Since childhood attacks of abdominal pain, right iliac, with vomiting, characterized by him as bilious attacks.

Present Illness. Two days ago taken with pain in the abdomen followed three hours later by vomiting. Pain has continued together with nausea and occasional vomiting since. When seen, December 1, 1911, complained of pain, quite severe, in the region of the appendix with nausea and vomiting. Said that bowels had moved well the day before.

Examination. Slender-built boy of rather delicate appearance. Skin rough and covered with spots of acne. Heart and lungs negative. No glandular enlargements palpable. Tongue coated. Abdomen not distended. Localized tenderness below and to right of umbilicus, severe on deep pressure. Slight rigidity of right rectus, abdomen elsewhere negative. Temperature 98.6. Pulse 80.

Provisional diagnosis probable appendicitis.

On account of the lack of urgent symptoms and the normal temperature operation at this time did not seem imperative, so rest in bed, enema, and light liquid diet ordered.

Dec. 2, 1911. Condition not improved, pain and vomiting still persisting. Pain still localized over

the appendix region. Rigidity of right rectus present. Temperature 98, pulse 72 but not good in character. Some distension of the abdomen. Movement with enema yesterday, but none since. No flatus. Patient looked ill, pinched and drawn. As the condition did not seem to be improving and the general condition of the patient was surely not as good, immediate operation was advised.

Operation. Right rectus incision. On opening the peritoneum coils of intestine distended with gas, injected and bluish in color presented. There was a small amount of free straw-colored fluid in the abdominal cavity. Coils of intestine walled off. Appendix sought and found atrophied and bound down external to the cecum by old adhesions. No evidence of acute appendicitis could be found. Collapsed coils of ileum found, followed up, and about two feet from the ilio-cecal valve a sharp kink discovered. This was due to dense adhesions between the intestine or ileum at this point and an inflamed caseous mesenteric gland the size of a walnut, situated near the abdominal attachment of the mesentery of the ileum low down. Near this gland was found also another smaller one also caseous. The adhesions between the gland and intestine were separated with extreme difficulty, a small hole being torn in the bowel during the process, probably due to a diseased process of the intestinal wall at this point. The bowel was sutured in three layers. The gland which was a soft caseous mass was removed by blunt dissection. The bowel was straightened out, appendix removed, abdomen closed with tube and gauze drainage. No other macroscopic evidences of tuberculosis were apparent. Patient did not stand either well and was in poor condition all through the operation. Pulse rapid and of poor quality.

After the operation patient rallied and seemed much better. Passed flatus and some fecal matter until the third day when he took a turn for the worse, developed ileus, temperature and vomiting and gradually grew worse until he died.

No histological examination was made, but the macroscopic appearances were so typical that there was no question that the condition was one of tubercular gland disease.

This case, although unfortunate from a surgical standpoint, was very interesting. Here we have a case of isolated tuberculosis of mesenteric glands beginning with the symptoms of an acute recurrent appendicitis and progressing along the lines of an intestinal obstruction, although the latter did not appear in the symptoms during the early stages. I believe in this case that there was no way of arriving at a definite diagnosis of tubercular mesenteric glandular disease which had caused by direct contact, irritation and adhesion to a contiguous loop of bowel with resultant obstruction. That this was a progressive process I have no doubt. It was without doubt the underlying cause of the previous attacks of pain, the bowel probably becoming adherent early in disease and as it progressed, slowly becoming angulated by the growth and contraction of the adhesions until obstruction resulted. Even could a mass have been felt, in the absence of tubercular history or evidences of the disease elsewhere in the body,

a diagnosis could have been arrived at only in a conjectural way.

In regard to the therapeutic indications I will speak later, but first wish to present a second case which I am enabled to report through the courtesy of Dr. C. A. Sturtevant of Manchester.

CASE. Boy, age 4.

Family History. Parents healthy, two aunts on father's side died of tuberculosis. One other child well and strong.

Past History. Breast fed, always well and strong, well developed and nourished.

Present Illness. When at play kicked in the right side below the costal border about the level of the umbilicus, complained of pain and some slight soreness at the site of the injury. On the third day vomited, pain moderate. Seen on the fourth day. Temperature $99\frac{1}{2}$, pulse 100. No symptoms at this time except vomiting.

