tion of a discoid sequestrum with eroded edges. In gummatous periostitis more than one bone may be affected, as in the following case.

CASE VII.

A young man developed a brawny fluctuating swelling of the left upper eyelid, ptosis and downward displacement of the eyeball. A nodule was palpable over the right parietal eminence. Nothing abnormal was seen on rhinoscopy. Temperature 99° F., pulse 108. Recently there had been intense headaches culminating in brief periods of unconsciousness. No other relevant history was obtained, though it is perhaps proper to mention that sclero-corneal trephining operations for buphthalmos had been performed on both eyes.

X-ray examination showed periostitis of the frontal bone with absence or complete obliteration of the left frontal sinus. An exploratory incision revealed the state of affairs to which the small parietal nodule was the real clue. Intravenous treatment was commenced; the Wassermann reaction was strongly positive. The condition subsided under treatment.

A frontal swelling in infants may safely be assigned to causes other than sinusitis. Sarcoma by its rapid growth is apt to simulate an inflammatory condition. Osteoma of the sinus occasionally gives rise to inflammatory complications. If we except osteomata, metastases, and invasion of the sinus by rodent ulcer (only too readily recognized by the ghastly deformity and foul discharge), neoplasms of the frontal sinus are rare.

FIG. 5.—Case vi. Swelling at root of nose in a girl aged 12, due to bilateral frontal sinusitis.

FIG. 6.—Case vi. Patient preparatory to her thirteenth operation.

RADIOLOGY.

Skiagrams reveal the width, depth, and height of the sinuses. To this end antero-posterior, side-to-side, and stereoscopic projections may be studied. One frontal sinus may overlap its fellow of the opposite side, be traversed by incomplete septa, or be absent altogether. Alterations in contour from trauma or gross pathological changes may also be recognized. Forewarned, the operator proceeds with confidence and precision. It is when finer discrimination between normal and abnormal conditions is required that difficulty arises.

In the case of the frontal sinus the relative physicochemical density of the bones of the face must be measured. The presence or absence of air in the sinuses is immaterial. With tubes of the degree of penetration ordinarily used for the purpose, sinuses filled with polypi or cystic fluid may throw a normal shadow. Rarefaction and sclerosis of bone are slow processes. At the first suspicion of trouble the frontal sinuses may be reported normal, at a later stage "veiling" may be found. Conversely, a sinus commonly appears opaque after all symptoms have subsided. Before interpreting altered permeability of a sinus to x rays in clinical terms we should ask ourselves how the suspected condition is likely to affect the deposition of lime salts in the walls of the sinus, and whether it has had time to do so.

In two of the cases the maxillary antrum was more opaque although the primary seat of the disease was in the frontal sinus. In periostitis decalcified areas almost transparent in the x-ray film are sometimes only distinguishable from surrounding bone at operation by being slightly raised and scored with fine fissures. Naturally, values are different in photographs taken by means of rays whose waves are ten thousand times shorter than any with which the human eye is familiar.

CHOICE OF OPERATION.

Removal of the anterior portion of the middle turbinal often facilitates drainage, and it is possible in a proportion of cases to probe and dilate with graduated bougies the fronto-nasal duct. The intranasal use of rasps or trephines is apt to lead to subsequent stenosis.

When the walls of the sinus are intact an incision along the inner wall of the orbit permits of removal of the ethmoid cells and of lining the new passage to the frontal sinus with a broad mucous flap. When the sinus walls are diseased Killian's operation is called for. In osteomyelitis or necrosis of the frontal bone an incision from temple to temple within the hair line yields maximal access and minimal deformity, although a separate incision is required for removal of the ethmoid cells. In complicated cases—for example, when the frontal sinus drains into the maxillary antrum, or when bilateral suppuration exists and a radical operation on both sides is impracticable—good results may be obtained by drainage for three or four months with a silver tube.

These observations merely represent present practice in endeavouring to apply surgical principles to the problems presented.

CHRONIC PELVIC PAIN IN WOMEN.*

BY

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THE chief reason that prompts a woman to see her doctor is usually pain, either in the front or back of the pelvis. The pain is most frequently chronic. Acute pain is comparatively rare, and its origin much more easily determined. Like all other vague pain syndromes, these cases require a minute and painstaking examination, and a clear classification of the causes of pain in the lower part of the back must be kept in mind. The pain is either (1) nervous, (2) structural (skeletal or muscular), or (3) referred from a disorder of the internal organs.

