

The COLLEGE JOURNAL

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SEPT. 25th—DEADLINE

We did not win nor did we place. There are but 23 Freshmen, three more than in last year's class of 20 which has grown to be a class of 26 Sophomores. 63 Juniors, 47 Seniors and 1 post graduate make a total enrollment of 160.

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ALUMNI FOUNDATION
AND
HOME COMING PROGRAM
· NOV. 16-17-18th

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ANNUAL BOARD MEETING
NOVEMBER 17th

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OUR HOBBY—Continued



Well, with the ringing of the school bell yesterday morning, Our Hobby observed its 24th birthday. Nearly a quarter of a century of selfless service to osteopathy and to the osteopathic profession.

Years and years of toil and love have brought Our Hobby from its insignificant beginning in the fall of 1916 to its present outstanding position as the youngest, yet not the smallest of the approved colleges.

We are glad school has reopened. It is with pleasure that we again are in the harness to lend our efforts toward making the 1939-40 session the banner year of all the twenty-four.

After three whole months of vacationing, it is pleasant to know we can apply ourselves to something more useful. Even while at vacation we were not entirely idle as concerns Our Hobby. A few weeks ago we were all thrilled at our expectation that an application for a loan to enable us to erect our Science Hall would be successful. The final result was another disappointment but one of these days we will succeed. The agents of the company we were approaching were enthusiastic about our financial standing and felt we would meet with no obstacle. However, the matter died at the "home" office. We will just have to try and try. At the worst, in two or three years we can thumb our nose at the boys who loan (or refuse to loan) and do the job "on our own."

Yesterday was a hard day in our office. Of the approximately two hundred students (see exact figure on front cover page), exactly 110 completed their enrollment on the first or opening day. It will be two weeks before the exact final total can be determined. Some, accepted in the Freshman class, have failed to show up for enrollment. Many upper classmen have yet to enroll. September 25th is the dead line for all classes.

At an opening assembly in Kaiser Hall, Monday morning, September 11th, more than fifty were absent. This, the second day of the session, finds all classes all running to full schedule.

A. A. KAISER, Secretary.

A SYMPOSIUM ON ENDOMETRIOSIS

(As arranged by five members of the Junior class in Surgery of the Kansas City College of Osteopathy and Surgery and presented before that class April, 1939. There is some duplication of thoughts and of words in these several contributions but they are, nevertheless, worked into a fairly comprehensive treatise of this important gynecological subject.

The following books have been referred to freely in this preparation: Christopher, Textbook of Surgery; Cole and Elman, Textbook of General Surgery, second edition; and Curtis, Textbook of Gynecology, third edition.—Margaret Jones, D.O.)

Endometriosis designates a variety of adenomatous lesions (glandular tumors) found in the female pelvis which present histologic and functional characteristics of normal endometrium.

It is known as a disease of theories because more suggestions as to the origin of these islands of ectopic endometrium have been offered than for any other disease.

Theories of earlier authorities were that these islands were:

1. Adult remains of the Wolffian system.
2. Inclusions of Mullerian rests.
3. Influence of inflammation on the endothelial cells of the peritoneum, causing them to be transformed into cuboidal or cylindrical cells.
4. Metaplasia or effect of inflammation.
5. Implantation theory proposed by Sampson is more widely accepted than any of the earlier theories. He proved that misplaced endometrial tissue, wherever found, is a histologic structure identical with the uterine mucosa, and is governed by the same physiologic factors as the mucosa of the uterus. Uterine or tubal epithelium may escape into the peritoneal cavity during menstruation, and these regurgitated fragments spill into the pelvic cavity, lodge on the various structures, especially the ovaries, become implanted, and eventually develop into adenomatous growths that respond to the stimulus of the sex hormones, the same as normal endometrium.

These adenomatous islands may develop into hematomas filled with menstrual blood, or they may remain

as small superficial red or purplish elevations on the pelvic structures. They may cause the formation of ovarian cysts which are filled with old menstrual blood, known as chocolate cysts.

The gradual increase of the contents of the cyst leads to perforation of the cyst wall, with dissemination of endometrial tissue for further implantation in the cul-de-sac, rectovaginal septum, rectum and uterine wall. Fragments of endometrium in the venous and lymphatic systems of the uterus have also been demonstrated, such as adenomyomas of the uterus and lesions far removed from the pelvis.

Sampson's theories are still greatly discussed and not yet fully accepted by all pathologists and research workers.

—Helen Vaughn.

- A. Endometriosis was suggested by Sampson to designate a variety of adenomatous lesions found in the female pelvis which present histologic and functional characteristics of normal endometrium.
- B. Called a disease of theories.
- C. Cullen gave first definite clue when he proved that the glandular phases of adenomas were derived from the endometrium.
- D. Earlier authorities attributed them to adult remains of Wolffian system; inclusions of Mullerian rests; the influence of inflammation on the endothelial cells of the peritoneum, causing them to be transformed into cuboidal or cylindrical cells; and metaplasia, or the effect of inflammation, by which the cuboidal cells of the germinal epithelium are transformed into cylindrical epithelium which resembles mucosa.

- E. Sampson whose theory is more widely accepted evolved his theory after an exhaustive study of perforating hemorrhagic cysts of the ovary, and proved that misplaced endometrial tissue, wherever found, is a histologic structure identical with that of uterine mucosa and is governed by the same physiologic factors as the mucosa of the uterus.
- F. Uterine or tubal epithelium may escape into the peritoneal cavity during menstruation and these regurgitated fragments spill into the pelvic cavity, lodge on the various structures (having a special predilection for the ovaries) become implanted, and eventually develop into adenomatous growths that respond to the stimulus of the sex hormones, as does normal endometrium.
- G. These adenomatous islands may develop into hematomas filled with menstrual blood, or may remain as small superficial red or purplish elevations on the pelvic structures. On the other hand, their invasive tendencies may lead to deep involvement of the ovaries, causing the formation of cysts which are filled with old menstrual blood, commonly called chocolate cysts.
- H. The general increase of the contents of the cyst leads to perforation of the cyst wall, with a second dissemination of endometrial tissue for further implantation in the cul-de-sac, rectovaginal septum, rectum and uterine wall.
- I. Fragments of endometrium in the venous and lymphatic systems of the uterus have also been demonstrated by Sampson; an important point in the explanation of deep-seated invasions, e.g. adenomyomas of the uterus and lesions widely removed from the pelvis.
- J. Sampson's conclusions are still the subject of much controversy.

—R. W. Polk.

The term endometriosis was suggested by Sampson to designate a variety of adenomatous lesion as found in the female pelvis which present histologic and functional characteristics of normal endometrium. It may be truly called a disease of theories, for more suggestions as to the origin

of these islands of ectopic endometrium have been offered than for almost any other phase of pelvic pathology. (Christopher)

DORLAND defines endometriosis as the presence of endometrial tissue in abnormal situations. It is called internal when endometrial tissue occurs in the wall of the uterus or fallopian tubes; external when it occurs on the external surface of the uterus, in the ovary, bladder, intestine, or extra-peritoneally.

PIERSOL in his definition says that the normal uterine cavity is lined by endometrium which is composed of a characteristic glandular epithelium, a loosely bound connective tissue, rich in small, round spindle cells and containing some smooth muscle cells. When some combination of these tissues grows elsewhere than in the normal location, an adenoma resembling endometrium is formed. Such a condition has been by Sampson described under the general term EN-DOMETRIOSIS.

BOYD says originally it was thought that this condition arose from remnants of the Wolffian body, but Cullen showed conclusively that in the majority of cases it is a continuation with the endometrium.

It remained however for Sampson to coordinate these scattered scraps into a unit by his theory of endometrial implants or endometriosis. According to his theory a backflow of blood may occur into the Fallopian tubes during menstruation, and in this way fragments of endometrium, both epithelial cells and stroma, may reach the peritoneal cavity. Menstrual blood has actually been seen issuing from the fimbriated ends of the tubes during menstruation, and endometrial tissue has been found in the lumen of the tube. The fragment thus liberated in the abdominal cavity may become implanted on the serous surface of the pelvic viscera forming small cystic structures containing blood at the menstrual period. These implants are most often seen in the ovary, where they form one variety of ovarian hematoma, and are commonly known as **chocolate colored cysts**.

CHRISTOPHER—The microscopic picture of endometrial lesions, wherever found, is fairly uniform. The glands are lined with a single layer of cuboidal or cylindrical epithelium, with darkly stained centrally placed nuclei.

Endometrial hematomas of the ovary vary in size from minute superficial lesions, involving only the surface of the organ, to large cysts measuring several cm. in diam. The small cysts are recognized as small red or purplish bodies on the surface of the ovary, the color depending on their age and the period of the menstrual cycle. The implants may affect only one ovary, although both are usually involved. The larger growths have their origin deep within the substance of the ovary. As the adenomatous lesion responds to the ovarian stimulus, bleeding occurs and cyst formation results. Perforation eventually occurs; the irritating contents are widely disseminated in the pelvis, causing secondary transplants that have more invasive tendencies than the original epithelium.

Sampson believes that the ovary acts as a hotbed for the primary implants, and that the secondary growths possess more active properties through having become accustomed to their environment.

Whenever perforation occurs the opening is promptly sealed or walled off by the adjacent structures, and the adhesions that result become so dense and fused that the type is characteristic. Beneath these dense peritoneal adhesions adenomatous invasion of the deeper structures of the internal wall, rectum, retrovaginal septum and uterus may be found. It then becomes an infiltrative rather than a destructive process. Only the ovary produces the larger destructive cysts, and the adhesions about them are so dense, owing to the infiltration of the underlying tissues, that removal without rupture is practically impossible. The associated pathologic findings are important from a diagnostic standpoint. The frequent incidence of endometriosis as a complication of fibroids of the uterus is striking; nearly one half of the cases will be found associated with fibroids. Retrodisplacement of the uterus and chronic pelvic inflammation rank next in frequency.

Next to perforating hemorrhagic cysts of the ovary the most characteristic lesion is endometriosis or adenomyoma of the retrovaginal septum. The growth usually presents as a diffuse nodular thickening in the vaginal vault, which frequently involves and fixes the cervix as well.

Cullen's classification is authoritative:

1. Small adenomyomas lying free in the rectovaginal septum.
2. Adenomyomas adherent to the posterior surface of the cervix and at the same time to the anterior surface of the rectum.
3. Adenomyomas gluing the cervix and rectum together and spreading out into one or both broad ligaments.
4. Adenomyomas involving the posterior surface of the cervix, the rectum and broad ligament and forming a dense pelvic mass that cannot be liberated.

Other lesions are those found in the inguinal canal, the round ligaments, the rectum and scars following laparotomy.

PIERSOL says that the most prominent characteristic of endometriosis is the presence of blood which is sometimes fresh, but more often is undergoing disintegration. In the relatively few cases in which fresh blood is found the color is red, but it is far more common to see the accumulation of repeated bleedings which develops a color from reddish brown to purple, or even black.

Physiological response to hormonal stimulation demonstrates the close relationship to normal endometrium. Engorgement occurs at the height of menstruation, to be followed by regression, the cycle recurring periodically until the menopause. Pregnancy is accomplished by enlargement of the ectopic growth.

G. E. Risberg.

SYMPTOMS

Endometriosis may be a slow and insidious disease. Amazing destruction may take place with few if any symptoms to point to its presence. As a rule the symptoms are progressive and depend largely on the complications. Pain, usually dull and aching in character, and is localized low in the abdomen and back, and always aggravated during the menstrual period, is frequently emphasized. Acquired dysmenorrhea is very suggestive, menorrhagia and metrorrhagia appear in about one-half of the cases, and dyspareunia is more common than any of the other symptoms. There is really nothing characteristic in the symptoms by which a diagnosis can be made. Keene insists, that it is not a single symptom, but rather the symptom complex that aids in making a differential diagnosis, and empha-

sizes, (1) Age, between 25 and the menopause, (2) Sterility, absolute or relative, (3) Abnormal menstruation, usually menorrhagia, (4) Dysmenorrhea, of the acquired type, (5) Dyspareunia, (6) Sacral backache (7) Intermenstrual lower abdominal pain with increased discomfort at the time of menstruation, (8) Pain in the rectum or bladder which bears a distinct relation to menstruation.

