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Genito-Urinary Tuberculosis

G. A. WINFIELD, B.Sc., M.D.C.M.

THE subject of Genito Urinary Tuberculosis is such a vast one that to attempt even a brief outline in so short a time seems a formidable task. Countless articles have been written concerning the condition, and in reading them one is almost forced to the conclusion that so far as methods of diagnosis and cure are concerned, we have advanced but little in the past decade. While this might at first appear true, nevertheless even a casual study of the literature reveals that the prognosis in renal tuberculosis has been considerably brightened by modern methods, which enable the diagnosis to be made and treatment instituted at a much earlier period in the disease, thus making for more successful cures. It is my wish to rather briefly review the condition, noting in passing the various sites of its occurrence in the genito urinary tract and outlining the factors necessary for a correct and complete diagnosis, together with present day methods adopted for its treatment.

Genito Urinary Tuberculosis may be divided for convenience into Genital and Urinary according to the site affected. Both may be present and either one may arise secondarily from the other. It is generally accepted that Genital Tuberculosis in the male at least is in the majority of cases secondary to some focus. It is also agreed that for the most part the infection is haematogenous in nature, though a certain number of cases do occur by direct extension downward from the kidney, ureter and bladder to the prostate. MacKenzie estimates that this mode of infection probably comprises about one-third of cases.

There is considerable difference of opinion as regards the site of infection in the genital tract in cases of primary genital tuberculosis. Frequently the disease is so far advanced when discovered that its origin cannot be determined. The consensus of opinion is that the primary site is in the globus minor of the epididymus, but a few, among them Young, believe the primary haematogenous focus to be in the seminal vesicles.

To the examiner tuberculosis in the epididymus first appears as small, hard nodules in the lower pole. From here the disease spreads to the upper pole then outward into the surrounding tissues. The epididymus becomes enlarged, thickened and nodular. The nodules are firm and may be easily recognized on palpation. Frequently, however, a chronic inflammation can only be differentiated by the microscope. This stage may persist for a long time, but sooner or later caseation and liquefaction occur, with sinus formation. The latter is almost pathognomonic of the disease. The condition then spreads to the vas deferens, prostate and seminal vesicles, the spread occurring via the lumen of the vas, or possibly by the lymphatics in its wall. The spermatic cord becomes thickened and nodular. The tunica vaginalis may become involved with formation of tubercles on its inner surface, and frequently formation of a hydrocoele, which may mask the diagnosis. The testicle is relatively resistant, but in time will also become involved.

The condition is relatively common. Inasmuch as there are few symptoms it is usually well advanced before it is seen. It may be acute or chronic; may have an onset simulating gonorrhoeal epididymitis, with high fever, severe pain and marked swelling of the epididymis. The majority, however, have an insidious onset and present themselves because of swelling in the testicle, pain and discomfort due to the increase in weight of the scrotum. Nearly always they trace the onset to some trauma, such as a blow in the testicle. This trauma merely serves to draw the patients attention to the lesion, which has been in existence some time before the event.

The condition must be differentiated from the chronic inflammation, syphilis and neoplasm. In syphilitic conditions a blood wasserman will usually make the diagnosis. In neoplasm the Aschoff Zondak test is of great value. Chronic inflammation is often impossible to differentiate clinically.

The treatment consists of resection of the involved epididymis, together with as much of the vas as possible, and general hygienic measures. It is doubtful whether surgery is indicated when the condition is bilateral, or when the seminal vesicles are involved, except in the presence of a draining sinus or abscess formation. Inasmuch as the condition is nearly always well advanced before the diagnosis is made the prognosis must be guarded. Surprisingly good results are frequently obtained from non surgical measures. Cases of secondary involvement in the urinary tract, even following surgery, are not uncommon.

Tuberculosis of the prostate is probably never primary. Cases of primary infection have been reported by Kore, Scott, Kryzwicke (2) Wulff, Burchardt, Barney, Keyes and Crandon. Of these only four had complete autopsies. Bothe reported another case in 1927 in which there was no autopsy. In 1930 Lowsley and Duff in a complete review of the literature would accept only the case of Crandon as one of primary tuberculosis prostatitis. They added two cases of their own where no other focus could be demonstrated, but did not claim these to be primary in the prostate.

Tuberculosis in the prostate is usually confined to the neighbourhood of the ejaculatory ducts, the spread occurring by the posterior lobe to the dorsal portion of the lateral lobes. The median lobe is less frequently involved. The vesicles are almost always involved. Hence it will be seen that the picture usually represents an infection descending from the vesicle to the prostate. It is, however, conceded that infection may occur either from a renal tuberculosis, or from a tuberculosis epididymitis.

