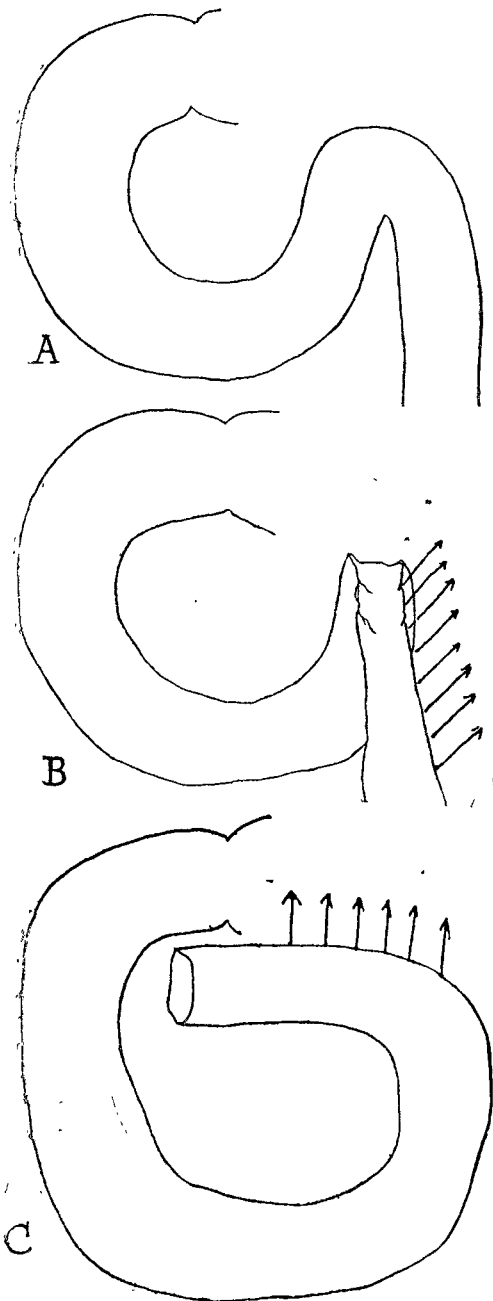


traction upon the jejunum. I believe that to obviate this mechanical disability the commencement of the jejunum becomes attached progressively to the posterior abdominal wall by an evolutionary process, so that, in the highest state of development, having become attached to the under surface of the transverse mesocolon in a direction from left to right, this portion of bowel is fixed in the form of a semicircle.

I have indicated diagrammatically in Fig. A what I believe to be the normal condition at birth; in Fig. B the condition commonly present in advanced duodenal obstruction in chronic intestinal stasis—the arrows indicate the acquired ligament, which represents the crystallisation of lines of force, which is frequently present and which is evolved to take strain off the termination of the fixed bowel; and in Fig. C the fully developed fixation of the jejunum to the



under surface of the transverse mesocolon. The arrows in this diagram indicate the acquired mesenteric bands which are evolved to fix the bowel in this situation in order to obviate angulation at its termination and consequent interference with the effluent. The advantageous mechanical arrangement afforded by this last type may be imitated by suturing the jejunum to the under surface of the transverse mesocolon after the division of any such bands should they exist. It would seem impossible to eradicate from some minds the idea that these acquired bands and mesenteries are inflammatory or congenital in origin and not evolutionary during the lifetime of the individual.

I do not propose to discuss here the details of the several operative procedures which I employ, as I have done so on very many occasions.

We may differ widely in our opinions as to the causation of the several conditions which produce mechanical changes

in the intestine, as to the mode of absorption of poisonous products, and as to the best modes of treating the several troubles as they arise; but I trust that the discussion, which I feel sure will be a very full one, will help us to materialise our views on a subject which I believe to be one of the biggest and most important that we have handled recently. I have just returned from the United States, where chronic intestinal stasis is receiving the closest attention, and where it is being dealt with in a very practical manner by the most progressive surgeons in the world.

Cavendish-square, W.

## THE TREATMENT OF POTT'S DISEASE.

WITH AN ANALYSIS OF 116 CASES.

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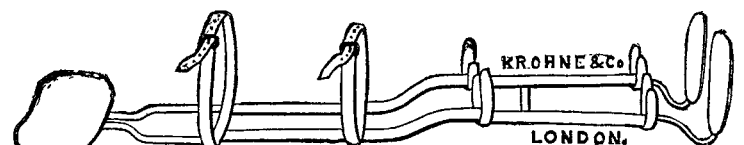
It is proposed to give here a brief account of the treatment of Pott's disease as carried out in the Orthopædic Department of the London Hospital during the last ten years. Appended are particulars of 116 cases which first attended the department in the five years 1906-10. They will be referred to where necessary.