DIAGNOSIS

The majority of cases of endometriosis are not recognized before operation. The usual diagnosis is chronic pelvic infection or fibromyoma of the uterus associated with diseases of the appendages. Vaginal examination reveals a tender, densely adherent semi-solid or firm adnexal mass. The uterus is adherent and retrodisplaced. The only distinctive lesions are the nodular fixed masses which are palpated in the cul-de-sac. Rectal examination should always be made, as it reveals more evidence than vaginal palpation. Proctoscopic examination is of distinct value in differentiating malignancy. The rectal mucosa overlying the nodular masses is normal in endometriosis, but rarely so in carcinoma. Nodular areas in the vaginal vault often show red or purplish spots, and are conclusive evidence when found. The rectovaginal septal lesions may exist without ovarian invasion, but, in outlining treatment, it must be remembered that both are more frequently involved. There are no characteristic symptoms in widely situated lesions, such as in the umbilicus, laparotomy scars and the inguinal canal, other than the exaggeration of symptoms and occasional bleeding during menstruation. GreenArmytage has found injections of milk of value in differentiating between chronic pelvic infection, endometriosis and pelvic tuberculosis. He insists that the reaction following these injections which commonly occurs in infections does not occur in endometriosis or tuberculosis. The condition has been confused with pelvic tuberculosis. GreenArmytage emphasizes the value of Von Pirquet test when tuberculosis is suspected.

From—Christopher Textbook of Surgery. —Elburn Smith.

PROPHYLAXIS AND TREATMENT

An important phase of treatment is prophylaxis. However, concerning this not a great deal can be said. Follow-

ing the generally accepted theory of Sampson, that of transtubal implantation, the physician should avoid rough pelvic examinations during or at the onset of menstruation. Also, operations should not be performed too soon after menstruation as these factors all seem to play a part as exciting causes of the condition.

Treatment of endometriosis may be divided into two classes; palliative or conservative and radical. Conservative treatment may be used when that gives sufficient relief. Usually we have to resort to radical treatment however, of which we have two methods of procedure; operation and irradiation.

Operation. Before deciding on operative interference two important points should first be determined: (1) that there is a definite pathology present not relieved by palliative measures; and, (2) that the persisting pain and disability are serious enough to warrant operation. Operation in the young woman requires more judgment than in the older woman who is approaching the climacteric. Too often radical surgery is necessary but as far as possible we try to follow conservative surgery. Small chocolate cysts may be removed by resection or cautery. Often one ovary may be saved. Unfortunately though, many patients of this class may require a secondary operation.

Operation is ordinarily better than irradiation for three reasons: (1) to preserve ovarian activity, if possible; (2) to eliminate malignancy; and, (3) to eliminate a mass causing pressure disturbance.

Preservation of ovarian influence is important in the childbearing period. In this condition there is also a strong possibility of misdiagnosis and upon operation chronic inflammation, ectopic pregnancy or a new-growth may be found, any of which may be removed and ovarian activity preserved. Then, too, even if the pathology be that of endometriosis, the pathology may be limited to tissues such that the growths can be removed and yet ovarian activity preserved.

In the patient over the age of forty years the elimination of malignancy assumes an important aspect. The supposed endometriosis may prove to be malignant, either primarily or as a latter secondary factor. In either case positive knowledge should be

acquired promptly and the tumor removed if practical.

In those cases of endometriosis which are positively diagnosed pressure disturbances are usually an important part of the symptom complex. In this event treatment by irradiation will stop the process but it does not remove the pathology already present. The pain and disability persist, which to the patient especially is of major consideration.

Operation for pelvic endometriosis carries with it certain special dangers. These are due to the nature of the adhesions present in this condition. These adhesions are not simply agglutination of surfaces as in inflammation. The dangers present are: (1) a tear into the bowel; and, (2) postoperative intestinal paralysis and peritonitis.

In endometriosis adherent walls are fused by tissue growths and attempts to separate them carries the danger of tearing into the intestinal tract. Rough or hurried separation by palpation only is to be avoided for the line of cleavage may extend into the lumen of the bowel. Dense adhesions should be separated by sight as well as touch. Limit separation as much as possible, breaking the adhesions only when necessary to allow safe removal of the abnormal mass.

Another serious problem in these cases is to get the patient through the postoperative stage without intestinal paralysis and peritonitis. Just what it is that makes these patients prone to the above is not very clear, for there is no primary infection. One

very likely theory is that the extensive damage to the intestinal walls interferes with peristalsis and also favors escape of the colon bacilli into the damaged area, causing post-operative paralysis and peritonitis. Because of the great frequency of this condition one authority recommends that drainage be provided in every case of operation for endometriosis.

Irradiation. Irradiation stops ovarian activity and thus checks the recurring menstrual exacerbations and progress of the endometriosis. Irradiation may be useful in the following classes: poor operative risks and post-operative activity. Many men advise against irradiation at all, however, because of the possibility of lighting up a latent disease, which may have been mistaken for endometriosis.

In a person seriously handicapped from the operative standpoint irradiation may be used to stop the increasing pain and disability. This is especially applicable in the patient approaching the menopause. The preferable form of irradiation, X-ray or radium, depends upon the structures involved.

Persistent activity in an area of endometriosis after operation is an indication for radiotherapy. It is difficult to completely remove the pathology and a small area left may flare up and cause symptoms. Occasionally there is persistent activity even after removal of both ovaries and the endometrial cysts. In all these conditions irradiation is our only remaining method of treatment.

—Paul Williams.

AN ANNOUNCEMENT

Dr. Mabel Andersen of the college staff will offer a two weeks' course in Proctology starting November 1st. All types of rectal conditions will be treated and operated according to the requirements of each case.

This class will be limited to a small number, so that each visiting doctor may have a close up view of all work done and operate a satisfactory number of cases.

A nominal fee of \$100.00 will be charged for this work. In order to reserve a place in this class, one-fourth of the fee should accompany your application to Dr. Andersen, and should be filed at an early date.

POSTURE AND ITS INFLUENCE ON THE GROWING CHILD

Byron E. Laycock, D. O.

(Delivered at the Child's Health Conference—April, 1939)

In utero the spine is in a position of flexion and is delivered by an extension process. The infant, for a period of several months, has no curves in the spine whatever except a flexion curvature to the sacrum. As soon as crawling is begun there is developed the physiological series of spinal curvatures. Support from the lower extremities through the sacrum and by the arms to the dorsal area produces a thoracic kyphotic and lumbar lordotic curve that is accentuated by the weight of the hanging viscera. The cervical lordotic curve is the result of holding the head erectly while in the all-four or crawling position. Segmental muscle tonus and ligamentous support is encouraged in this all-four position while the youngster is in the crawling age.

Soon, however, when the youngster begins to stand erect, the hip joints are thrown into extension and there is a tendency toward an increase in the three physiological curves in the spine above the sacrum. There is an increase then in the angle of pelvic inclination with a resulting increase in the lumbar index with a subsequent relaxation of the abdominal walls giving the characteristic "pot-belly" of the youngster.

Within a period of several years, however, normal segmental relationship should improve so that there is a lessening of the angle of the pelvic inclination, a lessening of the lumbar index as well as a lessening of the thoracic kyphotic and cervical lordotic curves. With a decrease of the angle of pelvic inclination and a decrease of the lumbar index, the ventral abdominal wall becomes flattened, the diaphragmatic excursion is increased by the flattening of the ventral wall and flaring of the costal arches.

Should any factor interfere with the development of the normal segmental control; and the increased angle of pelvic inclination, along with

the increased lumbar index be maintained over a longer period of time than is customary, the decrease of diaphragmatic excursion that characterizes this type of posture predisposes to a prolonged diminution in the rate of venous and lymphatic return from the abdomen. This factor is probably important in the production of an imbalance between sympathetic and parasympathetic control over gastro-intestinal function and is in all probability etiological in the paving of the way for the subsequent developing of many of the gastro-intestinal upsets coincidental with the first few years of an individual's life.

Prolonged passive congestion in the viscera is, of course, not conducive to good vegetative function. It also hastens the subsequent developing of scar tissue and impedes proper developing of the organs in the abdomen and pelvis.

With a hyper-lordotic curve in the lumbar area there is a decrease in the rate of venous and lymphatic return from not only the abdominal cavity and pelvis, but also from the spine and cord itself. It is in all probability coincidental that this passive or venous congestion and lymphatic congestion in the lumbar and sacral areas of the cord predisposes to the involvement of that portion of the cord by the virus of Poliomyelitis. It is more frequent that the legs are affected in Anterior Poliomyelitis than the arms or any portion of the body above the lumbar area.

It has been observed in those instances of brachial paralysis that the cervicodorsal and cervical area is involved in extreme curvature and fairly acute cervico-dorsal juncture in the spine.

Goldthwait states that posture in different types of individuals with regard to stature, undoubtedly influences immunization reactions. This is a hint for Osteopathic research, at least.

A factor of great importance in determining the posture of a child is the proportioned rapidity of the growth of the lower extremities. The less a leg is used, the lower its nutrition, the less it will grow. Individuals are born with slight variations in the length of the lower extremities which is exaggerated by unequal use of the extremities during the formative or growing years. The use of one leg constantly on a skooter predisposes and actually produces a better nerve and blood supply to the leg that is used for propulsion than is found in the leg that rides on the skooter.

Invariably it will be found that a short extremity in a youngster is the one that has not been exercised or used as much as the other. Any unusual shortness of an extremity will require compensatory pelvic twist, sacral torsion, lumbar, dorsal and cervical curvatures to maintain body balance. These curves blend at the dorso-lumbar and cervico-dorsal juncture and are scoliotic in nature. Unfortunately the physiological anterior-posterior curves blend at these same areas and have the same areas for their points of greatest curvature.

Consequently poor posture that increases the anterior-posterior curves is quite frequently complicated by lateral curvatures placing stresses in the same areas in at least sixty per cent of all individuals.

Since we can, as a profession, regulate the amount of work done by a leg and can supervise the exercise and rate of growth of the lower extremity in the growing child, it is our obligation to make sure that the utilization of the extremities will be equalized or more concentrated on the extremity that is shorter or deficient in its growth, so that when the epiphysis becomes calcified, the lower extremities will be equal or fairly equal in length.

To neglect to assure normal or equal leg lengths during the growing years, necessitates in at least fifty per cent of individuals with anatomically short extremities, the wearing of a lift that is not always cosmetically attractive. If we permit unequal use of the extremities and closure of the epiphyses with unequal leg lengths resulting, we have failed in one obligation to a growing child—that of a life time of asymmetry resulting.

At the points of greatest curva-

tures and at the point of juncture of curves in the spinal area, we develop areas of fixed postural tension. The soft tissue changes that result in these areas are those of a chronic inflammatory nature as a resistance to the stresses placed or thrown into the spine by poor distribution of weight.

We find altered metabolism with the accumulation of toxic products in these tissues. Some of the toxins are formed in the nervous tissues of the cord and ganglia. Muscular contraction is present which is initiated by abnormal stimuli from the hyper-irritable segments of the cord and maintained by the metabolic toxin irritation.

Due to the retention of metabolic products, edema results with the production of a relative acidosis.

In addition to these changes one of the most prominent tissue alteration is hyperesthesia—tenderness on pressure. This hyperesthesia is due to abnormal irritability of the sensory nerve terminals in these areas.

Vasomotor irregularities in the form of active hyperemia followed by passive congestion are present, and trophic changes in the cord and ganglia.

In conclusion, the osteopathic physician must maintain in a growing child a normal posture that is conducive to good segmental relationship, normal venous and lymphatic return from the abdomen, pelvis and spinal area with a normal range of motion in the spine, particularly at the points of juncture and at the apices of physiological curves and prevent the development of lateral curvatures due to unequal leg lengths and insufficiency of the spine due to poor segmental muscle tonus.