The patients present no pathogonomic symptoms. They usually complain of frequency, urgency, dysuria, and occasionally terminal haematuria. On examination the prostate will be found to be irregular, hard nodular and at times fixed. A valuable aid in diagnosis is the presence of nodules in one or both seminal vesicles. The urine will often show pus and acid fast bacilli. The latter may also be found in the prostatic fluid, but massage of a tuberculosis prostate is contraindicated because of the danger of disseminating the disease. In the differential diagnosis prostatic calculi and malignancy must be ruled out.

Though surgical procedures have been devised, the consensus of opinion is toward conservatism, and the treatment is purely hygienic, except in the presence of an abscess, where surgical drainage is indicated. Such patients are usually left with a chronically draining sinus.

Because of their anatomical position the seminal vesicles may be infected in three ways; from the blood stream, from descending infection from the

epididymis, or by ascending infection from the prostate. The condition is almost always true a chronic granulomatous lesion. Caseation and abscess formation may occur, however, with perforation into the bladder or rectum. There is usually some degree of prostatic involvement in all cases, and the treatment is purely hygienic.

Tuberculosis of the urethra may occur but is rare. It is, pathologically, a chronic urethritis, with ulceration and a tendency to stricture formation. Cases have been reported in which rapid dissemination with miliary tuberculosis followed dilatation of such stricture. Periurethral inflammation with abscess formation may occur, with formation of persistent fistulae.

Tuberculosis of the penis rarely occurs, and when it does, so it usually falls into the realm of skin tuberculosis.

It must be remembered that though genital tuberculosis does occur primarily, it almost always is secondary. Hence a diligent search must always be made for the primary focus. The lungs in particular should be completely investigated for signs of disease and activity.

Urinary tuberculosis is without doubt one of the most distressing ailments to which man is subject. It is unfortunate that the symptoms which lead the patient to seek advice are almost entirely vesical in origin, which means that the disease is almost always well advanced before it is seen by the urologist. Again, renal tuberculosis more frequently than not makes its appearance in people of robust, indeed often obese stature. The common signs of tuberculosis such as fever night sweats and loss of weight are frequently conspicuous by their absence. Hence when the patient seeks advice the disease has often progressed beyond the reach of treatment, and he is doomed to end his days in pain and suffering. Too often a patient seeking advice for bleeding or frequency is dismissed with a diagnosis of "cystitis" and a bottle of medicine. It is impossible to overemphasize the fact that haematuria and pyuria are danger signals that call for complete and thorough investigation of the entire genito-urinary tract. Cystitis is a dangerous diagnosis and per se is a very rare entity. Some cause is always active, and all too frequently the cause is tuberculosis.

Tuberculosis is never primary in the kidney. There is always a primary focus elsewhere in the body, which however, may be in regions quite remote and impossible of demonstration. The original focus often subsides, to be discovered only at autopsy, when it is fibrotic or "arrested." In from 30%-40% of cases of renal tuberculosis there is definite involvement of the lungs, or pleura. Once settled in some portion of the genito urinary tract tuberculosis spreads progressively to other parts of the tract.

That the respiratory system is most frequently the original focus has been well proven by clinical evidence. It will thus be seen that both kidneys are subjected simultaneously to infection, and were it not for a lowering of resistance in one kidney from some cause such as trauma or poor drainage, each is as liable to infection as its fellow. Direct ascension along a normal ureter by a nonmotile bacillus does not seem probable, nor does the lymphatic route appear feasible with the lymph stream directed away from the kidney. Hence it would seem reasonable to suppose that the earliest lesions are bilateral, non-destructive, and frequently heal.

As to the question of a healthy kidney filtering bacteria it has been well demonstrated by such eminent workers as Dyke, Lepper and Helmholtz that such a procedure is unlikely. They found a kidney lesion always present

when bacteria were revealed in the urine excreted from that kidney. This work was confirmed by Medlar. There is no report to be found in the literature of a kidney removed after the finding of the tubercle bacillus in the urine from that kidney, which did not show evidence of a Tuberculous lesion.

There are three possibilities for infection in the kidney.

1. By the bloodstream.
2. By the lymphatics.
3. By direct extension from neighbouring diseased organs as the adrenals or spine.

A small percentage of cases undoubtedly occur by the second and third routes but the vast majority are blood borne. Symptoms seldom arise before vesical involvement has occurred, and hence the disease is well established before the diagnosis is suspected.

Occasionally there may be no symptoms, and not infrequently cases are discovered through the presence of pus in the urine, found during routine examination.

The difficulty in making the diagnosis in a chronic case is apparent. Tubercle bacilli only appear in the urine following rupture of a small abscess into the pelvis. This may occur periodically, as is the case with the lungs. However, when one realises that the disease is a general one, the immediate indication for rest and careful study becomes apparent. Repeated cystoscopies, if carried out with skill, and at a time when the bladder symptoms have subsided should involve no risk to the patient.