The treatment throughout has been rigidly conservative; and the two principles underlying the treatment have been (1) to put the diseased parts absolutely at rest, and (2) not to interfere surgically until forced to do so.

This treatment has been adopted as the result of observations extending over 35 years, and after prolonged trials of other methods—e.g., plaster-of-Paris and poroplastic jackets without recumbency, forcible stretching, laminectomy, early incision and drainage of abscesses, injection of iodoform and other substances after aspiration, irrigation of sinuses with various antiseptics, curetting and laying open of sinuses, &c.

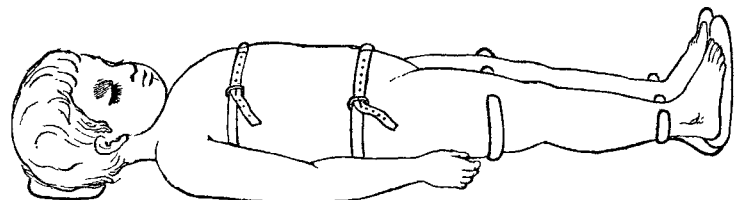
Directly the condition of active Pott's disease is diagnosed the child is measured for a double Thomas hip splint with

FIG. 1.



Double Thomas splint with adjustable head and feet extensions.

FIG. 2.



The splint applied. The trunk and legs are in addition secured with bandages; these are not shown in the figure. (The figures are from THE LANCET of July 28th, 1888.)

head and feet extensions. (Figs. 1 and 2.) While this is being made the child is kept in bed at home or in the hospital. When once the child has been placed in the splint he is never taken out, except once weekly, until a complete cure has been brought about. We are convinced that this splint fulfils all the conditions necessary for keeping the diseased parts absolutely at rest. Its great advantages over other splints are: (1) that it fits for years, for the head and feet extensions being adjustable are lengthened as the child grows; (2) that the diseased portion of the spine and the abdomen and groins can always be inspected without

removing the splint; (3) that if a sinus is present dressings can be applied; (4) that the child can be washed daily, and so prevented from becoming verminous; (5) that the splint does not cause sores; and (6) that it does not interfere with growth or chest development.

There is still a belief prevalent that in Pott's disease all that is necessary is to keep the child recumbent; and in a large general hospital we know of children are frequently kept in bed for months without any splint or support. There could hardly be a greater error. Recumbency alone only partly removes the action of gravity, does not prevent twisting movements of the vertebræ, and has no effect on the movements of the spine in respiration. Deformity is encouraged by the position of the child, who usually lies with the spine flexed and the legs drawn up.

Another equally common error is to suppose that all cases can be efficiently treated by a jacket from the commencement, the patient being allowed to walk about. Though some may do well under this treatment, we are certain that this method should not be the routine one, but should be reserved for those cases where the disease is quiescent and where the deformity is slight.

The Thomas splint combines the advantages of both methods, and has the disadvantages of neither. We must here refer shortly to the alleged disadvantages of this splint. Thus it is stated that nothing could be worse for a tuberculous child than to lie all day and night in a slum dwelling without light and air; that the parents take the child out of the splint, and only put him back in it on the day for visiting the hospital; that if they do keep the child in it, they do not look after him; that it is very difficult for him to be brought up regularly to the hospital in it; that granted the splint is a good one, it is only suitable for small children; and finally, that the splint is expensive. Dealing with these objections in order, we can testify that in actual practice the large majority of these patients are in excellent health—they eat well, put on flesh, and have a good colour; that while a few mothers object to the splint at first, practically all of them soon carry out the surgeon's instructions implicitly, and surprise visits made by the members of the Invalid Children's Aid Association do not find the children out of their splints; that the same visitors find the children on the whole well looked after; that the children are brought up regularly on inexpensive wicker spinal carriages with the minimum of trouble; that Pott's disease is chiefly a disease of small children (see Appendix, III., 83 per cent. of cases in first seven years of life); and that as the splint lasts for years, and as long as the patient will probably require that particular form of treatment, the price (47s. 6d.) cannot be considered excessive.

When the child has remained in it for a sufficient time he is fitted with a poroplastic jacket and allowed to get about; if the disease is higher than the eighth dorsal vertebra, two posterior steels are added to the jacket, together with an occipital and chin head-support. This jacket is worn for several years. The price of the jacket is 20s., with three strengthening steels 35s., and with head support 63s.; should the jacket get too small it is remoulded at a cost of a few shillings.