References:

- "Body Mechanics"—Goldthwaite.
- "Lymphatics"—Millard.
- Steindler's Diseases and Deformities of Spine and Thorax.
- "Orthopedic Surgery"—Campbell.
- "Pediatrics"—Holt.
- "White House Conference."

"Surgery is more a matter of mental grasp than it is of hand craftsmanship. I think all of us who have worked years in the profession understand that many very skilled operators are not good surgeons."

William J. Mayo, M. D.

FOCAL INFECTIONS OF THE NOSE AND THROAT

W. E. Hartsock, D. O.,

(Delivered at the Child's Health Conference—April, 1939)

I believe we all are beginning to realize the importance of sinus infection and its relation to focal infection of the nose and throat, also its relation to systemic diseases. We have found in our clinical experiences that children are not susceptible to nasal hyperplasia and hypertrophy of the turbinates unless there is one of the following conditions: inflammation and retention within the sinuses, deformities of the nasal passages and auto-intoxication which in a large percent comes from improper feeding. I believe and have been able to prove to a large extent, that retention and infection of the sinuses is the outstanding offending factor. Another thing to consider—the child has not built up a natural immunity and is more susceptible, therefore, the reason for stressing sinus infection in this paper.

The nose is subject to more injury and infection than any other part of the body as about 85% of the infection enters the body through the nose and mouth. We know the nose furnishes far more cavities of a retention nature. I mean retention of inflammation and infection which is difficult to reach or seriously complicates treatment. The foci of infection is the cause of a great many systemic diseases, of which the nasal accessory sinuses play a large part.

The primary attack has been made on the teeth, tonsils and adenoids, since they are easy to investigate and very few can stand a rigid examination. The result—when the physician has removed these foci of infection he usually believes that all has been done that is necessary and leaves the sinus infection without further examination or treatment. I might say here that very few Osteopathic practitioners or specialists realize or think of the middle ear being one of the accessory sinuses and that it is subject to the same diseases as the other accessory sinuses.

Usually the middle ear doesn't attract attention until the hearing is involved or pains and the patient seeks relief, giving a history of the middle ear being involved over a period of years. I have read articles claiming that deafness is due to bone infection

such as temporal bones and mastoid which in a large percent might be true. Also there is a theory which I believe will carry considerable weight that soft tissue lesions are responsible for most deafness. Of course we have theories that infection is blood borne or blood stream infection. One specialist claims the ethmoid probably is the seat of all serious nasal trouble, others the sphenoid, others the antrum and some the middle ear. I am definitely positive that you cannot have an infection of any of the accessory sinuses without having more or less involvement of all the Sinuses and structures of the nose.

Some have accepted the theory that deafness is at first a disease of the mucous membrane. If this be true then our treatments should be directed to the sinus diseases as the cause of hyperplasia and hypertrophy of the nasal membranes, and by overcoming this infection we improve the hearing that is left and stop its progress even though we are unable to normalize the structure and function already destroyed by infection. In our experience of a number of years using the special type of equipment developed by our clinic, I have found it impossible to get results in deafness, post nasal drainage, adenoids, frequently tonsil infection, and impoverished general health without first clearing up the foci condition of the nose and accessory sinuses. A good many years ago physicians claimed that a large amount of phlegm in the nose and throat was the cause of dullness of children. At that time they did not realize the seriousness of Sinus Infection and in fact did not know much about it, but at least the opinion formed was more or less correct. A large percent of our optical problems, on checking up, are due to nasal inflammation—ethmoid and sphenoid being the principal. Following the clearing of these sinuses we sometimes get almost complete relief.

We accepted the statement a good many years ago that children with adenoids were dull in school and this is a fact; however, the adenoid condition alone in a large percentage of the cases is secondary for I have found Sinus and Nasal inflammation in

practically every case that had considerable hypertrophy of adenoids and tonsils. I want to make this statement regarding the foci infection—that we cannot have inflammation of tonsils without having sinus infection.

The next proposition that comes to the physician is that of the method and how he might examine a patient in order to disclose some of the above mentioned symptoms. The only methods I can give you are the methods that we have been using for a number of years in our Hospital. With a fair degree of success in making a diagnosis we first take a case history of the child finding out as to whether they are subject to frequent colds, any pains or symptoms of neuritis, growing pains, whether the tonsils and adenoids have been removed and as to how the child gets along in school, whether any nasal surgery, treatment of nasal membrane or any history of ear ache. The ears are checked with a tuning fork and other methods.

For objective findings we examine the nose with nasal speculums to see if there is any hypertrophy of tissue, the tonsils as to whether they are nodular or have a solidified material protruding from the crypts. Also examine the post-nasal area with a Pharyngoscope and note the inflammation, the redness of tissue, also whether the adhesions of the Fossa of Rosenmuller is present. Examine the external ears as to size, etc., the cervical spine as to tenderness, also the glands of the throat and neck. Take the temperature, also have the family take the temperature every three or four hours and report back later and finally trans-illumination and X-ray if needed.

Treatment

Remember, in dealing with the nasal cavities we have rigid walls. We still have cavities after surgery and in my experience surgery and electrical cautery have been very disappointing as to future results. I consider all pain and distress of sinus trouble due to swelling and thickening of tissue, and any treatment that will reduce the process just mentioned is correct, if not destructive to other tissue.

My method of treating young children is with vibration, plus osteopathic treatment and diet. In some cases we use X-ray, while on older children and adults we use copper ionization, vibration and dietary measures. In all these foci of infection cases we find Osteopathic lesions and diet play a large

part, while deformities are at times only secondary.

Osteopathy is a science. Its use is in the healing of the afflicted. It is a philosophy which embraces surgery, obstetrics and general practice. An osteopath must be a man of reason and prove his talk by his work. He has no use for theories unless they are demonstrated. Osteopathy is to me a sacred science. It is sacred because it is a healing power through all nature. I am very jealous of it and will accept nothing from any man's pen as a truthful presentation of this science unless he courts investigation and proves by demonstration that every statement is a truth. It is a science that asks no favors or friendship of the old schools; they have long since acknowledged they have never discovered a single trustworthy remedy for any disease. Having been familiar myself for years with all their methods and having experimented with them I became disheartened and disgusted and dropped them.—A. T. Still.

Kansas City College
of Osteopathy and
Surgery

The
"Aggressive
College"

PEDIATRICS IN ENGLAND*

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On reaching London one is immediately impressed with climate in contrast to that country from which you have come. When we stop to consider that England is as far north as Labrador and its climate is made temperate by the Gulf Stream, we appreciate its peculiarities.

It is interesting to note also the effects of this climate on the health of the inhabitants. The dampness, rain and fog is most beneficial to the complexions of the inhabitants and the flowers, but causes many colds and sinus disturbances. Lack of proper heating may be etiologically responsible for some of the conditions in the clinics. Sixty degrees F. seems to be a maintenance heat for the middle and lower classes. Plumbing is also inadequate for best sanitary conditions. Most of heat is by stoves and fire places and seems very primitive to Americans who are surrounded by up-to-date, efficient and adequate appliances. Lack of screens make wasps and flies plentiful.

The slums are poor squalid places and probably are responsible for much disease and misery.

The diet is rich in pastries and meat; many boiled potatoes and much oatmeal porridge are consumed. Vegetables and fruits are sadly lacking in the diets of the poor people and thus will account for the vitamin deficiency that we will speak of later.

Mid wifery is most prevalent in the obstetrical field, and while the mortality rate is low, one is impressed with the many cripples he sees and is prone to attribute a good percentage of these to birth injuries. The hospitals are free and maintained for the poor people who are not forced to pay for services. The people in the more fortunate circumstances who can pay for services are cared for in Nursing Homes which resemble our small private hospitals; these are equipped with competent nurses.

In London I confined my visits to Children's hospitals. Our first and most frequent visits were to the Children's Hospital in Great Ormond St. This hospital, a very modern structure, has an interesting history. It was founded in 1832 in the residence of the famous Richard Mead, where the ball-room served admirably for the out-patient department. It had

originally consisted of 10 beds. Adjoining houses were purchased in the course of time and by 1860 there were 691 house patients, and 12,200 out-patients could be treated annually. The present hospital contains 252 beds and the hospital maintains a rural convalescent home. Doctor West, one of the early pediatricians of London, placed emphasis on the importance of training nurses properly for the care of sick children, and a modern training school for nurses has been established at the hospital. This hospital is of great significance in the progress and development of English Pediatrics.

Another famous great Ormond St. Hospital physician was Walter Butler Cheadle, who first described infantile scurvy, a disease which up to that time was shrouded in mystery. The disease is characterized by pain and tenderness in the extremities, associated with hemorrhages and swelling of the gums. Cheadle recognized these symptoms of scurvy and believed that the disease resulted from the use of artificial food which possessed no antiscorbutic properties. Dr. Samuel Jones Gee was another famous physician who served on the staff of this great hospital. It was he who gave the original description of celiac disease. Dr. Geo. Grederick Still, one of the pioneer teachers in pediatrics and one of the foremost specialists in England, is now a consulting physician on the staff of this hospital.

It is interesting to note how many contributions to medical literature on rheumatism in children have been made by staff doctors of the Great Ormond St. Hospital for children.

On my first visit to its clinic, I saw a very modern building with facilities for clinically taking care of many children. The clinic is rather ideally arranged, with its large waiting room accommodating many children and parents who are commanded by competent nurses registering and assigning the patients to proper channels.

The methods of examining and the instruments used were quite out of keeping with the building—for instance, the examining physician used a pewter spoon for throat examinations which was thrown into a bowl of lysol solution when he had finished

with it. The great complacency of the English people was displayed by the examiner, who was not in the least perturbed by the large room full of waiting patients, but leisurely examined the patient, talking at length with the mother of the patient concerning the progress of the case, and her methods of carrying out his former instructions. Both the patient and physician and patient's parent were exceedingly frank with each other and all seemed to be satisfied with the consultation. No concern is manifested by the physician in charge if patients are not seen, and patients seem perfectly willing and contented to return again.

The cases I saw were interesting and unusual. Two cases of amotrophic lateral sclerosis—(Charcots type of muscular atrophy) were among the first cases presented. We were much impressed as there are only a few cases of this disease beginning childhood that have been reported. They were typical cases—a sister and brother, aged 7 and 5 years, in whom the malady was first noticed after they started to walk and the girl's case was more progressive than the boy's. There was atrophy of both legs and arms and the spasticity being more marked in the legs, with probably more atrophy in the arms. There was an increase of the tendon reflexes and fibrillary twitchings, the examining physician taking time to demonstrate all symptoms. The fact that the course of the disease is slow, lasting for over several years, was quite evident as both children were carried in and were helpless. The cases were uninfluenced by any treatment given from the lack of care. It seemed that either or both might be carried off by some infectious disease. Both had badly infected tonsils which were not being cared for and was probably aggravating the primary disease. There were early signs of bulbar symptoms as the speech was slightly interfered with and the swallowing affected.

The only treatment recommended was massage. While the children were emaciated, little attention seemed to be paid to the diet or hygienic care.

Evidently their methods of isolation are not well constructed as a child was presented, a Jewish female, aged 4 years, who had been in the hospital 5 weeks with diphtheria followed by eleven weeks with pertussis and now exhibiting a positive man-

ton, pain in limbs, especially at night, cervical adenitis and mitral heart lesion. The child also had very bad teeth which was a symptom common to most of the patients we saw.

The dentists in London are conspicuous by their absence and a great need for them is evident by the lack of care of teeth among the middle and lower classes.

The many cases of bad tonsils and the reluctance with which tonsilectomies were recommended was rather conspicuous.

One case of a boy of 5 years exhibited a paralysis of the left side of the body and face. The result of a convulsion following administration of ether for a minor operation. The only treatment recommended was massage and the mother told us the boy was improving very much under the treatment. There seemed to be a preponderance of cases of enuresis and pyelitis in the clinic patients all of which were treated by various drugs.

It was extremely interesting and absorbing to note the numerous conditions that massage was recommended and the satisfaction with which physicians spoke of the results obtained. The many cases of malnutrition I think can doubtless be easily accounted for by the dietary problems which confront these people. The scarcity of fruits and vegetables, and the lack of them probably would explain some of the cases of rickets as being of fetal origin. The lack of some of the foods containing vitamins A and D and the scarcity of sunshine would explain some of the etiological factors.