THE NERVOUS SYSTEM.

To sift the cause of the pain the attitude of mind of the patient must be first elicited. The neurasthenic is a pitfall to many of us, but our suspicions that the case is one of the functional majority must only make our preliminary examination the more careful. Something very trivial may be wrong; I have actually had one patient who was reassured when told that it was natural for a froth to form on urine during micturition. Above all, remember that the suspected neurasthenic is in her own estimation suffering intensely.

The patient must be completely examined, and until then no hint must be given as to the possibility of the presence of appendicitis, displaced kidney or uterus, etc. A bimanual examination is essential, and if the patient be a married woman a satisfactory conclusion can usually be formed; but in the case of virgins a rectal examination is not as a rule very hopeful, and it is advisable to make the diagnosis sure by examining under an anaesthetic.

When it has been decided that there is no evidence of organic disease, the treatment is summed up in the words "assurance" and "reassurance." If the patient can be assured that she has no pelvic disease, a course of laxatives of the type of pil. aloes comp. (B.P.), together with a mixture containing potassium bromide, will frequently effect a cure. A suggestion from the examiner that she "may" develop appendicitis, or that the womb is slightly displaced, will upset the confidence of the patient, and lead her to seek further advice.

THE SKELETAL STRUCTURES.

The patient should be stripped in a good light and the spine examined in the erect posture, any limitation of movement being carefully noted. Any doubt as to the spine will be cleared up by an x-ray photograph. The sacro-iliac synchondroses must receive careful attention,

* Abstract of Presidential address to the Gloucestershire Branch of the British Medical Association

but early disease in this area is most difficult, if not impossible, to detect.

The diagnosis between early tuberculous disease of the spine and the so-called weak back is very difficult; but in the absence of x-ray evidence I pin my faith on limitation of movement.

Caries of the lumbar spine is not the only cause of a rigid spine; the conditions which must not be forgotten are (1) secondary carcinoma, usually associated with either a mammary or an ovarian tumour (possibly unsuspected), and (2) arthritis of the lumbar spine. In these conditions the skiagraphic appearances are definite. In the latter, lifting of the edges of the bodies of the vertebrae with osteophytic outgrowths are characteristic.

I believe that arthritis of the lumbar spine is quite a common cause of lumbo-sacral pain. This region is submitted to jars and sprains more than any other, and such parts are notoriously very susceptible to circulating toxins. Arthritis can be benefited considerably by systematic treatment. In the initial stages complete rest should be ordered, and much relief can be given by applying strapping round the pelvis. Later on exercises should be ordered, combined with massage and radiant heat. Spa treatment may be advised when it can be obtained. All possible sources of infection, such as septic teeth, tonsils, accessory sinuses, etc., having been eliminated, baths and washing the system out with the evil tasting and smelling waters of Harrogate, etc., will complete the elimination of toxins.

The Sacro-iliac Joints.

I have seen cases where the chronic lumbo-sacral pain has been referred to one or both of these joints, and I believe that, though tuberculosis is rare, arthritis frequently occurs. When one considers how commonly these structures are submitted to strain, especially in childbirth, this is not surprising, and pain in these regions coming after parturition should be adequately treated with absolute rest, to allow complete involution to take place. In an article on orthopaedics in gynaecology¹ Matthews states that subluxation of the sacro-iliac joint is one of the chief causes of backache. He says that reduction of the subluxation often gives immediate relief.

Paul Roth, speaking in a discussion on the diagnosis and treatment of affections of the sacro-iliac joints,² said that sacro-iliac strain had interested him for many years. He advocated manipulation and then support. Manipulation consisted in forcibly hyperextending the thigh on the trunk with the patient lying prone. I tried this treatment on a patient who was sent to me suffering from pain in the right iliac fossa, thought to be due to chronic appendicitis. The pain, in my opinion, was referred from the right sacro-iliac joint, and treatment as suggested by Mr. Roth effected an immediate cure. Dr. Mennell, in the same discussion, called attention to John Baer's sacro-iliac point, which is situated on a line from the umbilicus to the anterior superior spine, 2 inches from the former joint. He contrasted this with McBurney's point, and said that this explained the persistence of pain in the right iliac fossa after an appendix had been removed.

PAIN REFERRED FROM DISORDER OF INTERNAL ORGANS.