Examination. Tenderness near McBurney's point. Tension of the right rectus, slight dullness to percussion over tender spot. Sense of resistance in the region of appendix. No obstipation. Ice, liquids and rest in bed ordered.

Fifth day. Temperature 100, pulse 100. Abdominal symptoms same.

Sixth day. Pulse and temperature normal.

Abdominal symptoms same.

Seventh day. Abdominal symptoms same. Operation advised.

Operation. Eighth day. Operation. Diagnosis appendicitis. Right rectus incision. On opening the peritoneum a large soft caseous mesenteric gland size of a goose egg and many small ones found. There was no evidence of intestinal involvement, no evidence of adhesions, appendix normal, small amount of fluid in the abdomen. The gland was incised and large amount of soft caseous material evacuated. Abdomen closed with drainage. Convalescence uninterrupted.

In this instance we have the disease manifesting itself in a different phase, that of a slowly developing, moderately severe appendicitis with nothing in the history or symptoms pointing to the true condition. In children, to quote from Maylard: "When a palpable tumor is present, the diagnosis is easier than in adults, for where in the latter there are many conditions giving rise to tumors, simple and multiple within the abdomen, in the former there are but few, indeed, it may be said that hard, movable lumps in the belly of a child which are not fecal and which remain constant under all conditions, are almost certain to be tubercular mesenteric glands." This is borne out by the investigations of forty cases of primary abdominal tuberculosis in childhood at the East London Hospital for children by Branson. According to Thiemann, however, even in adults a diagnosis may be possible, as he states that multiple tumors in the region of the small intestine, if leukemia is ruled out, are almost pathognomonic. He also believes primary mesenteric tuberculosis is a frequent cause of run-down condition, otherwise unexplainable. Thiemann also makes a distinction between cases with peritonism hav-

ing fever, pain, perhaps tenderness, and no peritoneal involvement, and other cases with localized peritonitis, adhesions, formation of bands and obstructions. This distinction is well illustrated by the two cases reported.

The difficulty of diagnosis of primary mesenteric tuberculosis and its confusion with appendicitis or ileus is well illustrated by a review of the cases reported in the literature by competent observers. A careful analysis of these cases would be very interesting and extremely valuable, but time will not permit. Suffice it to say that out of thirty-nine cases reported in the literature, in a very large percentage a diagnosis of acute or chronic appendicitis or ileus was made, and the true condition recognized only after the abdomen had been opened. So, it may be truly said that because of the rarity of its appearance, the almost absolute lack of all indications of tuberculosis in other parts of the body, especially of the intestines, its peculiar character even in the cases in which a mass is to be plainly felt, that a diagnosis can be arrived at only in a conjectural way. In cases of the nature of those reported, however, from the standpoint of treatment the more or less accidental pathological diagnosis is not of decisive importance, as laparotomy is indicated anyway, and the condition found can be dealt with as indicated. Where obstruction is found due to bands or adhesions, as in the first case, an operation is not only necessary but imperative. In cases of the type of the second case, where a large, soft, caseous, tuberculous gland, giving rise to symptoms even without peritonism is found, the indications are, without doubt, for removal, as many cases are reported where just this type of gland has gone on to suppuration and rupture, with resultant general peritonitis and death.

The question now arises as to what course shall be followed in cases where tubercular mesenteric glands are found during operation for some other condition, or when a palpable mass is present giving rise to slight or no symptoms, or in the type, described by Corner, found in children where the symptoms are chronic ill health, vague abdominal pains and discomfort, anorexia, etc., with or without tumor on abdominal palpation.

In general the treatment of isolated tuberculous mesenteric glands seems, at the present time, to be in the transitional stage. Only in comparatively recent years have the advances in the technic of abdominal surgery, caused the question of operation on these glands to enter the field of practical treatment. This perhaps has been encouraged by the success attending the removal of cervical glands.

LOOKING AT THE CONSERVATIVE SIDE OF THE QUESTION.