In America we use whole milk, while in England they have very thick cream and very blue skimmed milk but the cream is used mostly by the luxury class. Proprietary milks and evaporated milk would help to solve some of the deficiencies—if they can be accomplished by vitamins A and D and C. Fresh fruits with the exception of plums are scarce and expensive. Tomatoes are mostly hot-house grown, cabbage and marrow are the other vegetables which seem most plentiful in season. The countries seem to be far behind us in refrigeration methods and there is only canning for preservation of foods out of season.

The prevalence of rheumatism in children did not seem more marked in England than in America, but it may

have been because it was warm and the symptoms were not exaggerated or because a great many cases were on a holiday, as the doctors were during August. The highest the thermometer registered was 82 and everywhere the people were complaining of the terrific heat. In America at the same time the thermometer was soaring between 90 and 100 degrees. The fact that English writers have discussed rheumatism extensively in their contributions and apparently have had small experience in dealing with the condition in childhood.

A collective treatise on diseases of children by Dr. Leonard Parsons and Dr. Seymore Barling published 1933 states in the preface their book entitled "Diseases of Infancy and Childhood," that until recently, instruction of students in the subject of Pediatrics was greatly neglected in the British schools, but that there are signs that this reproach may be removed within a few years. The formative years of childhood, they state, offer to the biochemist and psychologist opportunities for study, which may solve many problems in the adult, which hitherto have been completely baffling.

Today the subject of pediatrics includes the study of both the healthy and the sick child not only with regard to curative, but also preventive medicine.

The British Journal of Diseases of Children founded in 1904 and the Archives of Diseases in Childhood (1926) have been published to make conclusions of the various pediatricians available; to give workers an opportunity to submit their observations to public criticism and make discoveries in diagnosis and treatment available for public use.

Dr. Leonard G. Parsons of the Birmingham Children's Hospital has contributed much on Celiac disease, fat metabolism and anemia in infancy and early childhood.

In England they have not established well baby clinics on as large a scale as we have in America and although I think the need is doubtless just as great in London as it is our large cities. The psychology of a well baby clinic is always stimulating as it creates a certain rivalry among the mothers. Everyone wants her baby to be more nearly perfect than her neighbor's and she takes extra pains to carry out the doctor's instructions in order to gain that end.

In America these clinics have done more to reduce infant mortality rate than any one thing.

I spent one afternoon in the Infants' Hospital, Vincent Square, Westminster, observing their feeding clinic which was most interesting. The thing that impressed me very much was the consistent gain in weight of the babies who were put on the various formulas but the physicians were prone to use excessive carbohydrate in the formulas, mostly in the form of dextrans so that accounted for the weight increase. I think on the whole they probably use more proprietary milks than we do but due to the inadequate refrigeration this is much safer to use, proprietary milk than fresh milk.

American pediatricians have delved a little more thoroughly into the fundamental facts concerning the nutritional requirements of infants, and have established better means for meeting these requirements to a more perfect degree because their facilities are more adequate. I was impressed with the simplicity of the instructions for feeding which were given out on cards in the English feeding clinic. The cards are in no way intricate or difficult to understand.

The doctor in charge was at ease and gave each patient plenty of time. The nurse in charge brought him patients as he dictated and at no time during the afternoon was he aware of the number waiting for him. Their chief handicap, as I saw it, was the inability to include fresh fruits and vegetables in the diets as they are expensive and not plentiful as we see them in America—Even bananas were not much in evidence either in stores or on children's diets.

Constipation was a symptom that was regarded most lightly and not considered to be responsible for ills that we attribute to it.

On the other hand, I think diarrhea was a much more common symptom than we meet with, and again I feel it is due to poor methods of preservation of foods and is probably another reason for proprietary foods.

The important reciprocal relationship existing between infections and nutrition in infancy was evidenced by the number of infections that were reported with the nutritional disorders. Infants whose diets had been inadequate in total fuel value or

vitamins or proteins and which, as a result, had become undernourished, seemed especially susceptible to infections. Infants in general are more susceptible to infections or the rhinopharynx, middle ear and urinary tract than are older individuals, and it is these infections which are especially likely to exert a deleterious effect upon the nutrition.

Because of the fact that any of the symptoms produced as the result of infections are similar to those resulting from an unsuitable diet, a frequent error is made in assuming that the food is at fault when the difficulty is really infection. On the mistaken assumption that the symptoms are due to unsuitability of the food, the diet is often changed by reducing various food elements and this leads only to greater impairment of the nutrition and further susceptibility to infection. Certain infections in infancy are so common and so frequently associated with nutritional and gastro-intestinal disturbances as to deserve special and somewhat detailed consideration.

While it was August, there were numerous cases of "cold in the head." This was of little importance in itself except where there was threatening extension into the middle ear or bronchi. In infancy the chief cause of alarm to the parents, is the refusing of food and occasional vomiting with slight rise in temperature. Little change in diet is indicated in these cases as the infant himself limits the intake. In most cases the treatment recommended was argyrol or neosilrol in 5% solution and no change in the diet.

A few cases of otitis media were exhibited and several in the malnourished children exhibited diarrhea and the treatment was directed chiefly to the primary lesion and not to the diarrhea. In one case the diarrhea had taken on a more serious aspect and there was marked dehydration with an impending acidosis. Two cases of profuse draining over a period of three weeks were in exceedingly emaciated children and it looked very much as if there was an impending mastoid. Very little was recommended to these children in the way of nutritious diet or other supportive treatment. Most of the treatment was directed to local treatment; not even fluids forced to combat the dehydration.

There were cases exhibiting ear

marks of rickets and the treatment recommended in most of these cases was entirely dietary and vitamin D. As a whole there seemed to be a greater number of undernourished looking children than we find in our clinics, but during the afternoon at the Infants' Hospital I did not see one infant with a history of prematurity, and the fact that there is little published in English pediatric literature on this subject, I feel that it is not a very prevalent condition.

It is very difficult to get the best picture of the English clinics at this season of the year and I am hoping to sometime get to them when the teaching clinics are in operation and more diversified clinic material exhibited.

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LYMPHATICS

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The lymphatic system consists of complex capillary networks which collect the lymph in the various organs and tissues; of an elaborate system of collecting vessels which conduct the lymph from the capillaries to the large veins of the neck at the junction of the internal jugular and subclavian veins, where the lymph is poured into the blood stream; and lymph glands or nodes which are interspaced in the pathways of the collecting vessels, filtering the lymph as it passes through them, and adding lymphocytes to it. This is a closed system. The lacteals, otherwise characteristic lymphatic vessels of the small intestine, contain, during the digestion period, a milk-white fluid, the chyle.

There are regular lymph nodes, among the lymphatic organs, as well as hemolymph nodes (in which there is a close resemblance to ordinary lymph nodes, with the essential difference that their sinuses are blood sinuses rather than lymph sinuses), the thymus, palatine tonsils, lingual and pharyngeal tonsils, and the spleen, a hemolymph node in which lymphatic vessels are not numerous.

Lymph is a transparent, watery liquid similar to blood plasma in most respects. It is usually colorless to slightly yellow, although it may at times be rose-colored due to the presence of red corpuscles or opalescent because of globules of fat. It like plasma, contains salts, albumen, fibrin and water.

Also contained in the lymph is its corpuscle, or lymphocyte, which is a variety of white blood cell arising from the reticular tissue of lymph-glands and lymph-nodes. Its function is not definitely known, but it may contain a lipolytic ferment. It reproduces by mitosis and is capable of ameboid movement.

The thoracic duct is the chief terminal lymphatic duct of the body. It drains the lymph from all parts of the body except the right side of the head and neck, right upper extremity, the right side of the thorax, heart, and pericardium, the right lung and pleura, and the convex surface of the liver, all of which exceptions are drained by the right lymphatic duct. The thoracic duct has its origin at the cisterna chyli, a dilatation, triangular, to the right of the aorta and behind it, and

in front of the first and second lumbar vertebrae, enters the thorax through the aortic opening in the diaphragm between the aorta and vena azygos, passes up through the posterior mediastinal space, crosses the median plane about the fifth thoracic vertebra, enters the superior mediastinal space and ascends behind the aortic arch and the thoracic part of the left subclavian artery to the upper orifice of the thorax, where it forms an arch and enters the beginning of the left innominate vein at the juncture of the left subclavian and left internal jugular veins. It is about 45 cm. in length. It anastomoses with the right lymphatic duct through several communicating branches. The right duct is about 1.25 cm. in length, courses along the medial border of the scalenus anterior at the root of the neck where it ends in the right subclavian vein at its angle of junction with the right internal jugular vein, its orifice being guarded by two semilunar valves to prevent the passage of venous blood into the duct.

The larger lymph vessels are similar in structure to veins, their walls, however, being considerably thinner than those of veins of the same caliber, and the lymph vessels have more valves, which are folds of the intima and always occur in pairs. The vessels are capable of great distention and, when they are empty, their walls come into apposition as the vessel collapses.

The thoracic duct has three well-defined coats: the intima, endothelium which lies on subendothelial fibroelastic tissues; a thick media of circular smooth muscle fibres; and the adventitia of longitudinal elastic connective and smooth muscle fibres. The capillaries are thin and have walls composed of a single layer of endothelium. These capillaries are found in the skin, conjunctiva, muscle sheaths, tendons of smooth muscle, joint capsules, periosteum and Haversian canals, kidney (subserous), bladder, prostate, testis, uterus, ovary, heart, trachea and bronchi, liver, spleen, salivary glands, thyroid, thymus, nasal cavity, alimentary canal (sub-epithelial), and between the mesothelial lining of the pleural, peritoneal, and pericardial cavities. Their presence is disputed in muscle tissue, as well as in the bone marrow,

and they are not found in epidermis, cartilage, or subcutaneous tissue. The vessels form a closed system not in direct communication with the lymph spaces.

There is a great number of factors in facilitating the flow of lymph through the system. We know that respiration normally tends to aid the lymph flow as the diaphragm has its movement and the abdominal muscles contract and relax. The decreased intrathoracic pressure also allows the normal pressure below to send blood upward, as well as lymph. The heart-beat aids in lymph flow, as well as in blood flow. Peristalsis, as well as skeletal muscle action including exercise, is of importance, and their aid is taken advantage of by the valve system of the lymph vessels. It is easy to see the importance of manipulative measures, then, in aiding the flow—both locally in noticeably edematous tissues and generally in the larger vessels and lymph-patches.

For every congested tissue there is a corresponding lymph disturbance. Whenever and wherever pus is found there is almost always enlargement in the nearest nodes. The lymph stream ebbs and flows according to the amount of blockage and nodular enlargement at certain points. Edema is significant of lymph blockage. Nodular enlargement is not always between the terminal lymph drainage and distant disturbance. There may be a reverse lymph flow in spite of the numerous vessel valves. Enlarged nodes may irritate or over-stimulate nerve trunks. These few observations are important for the student and physician to remember as he starts considering a diagnosis, but diagnosis can oftentimes be made or aided by studying the conditions of the lymphatics. Millard claims differentiations can be made, as between operative and non-operative appendicitis, for instance, by palpation of the inguinal nodes.

In lymphatic examination, study should be made of the nodes of the ankle region, popliteal region, inguinal area, liver region, axilla, and the different cervical groups.

Although the study of lymphatics is a comparatively recent science, several phases have been recognized for decades past: The "kernels" of the neck in acute coryza or tooth abscess or tonsillitis and of the axilla in general infection or, sometimes, gastro-intestinal disturbances. Now we

recognize other phases of lymphatic indications as well, and, with the aid of modern pathological methods, we learn of diseases of lymph organs, lymph-associated diseases, and diseases caused or abetted by lymphatic structures: lymphadenitis, lymphatic leukemia, lympho-blastoma, lymphoma, lymphosarcoma, lymphoepithelioma, aleukemic lymphadenitis, lymphadenoid goiter, and carcinoma metastasis, and the focusing of infections in the nodes.