Pain from a disorder of the internal organs is due to two conditions: (a) tension within the muscular structures, and (b) dragging upon the mesentery. The viscera themselves have no sensation of pain; they can be cut, torn, and sutured without the production of pain. When they are irritated the pain will always be interpreted as coming from the peripheral distribution of the nerve fibres which are involved.

In the pelvis we are concerned with the organs associated with the segments of the cord below the eleventh dorsal—namely: (1) the large intestine and appendix, (2) the kidneys and bladder, (3) the uterus and appendages.

The Large Intestine.

The caecum and sigmoid are common sites for distension, and are either the cause or effect of chronic constipation in women. I am of the opinion that the condition is a defect in the neuro-muscular mechanism, as it is so frequently the result of overwork and worry. In normal

well developed women, constipation is never accompanied by chronic pain, but in those whose nervous systems are unstable, gurglings and discomforts in the right and left iliac fossae are gradually interpreted as pain.

The Appendix.

I wish to emphasize the statement that, if a woman complains of constant dragging or aching pain in the right iliac fossa, the cause of that pain is *never* the appendix. A needless operation for the removal of this organ brings discredit to the surgeon, and a continuance of its practice threatens the future confidence of the public in surgery.

While this was being written I saw three cases in one day in which an appendicectomy had been performed some few months previously for chronic pain in the right iliac fossa. The pain recurred as soon as the excitement of the operation had worn off, and, as is so often the case, a fresh opinion was sought—this, in one case, despite the fact that she had been told that her appendix was in "a shocking state." It is a pity surgeons do not always see and learn about their failures.

Appendicitis, either acute or chronic, does *not* give rise to persistent pain or aching in the right iliac fossa. In acute conditions the pain subsides entirely after a few days, and probably recurs later; and in the so-called chronic appendicitis—more correctly termed appendix dyspepsia—the symptoms are referred to the stomach and epigastrium, and rarely to McBurney's region. In one case that I operated upon I found the appendix bulbous and distended, and thought and hoped that the distension was the cause of the pain. Seen a month afterwards, the girl seemed to delight in saying to me, "I am feeling better, but the pain is still there." The subject of appendix dyspepsia is not relevant to this paper. Sir James Goodhart used to say, "God help a woman when she knows she has an ovary." I think the same can be applied to the womenfolk and the appendix.

The Kidneys and Bladder.

I will not weary you with a list of diseases of the urinary organs which may give rise to persistent pain in the pelvis, but will be content to describe the conditions which often cause women to present themselves at outpatient departments and elsewhere, complaining of pain in the iliac fossae, more commonly the right than the left. These are divided into two classes: (1) inflammatory, (2) excessive mobility.

Inflammation of the Kidneys.—Pyelitis is a common cause of chronic pain in the iliac regions, and many cases sent to me under suspicion of chronic appendicitis are found to be suffering from an infection of the kidney. The symptoms are frequency of micturition and mild persistent pain in the distribution of the twelfth dorsal nerve, accompanied by chilliness and mild shivering fits. Bacteriological examination of the urine often shows a pure culture of *Bacillus coli communis*. Palpation of the kidney will sometimes elicit tenderness, but the condition may be present without pain on pressure. A complete examination of a catheter specimen of urine is most important in the diagnosis of vague pelvic pains. The cure of these mild infections of the pelvis of the kidney is not easy. I find that an intensive course of potassium citrate in half-drachm doses combined with infusion of buchu is most beneficial if given for several weeks. Urinary antiseptics of the formaldehyde type are of little value in renal infections. The administration of drugs must be combined with liberal drinking of water and other innocuous fluids, and it is a question whether the abstinence from drinking, so common in young women, is not a large factor in the etiology of this complaint; and similarly the cure may be ascribed more to the mechanical flushing of the pelvis of the kidney than to drugs held in solution. The large intestine, as being the probable *fons et origo* of the condition, must be thoroughly cleared, and the inertia of its musculature stimulated by suitable measures.