With regard to the question, How long does the treatment last? there is only one possible reply—viz., that each case has to be judged separately and that no time-limit can be set. Few recent acute cases remain less than two years in the Thomas splint, and less than three years in the jacket (see Appendix, I., 40 cases still attending for treatment; average duration of attendance, 3·3 years). The splint is removed when the surgeon considers the case is cured, and the jacket is then applied to prevent relapse and increase of deformity. Should a relapse occur, recumbency in the splint again is imperative. More than half the cases attending the Department have been treated for varying periods elsewhere (see Appendix, IX.), and in many of these the disease is more or less arrested when they arrive at the Department; they are treated by the application of the poroplastic jacket only.

As regards the efficiency of the splint, it is significant that no case while undergoing treatment in it developed either an abscess or compression paraplegia (see Appendix, VII. and VIII.).

Deformity.—Apart from the enforced recumbent position, which is constantly tending to decrease it, no other attempt is made to get rid of it, or even to diminish its amount. We

are not convinced that the published results of so-called "gradual correction" would bear impartial investigation. With the natural process of growth the backward projection tends to be less noticeable so long as the patient is recumbent; and it may be still further masked by a position of hyperextension of the rest of the spine. If the method of recording the amount of the deformity by a malleable tin tape was generally made use of, less would be heard of the good results of forcible correction.

Abscess.—When an abscess is diagnosed it is left alone, the patient, if not already in a Thomas splint, being immediately placed in one. Over and over again has an abscess disappeared spontaneously under this treatment. Thus in this series (see Appendix, VII.), of 10 cases with unopened abscess, in 5 it disappeared without any special treatment. If an abscess continues to get larger and larger, even then it is left alone, unless it is in danger of rupturing spontaneously or is causing compression paraplegia, when it is aspirated through healthy sterile skin and with absolute asepsis. If it fill up again it is again aspirated, if need be a dozen times. When the case arrives with an abscess spontaneously ruptured, or with discharging sinuses the result of previous surgical operations, the condition is treated by the application of cyanide gauze to the external opening. Only under rare circumstances is an unopened abscess opened, and an already opened abscess explored or curetted. No substances are injected into the sac after aspiration has been performed. The plan of incising the abscess, emptying the contents, sewing up the skin, and hoping for union by the first intention, is not to be recommended except in the case of an abscess which has been long existent and which persists in refilling after repeated aspirations. Such abscesses are filled with very dense caseous masses which only an incision will let out. We cannot lay too much stress on the danger incurred by a patient in having his abscess opened early. The early incision of an abscess is almost inevitably followed by the development of a sinus; when a sinus has once been allowed to form it is very likely to become septic, and the prognosis of the case is certainly altered for the worse. Thus of 6 who arrived at the Department with sinuses, and of which particulars are known, only 2 have healed up, 3 are attending still discharging pus after 2, 2½, and 3 years respectively, and 1 after discharging pus for 3¾ years died in a home for incurables (see Appendix, VII.).

Compression paraplegia.—If on the first examination the case is found to have symptoms of nerve irritation, treatment by recumbency and fixation in the Thomas splint, accompanied in a few cases by aspiration of an abscess, has always been followed by disappearance of these symptoms. Even if there be loss of control over the bladder and rectum, under this treatment control returns in the course of a few months, the order of recovery being first the rectum, then the bladder, then the legs—that is, exactly the reverse of the order of onset. It has never been necessary to perform a laminectomy. Probably all the laminectomies performed in the past to relieve compression paraplegia could have been avoided if efficient fixation and rest had been employed.

#### APPENDIX.

##### *Analysis of 116 Cases of Pott's Disease who Attended the Department for the First Time During the Years 1906-10 inclusive.*

I. Of these, 64 have been recently examined or are known to be alive, and 9 are known to be dead; 40 are still attending the Department. The average number of years they have attended is 3·3.

The cause of death in 9 cases was exhaustion, 2; diphtheria, 1; lung affections, 3; dropsy, 1; run over, 1; not known, 1.

II. Sex.—58 males and 58 females.

III. Age.—The age of onset was noted in 90 cases.

Age.	No. of cases.	Age.	No. of cases.	Age.	No. of cases.
1 ... ..	5	7 ... ..	4	16 ... ..	1
2 ... ..	15	8 ... ..	3	17 ... ..	1
3 ... ..	18	9 ... ..	2	18 ... ..	1
4 ... ..	16	10 ... ..	1	25 ... ..	1
5 ... ..	8	12 ... ..	2	43 ... ..	1
6 ... ..	9	14 ... ..	2		

Onset in 66 cases, or 73 per cent., in age-period 2-6 years.