As an organ, the appendix is interesting, as its collection of lymphatic tissue, undeveloped at birth but probably in function by the eighth month, causes Berry to conclude that it is a regular lymph organ, and hence undergoes degeneration in later life as is the tendency of other such organs.

In cases of infection of the lymph nodes of the axilla, if they tend to become foci, they may be removed surgically, without too much ado—also if carcinoma of the breast passes by metastasis into these nodes they may be removed with the neoplasm and, if so treated early enough, may leave the patient perfectly healthy. However, the metastasis easily goes to mediastinal nodes from the breast, lungs, pleurae, heart, etc., where surgical removal of the affected parts is impractical, if not impossible, hence, the mediastinal nodes seem to take on a new importance. Since there is no way to keep them directly under observation, it behooves us to keep close watch on the part of the lymphatic system that is observable, and after practise on the palpation we find that we can distinguish between different nodal involvements as the experienced physician distinguishes between different toxemias by palpating muscle spasticity.

In the case of differentiating appendix conditions, as above mentioned, we often find complications. Pathologists ask that the physician in the field, in sending a node to the laboratory for biopsy, send some node other than an inguinal gland, because the inguinal glands have more of a chance of having had previous infections from the leg or venereal infection, which has already caused enlargement, proliferation, and perhaps fibrosis. Millard admits that this complicates the diagnosis, and alters the facility with which the examining physician can coordinate his observations. As has been mentioned, these

and other nodes may become the foci for a variety of infections, hence may also furnish a perpetual source of toxin to be fought by the body, as the lymphatic system has complete coverage to the body.

Considering the groups of nodes separately, we see many interesting things. Starting with the ankles, for instance, we may have edema due to a local inflammation of surface, joint, bone, or muscle, or an infection of any of these, or the edema may be the result of a reverse flow from the inguinal nodes, through the popliteals, if the inguinal nodes are inflamed or enlarged from any cause.

The popliteals, it follows, may be enlarged, inflamed, and tender, whether the origin is in the immediate vicinity of the knee or through the ankle nodes or the inguinals. The popliteals have been noticeably affected with no apparent cause more than a bruised or abraded toe, a corn, a skin puncture of the toe or other part of the foot, absorbed dye from stockings, etc.

The inguinals have already been mentioned, but here let me mention two more involvements: lymphogranulomatosis inguinale, a filtrable virus disease of venereal origin, involves the drainage lymph nodes. In the characteristic adenitis the nodes of the chain become fused to form a large mass, then the process breaks down, with multiple fistulae. Elephantiasis is often, in some countries, the result of the occlusion of these superficial and deep inguinal nodes. Enlargement may sometimes be mistaken for hernia.

Millard considers the liver more important, from a lymphatic standpoint, than the spleen. The tendency of the liver to enlarge and become torpid and sluggish makes lymph drainage uncertain. He thinks the lymphatic circulation of sufficient significance that congestion in it is probably as harmful systemically as venous stasis.

The axillary lymphatics are of special importance because of the thoracic and upper extremity pathology that is mirrored in them. Breast carcinoma metastasis to and through them has had mention already. Lumps found in the breast, maybe mistaken for carcinoma, are sometimes, if not just enlarged nodes, benign growths. According to Millard, if the axillary region is comparatively clear of nodules, and there seems to be no particular blocking of the connecting

channels in the region, it is usually safe to say that the lumps found in the breast are not of a malignant type, and may be reduced indirectly by corrective work. As a rule, malignancy of the breast follows axillary warning of some duration. Boyd states, though, that although the primary methods of spread of carcinoma are by lymphatic permeation and lymphatic embolism, a lymph node may contain cancer cells and yet appear normal to the naked eye, and this is, of course a point of great surgical importance. Still, as prophylaxis, breast injuries of traumatic origin should be attended to at once, as the tendency is toward circumscribed induration, with secondary lymphatic complications which may later be associated with malignancy. We are all familiar with the kernels in the axilla after vaccination.

The cervical lymphatic network is a fairly closely anastomosing system so that any inflammation of the pharynx, larynx, oral cavity, skin of the head or neck, sinuses, or trachea or thyroid will cause lymphatic involvement of variable extent. It may involve just one set of nodes or all sets, it may be unilateral or bilateral. Goiter may also cause nodule enlargement. Any blockage that can be detected should be drained, and it is significant that manipulation is the only controllable method of draining the lymph from the congested area. It is significant also that spastic muscles are co-existent with much of the venous stasis and lymphatic blockage we encounter, and that manipulation is one of the most effective methods of relieving spasticity with its edema and hyperesthesia.

Back again to lymph-node focal infection, let me use the information Tice offers: Acute infections of the nose, tonsils, nasopharynx, middle ear or mastoid are frequently accompanied by an invasion of the lymphatics draining those areas. Following the subsidence of the primary infection which is acute, the lymph glandular infection often persists near the port of entry; similar lymphatic involvements and similar persistence of infection may occur in the lymphatic drainage of any region of secondary infection. It is important to bear this in mind, both from the diagnostic and prognostic viewpoints, for large lymph-nodes indicate an infection in the area they drain, and they may persist as foci even after the primary infection has disappeared. (Consider

the added danger in cases of multiple infections, as is the case in repeated colds). The persistence of prevalent involvement is shown in the statistics of Kretz who, in 600 autopsies, examined the cervical glands were infected with the streptococcus and 10% showed infection with other bacteria. Chronic lymphatic infection is apt to produce systemic disturbance whenever the area the lymphatics drain is the seat of acute infection. This explains the common clinical experience of the recurrence of acute systemic manifestations following the radical removal of the primary foci of infection. W. J. Mayo has emphasized the importance of the etiological relation of glandular foci as the cause of tuberculous peritonitis.

We know that in small pox vaccination the regional lymph nodes become enlarged at about the time of the appearance of the vesicle, showing the function of the nodes as a filter of substances in the body that the body doesn't want to handle all at once. It is interesting to note that the lymph glands also are affected in allergy. The enlargement was noted by earlier authors, but von Pirquet and Schick ascribed to it a special importance as one of the most constant symptoms, as well as among the first to appear and among the first to disappear. The enlargement, which is accompanied by pain and tenderness, affects chiefly and sometimes only, the regional nodes, although a general adenitis occurs.

Although we have stressed the infectious angle of lymph-node involvement, we must realize that the nodes are also just as active in filtering or absorbing any other enemy of the body as the infectious agents. The nodes are dangerous when they become the reservoirs for infectious bacteria, but they are real friends-in-need when toxins are at large in the body. In these instances they act as a referee between the body and the toxin, trying to keep the fight on an even basis.

One of the most noticeable systems of lymphatic tissue in the body—noticeable because of our recognition of its disorders—is the pharyngeal lymphoid tissue known as Walderer's ring. Proliferation of this tissue, around the auditory tubes, gives us "adenoids." Retropharyngeal abscess

is usually due to a suppurative lymph gland in that area.

Leri has shown that continued cerebral anemia may produce cavitation, scarring and perivascular softening. This may be seen particularly well in the brains of aged people. The part played by disturbances of lymphatic circulation is more obscure, although edematous infiltrations have been produced by lymphatic blockage.

Microscopic study of the lymph and blood is often a boon to the diagnostician, as he may find increases of lymphocytes, in a differential count, in such conditions as leukopenia, pertussis, and exophthalmic goiter, whereas the number of the cells may decrease in other disorders. The normal percentage among the white cells is about 25-33%, although percentages from 15-45% have been observed in apparently normal persons.

Several manipulative methods of treatment of the lymphatic structures have been used. Millard offers suggestions for treatment of different lymphatic areas, specifically. Among the common treatments are the thoracic, or lymphatic, pump for aiding in the drainage of the mediastinal glands and others in the cervical and thoracic area (some treatment similar to this is the only method of approaching this area), and treatment of the cervicals by massage-like pressure.

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We change our physical batteries while we sleep. He who neglects this important physiological activity will some day find his ignition has failed.—A. C. Johnson, D. O.

DIET IN SINUSITIS AND COLDS

A. B. Crites, D. O., of the College Staff

Millions of years ago man emerged from the animal world and began to live his own life. His faculties, which enabled him to adapt himself more and more to the conditions of his environment helped him to be victorious in the struggle for existence. Later his instinct, together with intelligence and judgment, freed him from his primitive environment and subdued the powers of nature to his needs. Even today we can admire the safety of instincts in primitive people. But as soon as man was able—thanks to his intelligence—to transform nature and his environment by technical means, the regulatory security of his instincts became defective. Not only did man become exposed to danger while deviating from the natural way, but even the animals and plants which he cultivated suffered also. For the wild animal only one natural way of feeding is possible. The question of survival is a quantitative one only. This is different with domestic animals. No wild animal would take artificially changed food as does the dog or the hog. Neither can we observe diseases among the wild animals such as are common among domestic animals. Losing the integrity of the instinct for taking food means, therefore, a constant danger to health.

History points out how much indulgence and over-refinement in eating has contributed to the decline of former civilizations. Today the marked increase in urban population has interrupted the intimate connection between the individual who cultivates and the soil which produces the living food. Methods of living means, first of all, methods of eating. Today we are compelled to buy everything. The free choice of food is replaced by that which the capitalist and industrialist selects for us because of the profit to them. Concentrated foods replace fresh vegetable foods because of the ease of handling. Canned food can never be the same as food in the natural state, nor white flour the same as whole grain. Food authorities state that the American diet contains a large proportion of concentrated foods low in vitamins, residue and alkaline minerals, and high in carbohydrates and acid minerals. Such a diet lacking certain protective foods, such as milk, eggs and fresh leafy vegetables, conduces to the early advent of de-

generative diseases. The frank vitamin deficiency diseases such as scurvy, rickets, pellagra and beriberi are seldom observed in the United States. The term deficiency disease should be used on a larger basis when it may help to explain the secret of lowered resistance.

For the treatment of the empyema of a sinus caused by obstruction or for the treatment of the twice yearly cold a special study of diet is not necessary. But for the frequent or persistent cold, the edematous or hyperesthetic nose, the sinusitis that resists surgical and other local measures a special study of the causes of the lowered resistance leads to a study of hygiene and diet to accomplish best results. And now, at a time when the beauty parlor, barber shop, and well-meaning friend are all giving dietary instructions; when the food faddists, extremists and raw food advocates are running rampant it well behooves the alert physician to have facts and a rational program at his disposal.

The modern treatment which deprives patients with high blood pressure and kidney diseases of table salt is proof that man can get along without it. There are certain races and tribes of people who eat no salt at all. No one was ever harmed by taking too little or no salt, but an army of sick people live among us, who show the consequences of eating too much. The therapeutic effects of salt restrictions are tremendous. It reduces inflammations, swellings and edema, whether limited to an organ or generalized. Through its dehydrating effect, 1 gm. of salt holds 70 gm. of water in the tissues, thus counteracting the tendency toward suppuration and exudation. The beneficial effects of calcium become evident with salt restriction and the kidneys are better able to eliminate such metabolic substances as indican, uric acid and the ketone bodies.

Calcium has occupied an important place on the dietary stage for some time. Besides playing an important part in the growth of bones, it offsets the tendency toward inflammatory diseases. A few years ago it was thought that calcium was the key to the solution of the problem of hyperesthetic rhinitis, hay fever and allied conditions. The extra calcium given probably was not utilized be-

cause sodium has the stronger affinity for the tissues, particularly of the skin and mucous membrane, so with sodium available calcium is not taken by the cell. If a diet rich in calcium minerals is given it is usually not necessary to give extra calcium, though there is no objection to so doing.

A major portion of the diet should consist of foods that have a basic ash residue. The definite advantages are well established. A simple classification of foods lists as acid the following: cereals, meat, fish, eggs, coffee and tea. Neutral foods are vegetable oils, butter, sugar and tapioca. The basic or alkaline foods are vegetables, fruits, milk, potatoes and nuts.