Excessive Mobility.—In the large majority of cases of movable kidney the patient suffers from a dragging aching pain in the lower abdomen and back. Such sensations are usually constant when the patient is walking about, but subside after a few hours of recumbency. The chronic pain

is associated as a rule with digestive disturbances and nervous symptoms suggestive of neurasthenia. Pathological mobility must be distinguished from a mere palpable kidney, which occurs in 85 per cent. of normal women, but rarely in men. Acute attacks of renal colic—"paroxysms" as they have been termed—may supervene, and are the result of either kinking of the ureter with a transient hydronephrosis, or torsion of the pedicle with increased venous congestion of the kidney and increased intracapsular tension. The treatment of excessive mobility of the kidney is a severe strain on our professional patience and resourcefulness. I will tackle the question under (1) general tonic measures, (2) abdominal supports and trusses, and (3) surgical measures. Under (1) the first principle is to give the patient absolute rest for body and mind. She should be put to bed in bright surroundings and made to understand that she must lie altogether in the recumbent position. Diet should be liberal and all the ordinary laws of health and hygiene obeyed. After three weeks exercises should be commenced, helped, if practicable, by massage. The essence of treatment thereafter is to strengthen the muscles generally, and it is only with the cheerful co-operation of the patient that success can be obtained. The complaint is the result of "flabbiness" both of the muscular and nervous systems, and it is only cured by putting both into training, as an athlete would set about making himself fit to undergo the strains of a football or tennis season. (2) The only correct abdominal support is a well developed abdominal wall. A mechanical support can only lead to atrophy and weakness of the natural structures. Still, many women cannot develop their abdominal walls sufficiently to stand the strain of the erect posture—a condition not yet corrected by evolution, and comparable to varicose veins and piles. This being so, some cases are helped considerably by wearing a well fitting corset for general support. For the much vaunted kidney belts and trusses I have no use; in my experience they are usually discarded, as they give more pain than they relieve. (3) I hold the opinion that the only indications for operation in movable kidney are the recurrence of acute attacks of pain and vomiting, and the supervention of hydronephrosis or pyelitis.

The Bladder.—The constant pain associated with bladder lesions is felt behind the symphysis pubis. The distress is usually interrupted by paroxysmal attacks of pain occurring during micturition, either just before or at the termination of the act. The diagnosis is, as a rule, obvious.

The Uterus and Appendages.

Tumours of the pelvic organs, although they grow to such enormous dimensions, rarely give rise to chronic pain. The lesions which produce persistent discomfort are (1) inflammatory or haemorrhagic, and (2) mechanical—the former by producing tension, and the latter by dragging on the mesentery and fascial supports.

Chronic Endometritis and Chronic Metritis.—In *Diseases of Women*, by Ten Teachers, the pathology of these conditions is clearly discussed, and it is stated that there is clear proof of the inflammatory nature of both these conditions. The former, endometritis, is either a disease *per se*, or, if not cured, is the first stage of the latter. Chronic pain in the back in the sacral area is associated with menorrhagia and leucorrhoea. Menstruation is prolonged and profuse, and there may be slight intermenstrual haemorrhage suggestive of the presence of a malignant growth. Early cases may be cured by promoting an improvement in the general health, and benefit is undoubtedly obtained from ergot and calcium lactate. I might mention also the improvement noticed after intramuscular injection of colossal calcium. If good result does not follow medical treatment, curettage must be advised without delay. It has been said that the sharp curette should only be seen in a museum of antiquities: I do not agree. Early cases of endometritis can be cured by curettage, but this must be performed thoroughly, carefully, and, above all, aseptically. If no relief follows, and the microscopical report of the endometrium negatives any idea of malignancy, chronic metritis has probably supervened.

Fibrosis uteri (or bleeding uterus, as it is also called) is common after the age of 40, and from the continued

haemorrhage and chronic pain is productive of much suffering. On examination very little abnormal can be felt, for frequently the uterus is not even enlarged. Curettage is useless as a mode of treatment in this condition, and I have no hesitation in advising hysterectomy with conservation of the ovaries. The entirely successful results, with freedom from anxiety as to the future, which hysterectomy offers in this condition, make me hesitate to advise the doubtful benefits of radium or x-ray therapy.

Chronic Salpingitis.—Here the Fallopian tubes are thickened, and, as a result of the closure of the fimbriated extremities, become distended. The surrounding structures are matted together by the inflammatory exudate. The pain is situated in the lower lumbar region and is of a gnawing character. In the treatment of this disease I wish to lay stress on the value of conservatism. It is a proved fact that in these cases of chronic pelvic peritonitis the bacteria will die off and the inflammation will undergo absorption. Complete rest in bed, with hot packs and douches to relieve pain, for several weeks is essential. Should abscess formation occur I strongly advise vaginal as against abdominal drainage.