„ 75 „ 83 „ „ 1-7 „

IV.—*Region affected.*

Cervical ... ..	10	Dorso-lumbar ... ..	8
Cervico-dorsal ... ..	2	Lumbar ... ..	18
Upper ,, ... ..	7	3 foci present, 1st D., 9th D.,	
Middle ,, ... ..	26	1st L. ... ..	1
Lower ,, ... ..	29	Not noted ... ..	5

V. *Cases with other tubercular affections—14.*

Hip disease (right, 2; left, 4) ...	6	Lupus of face ... ..	2
Knee ... ..	1	Peritonitis ... ..	1
Ankle (double, also had phthisis) ... ..	1	Pleurisy (several attacks) ...	1
Glands of neck (caseating) ...	1	Phthisis (one case also had tubercular ankles) ... ..	2

VI. *Scoliosis* was present in addition to the angular kyphosis in 4 cases.

VII. *Abscess*.—Present at some time or other in 40 cases (34 per cent.). It must, however, be noted that in 39 of these the abscess was large enough to be observed on palpation or inspection, and that in only one was the abscess detected by X rays (Case 72). It is highly probable that some of the remaining 76 cases suffered from abscess, which, however, never became large enough to be detected by ordinary methods.

These 40 cases may be divided into four groups:—A, Abscess opened before coming to Department—27 cases. B, Patient arrived with abscess present but unopened—10 cases. C, Abscess developed during treatment in Department—1 case. D, No abscess present; case not treated because patient only attended Department once; abscess appeared later—2 cases. Dealing with these four groups in detail:—

*Group A*.—Of 27 cases in which the abscess had been opened before coming to Department, on arrival 19 had healed and 8 were discharging. Of the 19 which had healed—

14 developed no further abscess while under treatment.

1 developed a fresh abscess a year later while under treatment, which opened and eventually healed (treated at first by jacket) (Case 22).

1 at first not treated; then fresh abscess; died three years later from dropsy (Case 65).

2 were referred to other Departments.

1 died five days later from pneumonia.

Of the 8 which were discharging—

2 healed up.

3 still discharging after 2, 2½, and 3 years respectively.

1 discharged for 3½ years, and died in home for incurables.

1 referred to another Department.

1 not known.

*Group B*.—Of 10 cases in which patient arrived with abscess present but unopened, in—

5, the abscess disappeared without aspiration or incision, after intervals of 9, 9, 9, not stated, and 33 months respectively.

2, abscess disappeared after aspiration 1 and 4 times respectively.

1, two abscesses present; after two years both incised; 3 months later one healed and one still discharging.

1, "acute abscess," incised, sewn up, broke down, and had healed in 2½ years (no particulars, Case 37).

1, abscess opened and continued discharging until the patient ceased attending, 6 months later (Case 32).

*Group C*.—One case in which abscess developed during treatment in Department (Case 2). Treated three years by jacket; then developed abscess; treated by two aspirations and Thomas splint 2½ years; abscess gone after 1½ years; has worn jacket last 1½ years.

*Group D*.—Of 2 cases in which no abscess present; case not treated because only one attendance; abscess appeared later, in—

1 (Case 53), abscess appeared 20 months later.

1 (Case 40), abscess appeared some years later.

VIII. *Compression paraplegia*.—Signs of this were present at some time or other in 27 cases (23 per cent.); in 9 of these abscesses also present.

These 27 cases may be divided into 3 groups: A, Recovered from before attending Department—9 cases. B, Suffering from when attended Department—14 cases. C, Suffered from for first time during treatment in Department—4 cases. Dealing with these groups in detail:—

*Group A*.—Of 9 cases in which symptoms were recovered from before attending Department,

8 still well at periods varying from 2–6 years (3 of these treated by Thomas splint).

1 referred to another Department and known to be well now.

*Group B*.—Of 14 cases which were suffering from symptoms when attended Department—

6 treated by Thomas splint; symptoms completely cured.

1 treated by jacket and steels; symptoms completely cured.

5, result not known, because patient ceased attending.

1 not treated, because patient only attended once.

1 transferred to another Department and known to have died from bronchitis.