As instructions to the patient with troublesome mucous membrane disorder the diet includes the following general principles. First. Use fresh foods whenever possible. Canned fruit and vegetables are much better than none, but each time food is heated some of the vitamin content is lost and the acidity is increased. Dated foods seem much more logical than dated coffee. The water in which vegetables are cooked contains the vital mineral elements and must be served. Second. Restrict salt. Sufficient salt is obtained for the body's needs from natural food. The additional salt added to food in the kitchen and at the table floods the body with the acid forming chlorine element, while the excess of sodium replaces the beneficial and much needed calcium. This salt poor diet feature is very important, wean yourself away from the salt habit by using Curtasal if necessary. Third. Give preference to alkaline foods. The white potato is an excellent food baked or boiled in the skin. Fourth. Reduce animal proteins. Some is needed to replace broken down cells but an excess tends to acidosis. Fifth. Reduce the amount of carbohydrates using the unrefined products whenever possible. Sixth. Eat small and frequent meals. Starvation produces acidosis. Just going too long without food may cause headache, the so-called shopper's headache, fatigue and even bad breath from the excess acid in the stomach. Don't take alkalis. Eat some fruit or take a glass of milk at four in the afternoon and again at bed-time.

Forbidden foods are canned foods if fresh is obtainable, table salt, salted butter, alcohol, smoked fish and meats, bacon, ham, sausage and sardines. Pickles, catsup, bottled sauces, salted

almonds, crackers and hot biscuits should be avoided. Foods permitted in limited amounts are, meats, twenty-four ounces weekly, one egg daily, one ounce of sugar daily and preferably unrefined, coffee or tea one weak cup daily and potatoes one with each main meal but not fried. Favored foods are one quart fresh milk daily with one-half pint of cream. Buttermilk, cottage and Philadelphia cream cheese may be used freely. Eat vegetables, salads and fruits both fresh and dried. Make full use of all the spices and herbs except pepper, paprika and mustard.

Before prescribing the diet, urinalysis of the twenty-four hour specimen is made. Besides the routine tests the urinary acidity is determined and what is most important, the amount of sodium chloride eliminated in twenty-four hours is estimated. The normal is ten grams, but many specimens will double this figure. After the diet is followed for a week or two the amount of sodium chloride eliminated drops to between three and five grams and is kept there. This urinary test, easiest done by the centrifuge method, determines what cases are most in need of the dietary restrictions. From these cases is expected the greatest clinical improvement. It also is a check up on the patient for if much sodium chloride is still being eliminated, then the intake is still high and the diet is not being followed.

The results obtained from the diet have been highly satisfactory, though rather difficult to definitely evaluate in private practice because of other therapeutic measures in use at the same time. It is highly gratifying to find the general resistance to colds increased, breathing comfort obtained, edematosis lessened even in patients with an allergic diathesis and to find that the systemic disorder, neuritis, neuralgia or what not improves even before the focal infection in the nasopharynx and sinuses is entirely eradicated.

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Osteopathy is optimistic, enthusiastically so; medicine is nihilistic, to the degree of pessimism.

Some people are like the cells in a cancer, laudably ambitious but dangerously and uncontrollably unwise.—A. C. Johnson, D. O.

CLINICAL SIGNIFICANCE OF THE BASAL METABOLIC TEST

G. N. Gillum, D. O., Director of Clinics

The basal metabolic test has come to occupy an increasingly important place in scientific medicine. Through its use the clinician can gain valuable information regarding the rate of the metabolic processes and apply that in the diagnosis of a number of diseases. Like other tests it requires clinical interpretation, otherwise erroneous conclusions can be drawn and one be led far afield, diagnostically and therapeutically. A consideration of the test from the clinician's viewpoint will form the basis, primarily, of this paper.

With thousands of metabolism testers in use throughout the country it is somewhat startling to realize that the first apparatus was installed only in 1911 in Bellevue Hospital. Shortly thereafter units were installed in Russell Sage Institute of Pathology, and Cornell Medical College. Among the pioneers in the development of the apparatus as well as in its clinical applications were Pettenkofer, Voit, Magnus-Levy, Benedict, Lusk, Grafe, Rolly, Boothby. We owe these men, as well as a great many other co-workers a debt of gratitude in the study of disease associated or characterized by an altered metabolic rate.

When is a Metabolic Test Indicated

This cannot be categorically stated. However, one should consider the advisability of the test whenever a patient is nervous, obese, has recently gained weight rapidly, or shows a marked change in facial lineament characteristic of that person. Constantly one is surprised by marked alteration in the metabolic rate when least suspected. Even though the test should prove negative, it will inspire confidence in the doctor as to his thoroughness, reassure the patient, and may allay any apprehensions that are aggravating his condition, and thus act as a psycho-therapeutic measure of great potency.

The Low Metabolic Rate

While the normal range of metabolism is generally considered to be from -10 to +10, slight variations from this are not to be viewed too seriously. A very common concept is when the rate is low to immediately implicate the thyroid. This conclusion is based upon the well known physiologic fact that thyroxine acts in the tissues as a catalyst and is a regulator of the rate energy transformation. It is to be remembered here, however, that only about 40 per cent of heat production is controlled by the thyroid gland. Even when the thyroid gland is totally destroyed the metabolic rate

drops to no more than -40 to -45 per cent.

It is clear therefore that there are factors operating in maintaining the body's metabolism other than the thyroid gland. The question then immediately presents itself as to whether the depression of the rate need be attributed to the thyroid. This question cannot be positively answered, but the evidence warrants the conclusion that gland is not involved primarily, at least in all conditions with a metabolic rate below the clinically accepted normal.

In support of this view we have the clinical results of thyroid medication. In myxedema and cretinism for example, thyroid extract brings about a rapid and remarkable change physically and mentally which is maintained with continued thyroid medication. On the other hand, patients with very low metabolic rates but without the physical and mental characteristics of thyroid states require very much larger doses of thyroid extract to raise the metabolic rate to normal and does not lead to any apparent physical or mental change.

It is very important to consider these facts in examination and treatment of any patient with a low metabolic rate, and not to immediately implicate the thyroid gland, and thus lead to unscientific medication. It is impossible to categorically classify various states of low energy production, and any brief working formula outline necessitates leaving out less important or poorly understood conditions. We will discuss, therefore, the more clinically important diseases.

Before considering specific conditions let us consider words of warning as to the metabolic test and its dependability in diagnosis. Dubois' states: "Even in the best hands there is a possible error of 2 or 3 per cent. In addition to this there are rather wide fluctuations in the daily metabolism of certain individuals. The first few tests with a thyroid patient may

be 10 or 20 per cent too high. Some normal individuals consistently show rates 10 to 15 per cent or even more above or below normal. The chances are that these various sources of error will partially neutralize each other, but if they all happen to fall in the same direction the result will be far off from the truth.

"In every disease there is a tendency to variation from the typical which occurs in certain individuals and there are few hard and fast rules in diagnosis. It is very seldom that we should allow any single symptom or laboratory test to outweigh a mass of evidence. A slavish adherence to the basal metabolism test as an index of diagnosis may lead the physician to trouble, first because the test does not always give the true basal metabolism, and second because even the true basal metabolism is not always the indication of the correct diagnosis. God forbid that we make our diagnoses by machinery!"

Range of Metabolic Rates in Unquestioned Hypothyroidism

Plummer⁴ made a detailed study of a great many patients with hypothyroidism, but with varying etiologic factors. I will read a summary of his findings:

	Basal Metabolism Per Cent	Patients
Myxedema, severe, idiopathic	-25 to -42	51
Cretinism, congenital or infantile	-22 to -35	18
Thyroiditis (no operation)	-12 to -32	3
Tuberculosis (no operation)	-22	1
Post-thyroidectomy, exophthalmic goiter	-15 to -35	17
Post-thyroidectomy, adenomatous goiter	-15 to -36	10
Post-thyroidectomy, thyroiditis	-22 to -38	3
Post-thyroidectomy, carcinoma	-16	12

Low Metabolic Rate of Hypothyroidism

MYXEDEMA: This hypothyroid state is the commonest condition arising from marked deficient secretion of thyroxine. It is due to disease, removal of the gland, diminished nerve

and blood supply or a combination of these factors.

In the typical case there is a thick puffy appearance of the skin, especially of the hands and face, with pallor, dryness, roughness, and brittle, dry and falling hair. There is usually a gain in weight, apathy, lethargy, and dull mentality. While there is an edema-like appearance of the face, the tissues do not pit on pressure. Boothby⁵ considers the thickening of the subcutaneous tissues as being due to a semi-fluid substance comprising more than 13 per cent protein, and not mucin as is frequently stated. The metabolic rate varies from -20 to -40 or more.

While the above description is that of the typical case, it is to be remembered that some do not gain weight and may be of the thin type. These are in most instances the mild hypothyroid states.

CRETINISM: This endocrine disorder is the counterpart of myxedema, but occurs in infancy or childhood and its symptomatology is conditioned by the physical and mental growth periods of that age. Among the characteristic findings are coarse thick lips, enlarged, protruded tongue, arrested skeletal and general body development, mental deficiency or idiocy, scanty hair, and very late closing of the fontanelles. The metabolic rate is -20 to -40 or more. The disease is far more common in endemic goiterous regions, but occurs sporadically throughout the world.

Thyroid Extract in the Treatment of Hypothyroidism

It would be clinically barren to discuss the above diseases and not to discuss thyroid medication in these disorders.

Sometimes thyroid extract is given without a metabolic test, the necessity for, or the effect of the extract being judged by the clinical symptoms and the pulse rate. This procedure is to be condemned as being too empirical. Whenever possible it is advisable to judge the necessity for and the effects of the extract by both the symptoms and metabolic rate.

The action of desiccated thyroid⁷ is slow and is somewhat cumulative, and its disappearance from the body requires a considerable period. Because of these facts it is not necessary to give the extract in divided doses daily, but the dosage for the day given at one time. It has been found that upon the discontinuance of thyroid medication in hypothyroid states that the daily

loss of thyroxine is about 6.5 per cent of the amount present in the body. The loss is more rapid in the first two weeks and the thyroxine administered is completely gone at the end of a month. Therefore, to obtain the activity of the thyroid as determined by the metabolic test, one month should have elapsed since maintenance dosage. This statement should not be interpreted to mean that metabolic tests are not to be performed regularly in hypothyroid cases under treatment.

Berkman of the Mayo Clinic advises: "As in the absence of Nephritis and cardio-vascular, an initial dose of 12 grains over a period of three or four days may be used, the dose being the same each day." Then a metabolic test should be performed, when it will be found in most cases the rate will be within the normal range. It is best that a grain or more of thyroid be given daily and tests performed every four or five days, the dose being increased or decreased depending upon the metabolic level. Reading of -3 to -5 is more desirable than a zero reading. Basal metabolic tests should be performed every few months to determine if dosages is a maintenance one.

The above outline of treatment follows the more acceptable standards. Too often because of the time element and the financial status of the patient, the clinical method of general improvement, signs of nervous or accelerated pulse rate must be relied upon.

Low Metabolic Rate Without Primary Hypothyroidism

DEPRESSED PHYSICAL OR MENTAL STATES: One encounters a variety of patients that can scarcely be classified as having some particular disease, but who are asthenic and have a multitude of symptoms of a functional nature. They belong to the "low energy" group and are more or less in a state of varying exhaustion, but without a demonstrable organic basis. There may be a depressed mental state.

It is not implied by the foregoing statements that a majority of "low energy" patients have a low metabolism. In fact, it is only the occasional one who has a definitely decreased metabolic rate.

In our present state of knowledge, one cannot be dogmatic as to the cause or causes of the altered metabolism. Is it pluriglandular, developmental, nutritional, psychic or one among a

multitude of other possible factors? To assume a thyroid status is to rest the evidence upon a slender hypothesis.

I will illustrate this group by the brief history of a patient with a continuously low metabolic rate of -25 for a year without evidence of myxedema or gain in weight. The patient, a male, age fifty, with negative urinalysis and blood studies and with no obvious organic, physical or psychic shock, to account for his condition. There was, however, the low energy syndrome, considerable loss of potential, worry, depression, marked indecision, and some emotional disturbances. He had had spinal manipulation and tonus all without benefit. About six months after the discontinuance of all treatment, he regained in the main his usual health.