Pelvic Haematocoele.—I mention this condition briefly as causing similar symptoms. The slow leaking of blood into the pelvis is due either to a ruptured tubal pregnancy or to bleeding from a ruptured lutein cyst in the ovary. I emphasize the latter condition, as on three occasions I have found blood in the pelvis which was the result of ovarian bleeding and unconnected with pregnancy.

Retroversion.—This is a bone of contention to the gynaecologists. Personally, I am very doubtful if a retroverted uterus ever gives rise to pain. I am confident that an organ three and a half inches long and freely movable does not cause symptoms. If it is enlarged, and so being under tension, it will give pain, but then the concomitant endometritis or metritis is the prime factor. The hyperplasia can be cured and the patient relieved without correcting the retroversion. Similarly, descent of the uterus always causes a certain degree of retroversion, and it is the prime factor in giving rise to pelvic pain. Most cases of retroversion do not require any treatment. If pain in the back is complained of and a retroverted uterus is discovered, another cause must be sought for the pain, and, as is so important with most displaced organs, no mention of it should be made to the patient, but a near relative may be told that the fact is recognized. If correction is deemed advisable, this can be done by bimanual manipulation and the insertion of a ring pessary to prevent the uterus from falling back again. A Hodge or other hard pessary is harmful, and not so efficient as a soft rubber ring, which in any case can do no harm. At the British Medical Association meeting at Bath, Dr. Russell Andrews gave as his opinion that the only absolute indications for operative treatment were sterility, dyspareunia, and prolapse. The first two are rare, and the subjects are often willing to have an operation as a speculative measure, and the third comes under another heading altogether. The procedure recommended is Mayo's modification of Gilliam's operation. The idea of suspension is correct in theory, but often useless in practice. Ventrofixation has had its day—it is unsound in theory, and so liable to be followed by complications that it can be regarded as dangerous in practice.

Prolapse of the Pelvic Organs.

Descent of the pelvic organs, and the resultant dragging on the peritoneal attachments and fascial supports, is the most frequently found cause of lasting pelvic pain. The perineum has been expressively termed "the inferior abdominal wall," and certainly what we understand as prolapse is a hernial protrusion through this structure; and I believe that the weakening of the muscular and fascial layers which constitute it is the first principle in the production of prolapse. If the wall is torn or lacks tone, only a slight increase of intra-abdominal tension is necessary to bring about a hernial protrusion. The so-called ligaments of the uterus are not made to withstand any tensile stress. The structures responsible for the support of the uterus are therefore (1) the levator ani muscle and (2) the pelvic fascia. It must be remembered that

prolapse can occur in nulliparae and virgins, in which case an elongated cervix is almost invariably the cause. As in hernia, so there are degrees of prolapse; there may only be a slight bulging of the anterior vagina wall with slight descent of the cervix, or the os may descend to the vaginal orifice; or, as a final stage, the uterus may be protruded completely from the vagina. A small degree of prolapse as a rule gives more pain than a procidentia.

The treatment should be the same as that adopted in an ordinary case of hernia elsewhere, which, in short, means a truss for relief, and an operation for cure. But before discussing treatment in detail, let me say a few words about prophylaxis. Most cases of prolapse are the result of parturition, therefore it must follow that something can be done to lessen the incidence of this complication. During labour it is all-important to preserve the pelvic floor; and if it has been lacerated an efficient repair is very necessary for the future of the patient. It is so common to find a thin skinny structure where, before labour, a strong support in the form of the perineal body existed. Then, in the third stage of labour I deprecate the commonly adopted plan of forcing the uterus down in order to express the placenta; this practice must weaken the fascial supports round the uterus, and twice I have seen a careless midwife produce an inversion of the uterus by her vigorous efforts to expel the placenta for the treatment of haemorrhage; inversion is more readily produced by this procedure than by pulling on the cord. I may be guilty of heresy, but I see no harm in delivering the placenta from the vagina by pulling it out, instead of using the uterus as a wedge to push it out. In the puerperium much might be done by maintaining muscular tone, and for this end I advise not only abdominal exercises, but exercises for the levator ani muscle. The latter are carried out by telling the patient "to contract herself as if she were trying to hold in a motion." In the treatment of early cases following childbirth the patient should be made to spend most of her time in the recumbent position, but exercises should be carried out thrice daily. If the uterus has not involuted completely, a course of ergot and strychnine will be beneficial. Treatment on these lines is advised for a month, and if the prolapse is still present at the end of this time the condition must be regarded as one of hernia, and a truss in the form of a pessary is necessary. There is no question as to the relief so obtained. If a pessary or a truss gives relief and is comfortable I see no harm in its use. I use only soft rubber pessaries, and I have many patients who complain of pelvic pain immediately they cease to wear them. They must, of course, be changed and cleaned regularly. Many patients, however, are not relieved by wearing a ring pessary—either it cannot be retained, or it fails to give relief; in these cases operative treatment is essential.