*Group C*.—Of 4 cases which suffered from symptoms for first time during treatment in Department—

3 not at first treated by Thomas splint, but by jacket.

1 treated 2½ years by Thomas splint, then 4 months by jacket, when symptoms appeared.

In other words, not one of the four developed paraplegia whilst in the recumbent position. The latter and 2 of the former are cured, and of one no particulars are known.

IX. *Treatment*.—Of the 116 cases, 100 were treated in the Department. The apparatus employed was as follows:—

41 cases treated by Thomas splint.

20 ,, ,, jacket.

36 ,, ,, jacket and head support.

1 case ,, ,, poroplastic case for head and neck.

2 cases ,, ,, "kyphotic support."

*Note*.—Of the 40 cases treated by Thomas splint, 17 were treated either before or after with jacket.

*Previous treatment*.—Of the 100 cases, 57 had received treatment previously.

## IS GASTRIC ULCER A FREQUENT PRECURSOR OF CANCER?

By HERBERT J. PATERSON, M.A., M.C.,  
M.B. CANTAB., F.R.C.S. ENG.

OF late years there has been considerable discussion as to the frequency with which cancer is grafted on simple ulcer of the stomach. Cruveilhier, in 1839, and Dittrich, in 1848, were the first to point out this possibility.

Zenker, in 1882, went further and put forward the hypothesis that *all* cases of gastric carcinoma have their origin in simple ulcer. More recently Dr. W. J. Mayo and Dr. Christopher Graham have laid great stress on the origin of cancer in ulcer, and Dr. L. B. Wilson and Dr. W. C. MacCarty from the same clinic, have contributed a valuable paper dealing with the problem from a pathological standpoint. These writers state that they have been able to demonstrate a pre-cancerous or non-malignant ulcer in 62 per cent. of their cases. Most observers, however, have placed the proportion at a much lower figure. Thus, according to Sonicksen, 14 per cent. of all cases of cancer of the stomach originate in ulcers; Lebert estimated the frequency at 9 per cent.; Rosenheim at 6 per cent.; Fenwick and Haberlin at 3 per cent.

The possibility that carcinoma may originate in an ulcer cannot be denied; it is, however, very doubtful whether such an occurrence is as frequent as some authorities would have us believe. The problem is a very difficult one, and a dogmatic conclusion impossible, but the evidence available in favour of the view that simple ulcer is a frequent precursor of cancer is not convincing. This evidence is both clinical and pathological.

(a) *Clinical evidence*.—A number of the patients who come under observation with gastric carcinoma give a history of gastric trouble extending over many years. The first step in the argument is the assumption that the gastric symptoms are due to gastric ulcer. When subsequently, on the operation table or in the post-mortem room, the existence of cancer is confirmed, the argument is carried a stage further by assuming that cancer has originated in the ulcer, which from the history is supposed to have existed previously. The argument may be summarised briefly thus:—Cancer is a disease the duration of which is comparatively short. A long history of gastric trouble is evidence of the presence of an ulcer; therefore, when cancer is associated with a long history, the cancer must have been grafted on a simple ulcer. Such an argument is unscientific. It contains two fallacies, and disregards an alternative conclusion at least of equal probability.

The first fallacy is the assumption that we can diagnose a gastric ulcer from the clinical history alone. In duodenal ulcer, it is true, the history often is so typical that from it a diagnosis may be made with confidence. This is not so with gastric ulcer. Usually, the diagnosis of duodenal ulcer is easy, that of gastric ulcer very difficult. From operative experience we have learnt that gastric ulcer is far less common than formerly was supposed. The symptoms attributed to gastric ulcer frequently are due to disease of the appendix or of the gall-bladder, to septic gastritis, or to intestinal toxæmia. Although in some instances, when dealing with a particularly intelligent patient, it may be possible from the history alone to differentiate between these conditions, in the majority of cases it is not so. I maintain, therefore, that because a patient with cancer of the stomach gives a long history of dyspeptic trouble we are not justified in assuming that the symptoms have been due to a gastric ulcer.

The second fallacy is the assumption that the duration of carcinoma is never protracted. It is conceivable that the growth of cancer in its early stages is much slower than we think. At present we have no means of determining the life-history of cancer of the stomach. We do know, however, that in some instances it is of slow growth, and that dissemination is a late manifestation. Most surgeons have met with instances in which, after gastro-jejunostomy for inoperable cancer of the stomach, the patient has lived for years before succumbing to the disease.

Some years ago I performed gastro-jejunostomy on a woman, aged 27 years, who had an extensive pyloric cancer