MENSTRUAL DISTURBANCES: Sometimes, menorrhagia, amenorrhea, and oligomenorrhea is accompanied by a low basal metabolic rate. It is very doubtful if most of these low reading cases are truly hypothyroids. Haines⁸ and Mussey found that 73 per cent of cases of menorrhagia, 72 per cent of those with amenorrhea and 55 per cent of those with oligomenorrhea, improved on thyroid. Furthermore, 75 per cent of the entire group reported considerable improvement in their general health, and that their metabolic rate rose to normal. Their findings vary from general clinical experience with such cases and serves to render one cautious or not over-enthusiastic for thyroid extract in menstrual disturbances.

OBESITY: When a patient is seen that is obese, many physicians think of underactivity of the thyroid as the principal cause. Sevringhaus⁹ states: "Although this is not a common cause of obesity, it is important that the clinician look for the characteristic diagnostic signs of skin, pulse, reflex, mental and menstrual phenomena and that he confirm the diagnostic decision by estimations of basal metabolism." It is to be borne in mind that the altered metabolism is the exception rather than the rule. Short¹⁰ and Johnson too, have shown that obese people have an essentially normal metabolism. Their conclusions were:

"1. The total metabolism in obesity increases directly with the weight.

"2. The basal metabolism in obesity is usually within normal limits, but tends to be in the lower ranges of normal for the slightly obese and

in the higher ranges for the excessively obese.

"3. The increased metabolism favors rapid weight loss on dietary restriction.

"4. The employment of metabolic stimulants while normal basal and high metabolic rates prevail is illogical and contraindicated."

From the foregoing statements, we can conclude that obesity is not usually accompanied by a low metabolic reading, and that the use of desiccated thyroid, even in reducing has little or no scientific evidence to support it.

ANOREXIA NERVOSA: This is a somewhat rare disorder with a psychic background. Usually the condition follows some great emotional strain or poor mal-adjustment to life. The psychic disturbance leads to loss of appetite and consequent starvation and great emaciation. The metabolic rate becomes lower, which still further depresses the appetite. A vicious circle is thus set up. Psycho-therapy, adequate intake of food and sometimes desiccated thyroid to increase the metabolism, and as a consequence the appetite, often leads to improvement or recovery.

HYPOPITUITARISM: It is generally considered that disorders of the pituitary in most instances lead to obesity, though this is still a debated question. The most typical example is the Froehlich Syndrome, though some other types of hypopituitarism are characterized by slenderness. Sevringhaus¹¹ has this to say in the discussion of obesity sometimes associated with encephalitis and diabetes insipidus: "As a consequence of these considerations, it is increasingly probable that obesity is not a pituitary problem but a condition due to lesions or disturbances of some center in the hypothalamus. One then must consider two points of view, both with competent advocates."

High Metabolic Rates

This usually indicates hyperthyroidism, though by no means in all cases. Yater¹² states: "It follows that although the basal metabolic rate is increased in hyperthyroidism, an elevated basal metabolic rate alone does not prove the presence of hyperthyroidism, nor does it necessarily incriminate the thyroid gland. Aside from hyperthyroidism, the basal metabolic rate may be increased in (1) nervous individuals, (2) hypertension, (3) fever, (4) congestive heart failure with dyspnea, (5) patients with rapid-

ly growing cancers, (6) leukemia, pernicious anemia, polycythemia vera, (7) scleroderma, (8) hyperfunctioning medullary tumors of the adrenals (9) acromegaly, and (10) chronic encephalitis with Parkinson's diseases." Exophthalmic goiter or primary hyperthyroidism however accounts for most cases of continuously increased metabolism, though adenomatous goiter with hyperthyroidism is responsible for elevated metabolic rates. Grave's disease, however, serves our purpose here and we shall confine our discussion to it.

Well developed cases are usually easily diagnosed. There is the tremor, tachycardia, high pulse pressure, sweating, intolerance of heat, loss of weight, and exophthalmos. Some think always of the old triad of symptoms, tremor, tachycardia and exophthalmos. Another dictum is that a pulse constantly above ninety usually means thyrotoxicosis. As a rule there is an enlarged thyroid with bruits over the superior poles. There are of course a multitude of minor signs including those characteristic of the eyes but they are of limited significance.

The metabolic rate is a major finding. It is almost always elevated and usually above +20 per cent. It is common to find readings of +40 to +60 or higher. When repeated tests reveal such a constantly elevated rate and clinical signs are present, little doubt remains as to the disease. This is further substantiated if Lugols solution decreases the pulse and nervousness.

Patients suffering from effort syndrome and similar exhaustion states often very closely simulate hyperthyroidism. The basal metabolism is usually repeatedly normal, though there is tremor, sweating of the hands and rapid pulse. The pulse often decreases in rapidity when the patient is at rest. Often there is a history of frustration or some psychic shock.

It is hoped this discussion of the clinical significance of low and high metabolic rates and diseases in which these varying metabolic levels occur will serve to stimulate interest in a more extensive use of this test, point out some of the pitfalls, and increase one's diagnostic and therapeutic awareness in such disorders.

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YE EDITOR IN THE YEAR 1922

Our student body this year looks like a million dollars to us. When it is considered that the Kansas City College of Osteopathy and Surgery started only six years ago "on a shoestring," so to speak; that it was founded upon an absolutely non-profit basis and hence had no attraction to any who might have been investors; that its only and greatest assets were an enthusiastic vision and determination to convert the vision into reality; its progress has been marvelous.

It now owns real estate which at a conservative estimate is worth around \$45,000.00. Since the opening of this session, one piece of this real estate has been fully cleared and the other is in shape that all indebtedness will be readily met in a short time. The college has equipment commensurate with the student body. This is being gradually and carefully augmented from time to time as occasion demands. A faithful faculty membership of more than a score of experienced instructors has a value to the institution that cannot be measured in dollars and cents. They perform none the less well because their reward, instead of cash, is the satisfaction of a duty to their profession and their calling, earnestly and efficiently performed.

We say the student body looks like a million dollars. That sum could not take their place. In numbers there is strength so we feel stronger than ever before. We have, if possible, greater enthusiasm—more vim—added spur to greater endeavor to

put over our ideal and realize the fulfillment of our six year vision, making the reality greater and better and fuller than the vision itself ever dared be. Amen.

Starting a college without any money backing is quite an undertaking. So, among the many things calling for serious consideration in years past, has been the matter of finances. This year, the clouds of worry in this regard have commenced to drift aside and the institution is in sound financial condition. This has been accomplished by reasonably strict adherence to business principles. Business transactions may be of several kinds. Cold, matter-of-fact business has no sentiment in its makeup. Its ultimate goal is profit and then more profit. When sentiment controls business transactions, the result is a total breakdown of the business. Fortunate is he who can conduct his affairs upon business principles and yet permit a measurable amount of sentiment to enter into the transaction. Sentiment pertains to love. Love is life. Business devoid of love is reprehensible.

Our college was borne of love. Its aspiration was an ideal. Its ultimate purpose was the realization of the ideal. So, while we endeavored to control and conduct the affairs of the school upon business principles, sentiment has been allowed a reasonable measure of sway. Students have been assisted upon their journey to graduation. Tuition costs have been reduced. Extras have been kept out of the stu-

dent expense accounts, and we have prospered and are growing and are still building toward the ideal—a great osteopathic training institution where the trainees will be taught at cost. Watch the program unfold, the ideal develop, the ultimate resulting triumph.

Mr. T. H. Johnson, father of Dr. Mamie E. Johnson, has been in charge of alterations about the college property during the past six months.

We have finished scanning the reports of the Departments and Bureaus for the year 1921-1922 issued by the American Osteopathic Association. We intend to read it carefully and thoughtfully. Every member of the profession ought to be in the A. O. A. The Journal and the annual report are worth the yearly fees; leaving out of consideration the actual good that can be secured only through organization activities. Join the A. O. A.

President George J. Conley, of the Board, and President Hanna Leinbach, of the faculty, have personally offered prizes to the student supplying the most distinctive college yells. Well, a college wouldn't be a college without yells and songs and things, would it?

More than a thousand dollars is being expended on the purchase of additional glassware and other small equipment for the laboratories. The laboratories have been enlarged and many changes for the betterment are in progress. As completed, the laboratory will be flooded with light; there will be a maximum of ventilation; the increased equipment will supply every need for complete class work. As rapidly as possible, individual lockers are to be supplied to all laboratory classes. Before all is completed, more than \$3,000.00 will have been expended in this department alone. Opera chairs were recently received which will be used to equip a classroom for the incoming January class.

Years ago general practitioners made much ado about the visualization of the tongue as a key to diagnosis. Then along came the era of machine diagnosis, wherein the special senses, sight, smell, touch and hearing were relegated to the background or practically forgotten as diagnostic adjuncts. It is heartening to note that

there are signs of a revival in the use of such agencies, e.g.

Russell L. Haden, M.D. in a Diagnostic Medical Clinic under the caption of "Nutritional Deficiency Diseases" given before the Interstate Post-Graduate Medical Assembly of North America (St. Louis meeting, Oct. 18-22, 1937) says, "Whenever one sees a beefy, red, painful tongue, pellagra should come in mind." Again, "I have yet to see a patient with pernicious anemia with a coated tongue."

Some indications of systemic conditions as revealed by inspection of the tongue are reproduced from the Eclectic Practice of Medicine, Scudder, 14th Edition 1893.

1st. The elongated and pointed tongue, with reddened tip and edges, indicates irritation of the stomach.

2nd. The heavily furred tongue at base, indicates morbid accumulations in the stomach.

3rd. The tongue uniformly coated with a yellowish fur, indicates torpor of the intestinal canal.

4th. The pallid tongue and mucous membranes, with white, pasty-fur, indicates acidity of the blood and demands a salt or soda.

5th. The deep-red color of tongue or mucous membrane, indicates alkalinity, and demands the employment of acids.

6th. The dirty fur, as well as the brown fur, and the clean, slick tongue, indicates deterioration of the blood.

7th. The white coat indicates an inflammatory or sthenic condition.

A CORRECTION

In the article in the August number entitled "A Textbook On General Surgery, A Review," an error was made in ascribing the book to the Saunders Publishing Company, whereas it is a production of D. Appleton-Century Company, Incorporated, 35 West 32nd Street, New York, New York.

The College Journal regrets the occurrence of this error and trusts this explanation rectifies it.

RIGHT INGUINAL PAIN

George J. Conley, D. O., Professor of Surgery of the College Staff

"The initial, acute pain (of acute appendicitis) indicating obstruction, gangrene, or perforation is felt in and especially a little above and around the umbilicus; at a later stage, and only in a later stage, are the signs and symptoms localized in the right iliac fossa. So true is this that it may be accepted as very probable that when an attack of pain is first felt in this fossa the cause is not to be found in disease of the appendix." (Addresses on Surgical Subjects, Moynihan. Page 257).

Probably the majority of physicians of all schools, certainly far too many, are prone to accept the presence of pain in the right inguinal area as being of appendiceal origin and render a diagnosis accordingly. The laity have been educated to a point where they are appendiceal conscious when a pain is experienced in this area but are generally in utter ignorance with respect to the significance and danger of a general abdominal pain centering around the navel. They may heed the warning of the first but are entirely oblivious of the dangers of the second. As this paper is intended primarily for professional perusal it is my intention to stress the difference pathologically in the origin of such pains.

Acute appendicitis, rarely if ever, begins with pain in the right inguinal area. Should the patient present such a history with a diagnosis of acute appendicitis, the clinician should question carefully the accuracy of such a conclusion. Many, many times patients are sent or brought to the surgeon by the family physician with a diagnosis of acute appendicitis based upon a right inguinal pain and immediate operation advised, wherein the appendix was an innocent bystander insofar as causation of symptoms was concerned and its removal would have had no influence upon the pain at all. These cases almost invariably are ushered in with pain in the right side roughly corresponding to the location of the appendix. Such cases, with an unequivocal diagnosis of acute appendicitis with immediate surgical interference urged and accepted by the patient as the only avenue for relief, often puts the surgeon in an embarrassing position and may prove to be humiliating to the refer-

ring doctor should the causative pathology be located elsewhere and proves to be non-surgical in nature.