I perform one operation for prolapse only, and this I call the operation for the radical cure of perineal hernia. In the last eight years I have practised Fothergill's operation, with certain modifications, without experiencing a failure. Among others, I have operated on cases of procidentia which had previously undergone some form of ventrofixation operation with subsequent recurrence of symptoms, and obtained a complete cure. The chief points in the operation are: (1) careful pre-operative preparation, (2) amputation of the cervix, (3) restoring the muscular and fascial supports under the bladder, (4) restoring the muscular and fascial layers in front of the rectum, and (5) building up a new perineal body.

CONCLUSION.

Earlier in this address I threw doubt on the value of many operative measures for the relief of chronic pelvic pain. I close it with an enthusiastic faith in the surgical treatment of the most constant cause of this condition. Why is this? It is because surgery is able to restore a damaged part to its originally correct anatomical state. In the many "pexy" operations which are practised, the failure of them is, in my opinion, attributable to the fact that organs are placed or tied up contrary to Nature's intention.

REFERENCES.

¹ *Surgical Clinics of North America*, April, 1925. ² *Proc. Roy. Soc. Med.*, April, 1925.

NON-INFECTIVE ARTHRITIS IN WOMEN.

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WHEN the process by which a morbid condition arises is obscure its elucidation may be facilitated by considering the results of treatment. This may be true whether the method of treatment has been arrived at empirically or not. We have found that the process producing arthritis may, in a certain class of case, be brought to an end by heating the pelvic organs by diathermy.

Since 1912 the treatment of arthritis by diathermy has been investigated in the electrical department of St. Bartholomew's Hospital. Before 1914 it was found that diathermy had a marked effect on gonococcal arthritis when applied to the affected joints. After the war it was found that it was unnecessary to apply the current to the joints if the application were made to the foci from which dissemination occurred—namely, the cervix uteri in women and the prostate and vesicles in men.

As the work proceeded it became evident that patients were being successfully treated in whom gonococcal infection was more and more doubtful, and later that cases of arthritis, both in men and in women, in whom gonorrhoea had definitely not occurred were also efficiently treated by diathermy. It was supposed that the effect upon the arthritis was due to the action of the current upon the cervix or prostate and vesicles infected with organisms other than gonococci.

A series of cases has, however, occurred in which it seemed clear that no infection existed. These cases were either in young women in whom the onset of the arthritis coincided with the establishment of menstruation, or in women at or about the age of the cessation of the menstrual function. An illustrative case at either end of menstrual life will be described later. It is held, we believe, by most authorities that the so-called-rheumatoid arthritis is in all cases due to a focus of infection giving rise to a toxic arthritis, or to an arthritis in which there is actual bacterial invasion of the structures of the joint. This opinion is held in spite of the fact that in many, if not in most, cases a focus of infection is not found. We have no doubt, however, that the number in which a focus is not discovered would be considerably reduced if the cervix were more often examined.

The so-called rheumatoid arthritis is far commoner in young women than in men. It seems a fair deduction from the results of this treatment that this is due to the fact that the cervix is liable to an infection capable of producing the arthritis, and that although the prostate may play a similar part in the causation of arthritis in men it is not nearly so commonly infected with organisms other than gonococci in comparatively young persons.

There still remain cases in which a focus cannot be discovered and which are not due to an infective toxæmia. It is true that in these the teeth are often affected by the same process as the joints, and are held to be responsible for the toxæmia when they are really a manifestation of it. This accounts for the great number of cases in which complete removal of the teeth is not followed by any improvement in the condition of the joints.

It seems that at all events some of these cases of arthritis—namely, those in which no focus of infection can be found—are due to absence or deficiency of hormones of the ovary or other pelvic organ. These are amenable to treatment by diathermy applied to the pelvic organs. Heating of these organs by diathermy has resulted in subsidence of the inflammation of the joints and complete functional restoration, unless such new bone formation or other organic changes have taken place as to render restoration of function impossible.