From analogy to glands elsewhere, especially cervical, there is ample evidence to show that in many cases, tubercular glands after reach-

ing a certain stage, may subside and in a sense disappear. So, according to Maylard, the normal vital resisting forces of the body should be increased as much as possible before thought of operation is entertained. On the other hand we know that glands in a certain proportion of cases, do not subside, but become inflamed, go on to suppuration, burst, and discharge their contents, a serious and sometimes fatal occurrence in cases of mesenteric glands, as shown by cases reported by Maylard and other surgeons of repute. In addition, tubercular mesenteric glands may be the exciting cause of the symptoms, for the relief of which, the operation was performed, although this might not be recognized even at the operation itself, as is well illustrated by a case reported by Newbolt, which I wish to quote briefly: "Case, girl nineteen, diagnosis, chronic appendicitis. At operation appendix removed. During operation several calcareous tuberculous glands noticed in the mesentery of the ileum at the lower end. After the operation the patient complained of the same pain as before in the right iliac region. Six months later the abdomen was reopened and the glands removed, with a resulting complete relief of symptoms."

It also seems to be fairly well agreed upon that plainly palpable glands especially if pain or tenderness is present, should be removed, especially when the same are located in the ileo-cecal triangle (Thiemann.)

As to the treatment of those cases in children with indefinite symptoms described by Corner. Corner says: "That from a very considerable experience with these cases, that tubercular mesenteric glands and a dilated appendix containing fecal material, but otherwise not obviously diseased, are always found. The appendix is removed, whereby a great danger is obviated and a great source of discomfort, from contractions on the fecal matter (appendicular colic) is avoided. After the operation patient is sent to the country. In nine out of ten cases improvement is rapid and great. Hence," he says, "there can be no doubt, certainly in my mind, that the appendix is the great source of danger and discomfort in these cases."

It is thought by some observers of unquestioned standing that opening the abdomen alone without removal of the glands, may have a beneficial effect upon tubercular mesenteric glandular disease.

To quote further from Newbolt: "Tubercular, mesenteric glands, and tubercular peritonitis, merge one into the other, and it is probable that early operation by removal of the appendix and glands in the ileo-cecal region, when possible, may cut short this disease.

In regard to operation for tubercular mesenteric glands, Corner says: "From the point of view of advising operation, it is most important that a tumor, the result of tuberculous peritonitis and one of tuberculous mesenteric glands, the infection being from the intestine, perhaps

from a tuberculous enteritis should be distinguished." That is to say it would be a mistake to excise glands unless isolated or primary.

IN REGARD TO TECHNIC.

In the removal of tubercular mesenteric glands, it is well to remember that they practically always contain, even in the calcareous state, living tubercle bacilli, and also, that often in the inflamed state, there may be a secondary mixed infection present. Therefore, most extreme care should be taken to avoid contamination of the free abdominal cavity with this infectious material.

Thiemann advises, wherever possible, removal of the gland without breaking into it. If the gland is broken down, he cures it out and carefully sutures, sometimes using drainage.

Statistics of cases operated show a mortality, for all forms taken collectively, of below fifteen per cent.

In conclusion: I have in this paper tried to present briefly before you a condition which although not mentioned, except in a very brief and casual way in any of the text books of surgery, is mistaken for appendicitis, and even though it occurs only rarely, should always be considered in differential diagnosis. For as Schlossmann says, "There is clinically an isolated appearing tuberculosis of the mesenteric glands which can appear under the form of an acute, severe, appendicitis, and run its course with all the symptoms of acute or chronic ileus." Therefore, when operating for acute appendicitis and the appendix is found to be normal, tubercular glands of the mesentery should be thought of.

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TUBERCULOSIS OF THE MESENTERIC GLANDS SIMULATING APPENDICITIS.*

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In a moderate experience in operating for appendicitis—more than a thousand cases—I have found not infrequently in cases in which the diagnosis of appendicitis was made, although it must be admitted they were often slightly atypical and that the results of the physical examination did not always tally with the symptoms, a sub-acute or chronic appendicitis, together with an acute enlargement of the mesenteric glands connected with the cecum. It has been my custom wherever these glands were markedly enlarged to remove them. In some instances they have been proved by microscopic

* Read in discussion of Dr. David W. Parker's paper on "Tuberculous Mesenteric Glands Simulating Appendicitis." See *JOURNAL*, p. 916.