By questioning the possibility of acute appendicitis being responsible for primary, right-sided, inguinal pain and considering other factors which may enter into the picture and illuminate the findings, much confusion can be avoided. To be safe accept the dictum that acute appendicitis rarely (at least) begins with pain in the right side. To what then can these painful manifestations be charged?

Right Inguinal Pain may be a manifestation of a lumbo-sacro-iliac lesion; it may be due to the presence of varicocities in the ovarian veins on the right or even left sides; it may be caused by a torsion of a cystic ovary or a hydrosalpinx; it may be caused by showers of urinary crystals; by stricture of the ureter; by spasmodic contractions of the ureter due to lesions particularly of the right innominate; by ureteritis; by partial occlusion of the ureteral orifice by stone or valve; or by some anomaly of the appendix giving rise to a non-infectious appendiceal colic. As osteopathic physicians our first interest should be the possibility of the presence of an osteopathic lesion capable of exercising such an influence. The integrity of the lumbo-sacro-iliac areas should be carefully questioned and ever held in mind. A lumbo-sacral lesion usually manifests pain in both inguinal areas whereas an innominate lesion very generally causes pain only on the lesioned side. The presence of such a lesion is very easily and quickly differentiated by the use of the steel tapeline, measuring from the suprasternal notch to the lower margins of the anterior superior spines of the innominates with the patient in the relaxed dorsal position (critics to the contrary notwithstanding). I will check this method against the x-ray any time. It can be checked further by vaginal or rectal palpation of the anterior surfaces of the sacro-iliac articulations and, in special subjects, the lumbo-sacral area may be approached approximately, at least near enough to demonstrate the hyper-irritability of said area.

With the patient on the left side, knees flexed at right angles to the body, with belly musculature relaxed

and with the small intestines gravitating to the left side, physician standing behind the patient, deep palpation of the appendiceal area may be effected. It is a good plan to watch the patient's face in such an examination to detect any reflexes manifesting in the facial expression. Rectus muscle reflexes can be detected by the examining fingers. As a rule such an examination will be negative provided the lesions of the lumbo-sacro-iliac area are causative. One must remember that very deep pressure in thin, relaxed subjects will allow one to make pressure on the anterior aspect of the right sacro-iliac articulation which will give evidence to pain. But that pain is not a soft tissue or appendiceal pain.

If the physician will next grasp the tissues of the crest of the ilium with the thumb behind and the fingers in front and make firm pressure, pain and muscular contractions will be elicited indicating that the pain is sacro-iliac or lumbo-sacro-iliac in origin. Tenderness at the origin and insertion of Poupart's Ligament will also be evidenced. These facts can be quickly and easily ascertained at the bedside and will be of great assistance in the solution of the problem of the right inguinal pain.

These lesions can cause spasmodic contractions of the ureter giving rise to a severe renal colic. In fact the worst case of renal colic I ever encountered was due to a twist of the left innominate on the sacrum. This case had baffled the best urologists in Kansas City and had had the advantage of consultation with the best on the Pacific Coast. Several similar cases have come under my observation.

Varicocities in the right broad ligament area may be difficult even impossible to palpate. Sometimes in favorable cases they may be palpated. They may be postulated, however, as they are most frequently associated with and caused by retro-displacements of the uterus. There is little said about such conditions in our works on gynecology but they are very frequent and are as disastrous as a nervous irritant as are the varicoceles of the male. The pain is dull, aching in character and manifests most frequently at or near McBurney's point when on the right side.

Torsion of a cystic ovary or of a hydrosalpinx likewise may cause inguinal pain. There is absence of

fever, leucocytosis and the examining finger may localize a mass in the right broad ligament area. In addition symptoms of a reflex ileus may and generally will be present.

Showers of urinary crystals may cause pain varying in degree from intermittent soreness to acute lancinating pains resembling renal colic with the maximum of intensity manifesting in the right inguinal area. Such pains may be associated with a sense of nausea even to vomiting. A case of this kind coming to the hospital under a diagnosis of acute appendicitis (which is very common) and subjected to an appendectomy with the assurance that the symptoms would be alleviated permanently by so doing would prove most embarrassing to the surgeon should the pains recur within 48 hours or less with unchanged vigor. The urinalysis plus the fist percussion of the kidney (Murphy) will clear up the diagnosis.

Stricture of the ureter arising from spasmodic contractions of its musculature, due to nerve irritation caused by a sacro-iliac lesion on the right side (in right inguinal pains) may prove to be most perplexing to the clinician. The symptoms may be typical of a severe renal colic, in superlative cases suggestive of stone, or they may be minimal to the extent of an aching soreness most prominent in the region of McBurney's Point. They will be variable as to time of appearance, length of duration and in severity of manifestation.

Fluoroscopic visualization of the ureter under the indirect kidney dye method during the attack oftentimes yields most valuable information. Ureteral catheterization to be of value would have to be accomplished during the attack. Interval observations would be negative. Diagnosis by the process of elimination and correction of any and all such lesions will reveal the pathology.

Organic stricture would present a more severe form of symptoms, persistent in type and would be accompanied with dilatation of the ureter above the stricture, of the pelvis of the kidney and an enlarged kidney due to hydronephrosis. The pain would not be confined to the inguinal area although a sense of soreness would persist therein. Ureteral catheterization plus the x-ray findings would reveal the pathology.

I might say here that the majority of the osteopathic physicians do not

realize the magnitude of the effects of the lesions of the lumbo-sacro-iliac area, neither are they aware of the diversity of derangements arising from or affected by these very common lesions. Their sphere of influence ranges from the occiput to the distal extremity of the great toe and no structure between these extreme limits is immune to its derangements.

Appendiceal soreness even to severe colic due to some anomaly of the appendix, congenital or acquired, is a most common cause of right inguinal pain. This disturbance may be of a severe, colicky nature, at or near McBurney's point, followed by nausea or vomiting or it may assume the form of a persistent soreness centering at or near the site of the appendix. In either type fever and leucocytosis are absent. The x-ray usually fails to visualize the appendix; it being concealed behind the cecum and held there by adhesions. Under fluoroscopic visualization direct pressure over the cecum will elicit pain. After a variable period of time when the cecum is clear of the opaque media, the filled appendix may be seen. These anomalies affecting the appendix may consist of intimate adhesions binding the appendix closely to the posterior aspect of the cecum even to the degree of invaginating it in the cecal wall, or there may be kinks or twists caused by mal-attachments of its mesenterium; or the distal end may be attached by adhesion to some other structure such as the ovary, tube, uterus or the liver. Under such circumstances a cecum overloaded or distended with gas would make traction upon it giving rise to an appendiceal colic or pain.

An appendix that fails to visualize under the x-ray may be considered as a surgical lesion. It is like any other male factor that works under the cover of darkness. At best it should be considered a suspicious structure.

Physical examination will reveal pain over the appendiceal area. With the patient lying on the left side with knees flexed, the intestines naturally fall away to the left or lower side, leaving the cecum fairly well uncovered. Deep, gentle palpation will reveal soft tissue soreness in that area. It must be remembered that in very thin patients the fingers may make pressure on the anterior aspect of the right sacro-iliac articulation which, in lesioned subjects, will result in pain. Of course an ap-

pendiceal anomaly can coexist with a lumbo-sacro-iliac lesion wherein differentiation might be impossible. In such an event reduction of the lesion should be the first step in determining the causative pathology. If the pain persists after correction of the lesion then an appendiceal anomaly may be postulated. Always one must remember that acute appendicitis rarely, if ever, begins with pain in the right side. If such is the history of the case eliminate every other possibility before saddling the appendix with the odium of an acute manifestation. Measure it with the diagnostic yardstick of the acute abdomen, the Murphy sequence of symptoms, viz: general belly pain centering around the umbilicus, nausea or vomiting, localization of the pain (usually at McBurney's Point), fever and leucocytosis. By so doing your percentage of error will be very, very low.

**Kansas City College
of Osteopathy and
Surgery**



*The
"Aggressive College"*

STATEMENT

Kansas City College of Osteopathy and Surgery

Fiscal Year Ending May 31, 1939

Receipts:

Books	\$ 925.70
Clinic	10,826.18
Donation	1,205.57
Laboratory Fees	2,111.97
Library Fees	4.13
Locker Fees	42.50
Notary Fees	53.75
Publishing Acct.	142.40
Treating Gowns	10.42
Tuition	34,072.16
X-Ray	691.35
Hospital Fees	23,457.54

\$73,543.67

Expenditures:

Advertising	\$ 4,386.42
General Expense	2,121.52
Grad. Expense	170.07
Drugs and Dressings.....	901.14
Taxes	18.50
Insurance	304.65
Interest and Discount.....	2,367.64
Expense, Realty	767.79
Jan. Water, Heat, Light.....	2,561.06
Off. Exp. and Salary.....	39,128.41
Student Health	202.23
Kitchen Supplies	3,331.16
Laundry	1,836.46
Hospital Supplies	3,091.62

61,188.67

Surplus:

\$12,355.00

ASSETS AND LIABILITIES

Assets:

Accounts Receivable	\$ 8,591.45
Cash	8,164.15
Deposits	200.00
Furniture and Fixtures—College.....	25,551.08
Hospital.....	12,230.88
Library	186.35
Real Estate—College.....	72,067.78
Hospital.....	51,834.09

Liabilities:

Activity Fund	2,378.82
Loans	3,790.00
Mortgage	15,000.00

Surplus:

157,656.96

\$178,825.78 \$178,825.78

THE A. O. A. MEMBERSHIP CAMPAIGN 1939-1940

The Secretary of the State Board of Osteopathic Examiners of a nearby state was hurrying to an osteopathic hospital with a patient groaning with pain which only a surgical operation could relieve. He was stopped by an officer of the State Highway Patrol for speeding. When the cause of the excessive speed was ascertained the officer remarked, "Why don't you use a registered emblem?" Implying an emblem of this type would provide for special right of way on the highways similar to that granted ambulances, police cars, etc., when need demanded.

Our President-Elect, Dr. F. A. Gordon, with Doctors Klein and Owen was held up and delayed by officers of the Missouri Highway Patrol over near Excelsior Springs, Mo., while enroute to the Dallas Convention. They had no emblem on the car, hence had to identify themselves. A registered emblem would have given them a clear right of way.

Here is a practical idea that can be utilized in every state maintaining a Highway Patrol. Not only is it a good publicity stunt but it acts as an insurance against molestation for minor, justified infractions of the traffic rules. It is also a means of ready identification should an osteopathic physician be stopped for any cause by the Patrol.

With the registration of the emblem of the American Osteopathic Association at the office of the State Highway Patrol membership therein automatically takes on an added practical value of no small import. It becomes a ready means of identification of the occupants of the car as well as a guarantee that cars bearing such emblems will be treated with a dignified degree of courtesy and consideration when traveling the highways of the state. It brings the osteopathic systems of therapy officially to the attention of an important department of the government of the state.

It would be an additional incentive for non-members to become active in organization affairs by renewing lapsed memberships as well as those who never had recognized their responsibilities to the National organization in any way.

The A. O. A. emblem on their cars on the highway would mean something inherently tangible and of value. It would automatically carry with it a sense of security. It would be as a letter of introduction to the officers of the law. In other states the mere mention to traffic officials that the emblem was registered in your native state and given respectful consideration by its highway patrol, would exercise a favorable influence. Finally it costs only the effort to make the contact and establish the relationship officially.

When a non-member gets in a jam with the law his first thought is the Central Organization. Post haste or by wire he calls on it. Any practitioner of the healing art may unintentionally run afoul the law. In such an event he may need all the assistance that he can obtain to clear himself. Organized osteopathy behind him is the strongest factor he can command. Incidentally it is his first thought in such time of trouble.

"In time of peace prepare for war" is an old aphroism. Therefore prepare for trouble by becoming members of the National organization and, having done so, maintain the contact much as you would a sacred obligation.—G. J. C.