In the majority of cases however, the diagnosis is not difficult, because unfortunately it is usually only the later cases that are seen by the urologist. Inasmuch as the prognosis absolutely depends upon the extent of the lesion, it can readily be seen that an early diagnosis is of paramount importance. All the symptoms may be present in half a dozen conditions of lesser importance. This may account to some extent for the procrastination which is unfortunately so common. Again, let me repeat that pus and blood in the urine have a cause which cannot safely be treated without a correct diagnosis, and in 90% of cases "cystitis" won't be the correct diagnosis. Also, it must be remembered that tuberculosis of this type does not cause emaciation until very late; on the contrary the patients are usually robust, in many cases obese. The characteristic diurnal fever is conspicuous by its absence. These facts in themselves are misleading.

While there is no pathognomonic syndrome, three things are invariably present in well developed cases, Frequency, Pyuria and Dysuria.

Frequency is usually the first thing noticed by the patient. It is a result of bladder irritation, fibrosis and consequent diminution in bladder capacity, and is constant day and night, increasing in amount with the progress of the disease.

Dysuria, burning especially after urination. This is associated with the frequency, and as the bladder becomes more and more affected, increases in intensity.

Pyuria is almost a constant finding and is present in at least 90% of cases. It usually occurs early, perhaps even before the onset of frequency and dysuria.

Haematuria may or may not be present, but almost invariably manifest itself at some time during the disease, and may be first to make its appearance. Occasionally pain causes the patient to seek advice, and such cases will reveal the presence of pus and blood in the urine. Where the affected

kidney has become functionless through occlusion of the ureter, so-called autonephrectomy there may be no urinary findings.

The order of frequency of symptoms in a small series of cases studied by the writer (100 nephrectomies for tuberculosis) from the records of the Royal Victoria Hospital in Montreal, was as follows:

Pyuria 94%; Frequency, 80%; Dysuria, 60%; Back pain, 51%; Urgency, 22%; Haematuria, 21%; Weight loss, 14%; Suprapubic discomfort, 13%; Loss of strength, 10%; Fever and chills, 7%; Night sweats, 5%.

Five per-cent of the series complained of no symptoms, the condition being found in the course of routine examination.

The final diagnosis rests upon the laboratory, cystoscopy and X-ray findings. Frequently, the bacillis can be found in a single voided specimen; usually a search is necessary, and great patience and perseverance may be required for success. All the urine passed must be examined, and this is usually done in 24 hour lots.

A good procedure follows:

To the 24 hour amounts of urine is added 5% tannic acid, about 2 c.c. being used for each litre of urine. This causes formation of a precipitate which carries down with it any tubercle bacilli present. The urine is then allowed to stand for at least eight hours and preferably twenty-four, after which the supernatant fluid is carefully decanted off, and the sediment spun down in a centrifuge. In order to concentrate the sediment as much as possible it is then treated with an equal amount of 5% sodium hydrate and heated but not boiled. Following this the sediment is again centrifuged, the supernatant fluid decanted, and the residue treated with an equal amount of 1/10 normal hydrochloric acid. This serves to further concentrate the sediment and allows of it adhering more closely to the slide. The centrifuging process is again repeated, after which the sediment is spread thinly on clean glass slides and stained by the carbofuchsin method as modified by Petroff. This procedure is as follows:

The slide is covered with carbo-fuchsin and steamed but not boiled, for five minutes. It is then washed in distilled water and decolorized by placing it in acid alcohol for five minutes. Following this the slide is again washed in distilled water, covered with 94% alcohol and allowed to stand for five minutes. It is then carefully washed in distilled water and counterstained with brilliant green for one minute. The slide is then dried and examined under an oil immersion lens. The bacilli when present are usually congregated in groups and show up readily against the green background.

If the bacillis is not found the urine may be injected into guinea pigs, which are killed and carefully autopsied at the end of six weeks. This procedure is time consuming and rarely necessary. As has been stated above, the bacillis can be found in the majority of cases. Its absence does not rule out renal tuberculosis, but its presence is proof positive of the existence of the disease.

Once the diagnosis of renal tuberculosis has been made by the finding of the bacillis, it becomes necessary to accurately localize the lesion and ascertain its extent.

The patient should now be examined by the cystoscope. Often inspection of the bladder will confirm the diagnosis. The characteristic inflammation around the trigone and ureteral orifices with or without ulceration,

or the presence of tubercles is significant. Often a clue to the affected kidney may be gotten. There may be inflammation around one or both orifices, with the so-called golf hole ureter, a result or retraction from inflammation and consequent shortening of the ureter. In a large percentage of cases the bladder will appear normal.

Each kidney must now be investigated separately. Catheters are passed to the pelvis and differential specimens of urine collected. These are carefully examined for the presence of pus and the tubercle bacillus. At this time it is well to ascertain the renal function. This may be done by the intravenous injection of indigocarmine or some similar dye, noting its appearance time in the bladder, and its concentration from each kidney. Pyelograms may now be done, using 13.8% sodium iodide as a medium. Contrary to many, Nichols believes bilateral pyelography may be undertaken with safety. Both kidney and ureter should be injected, as the latter may give a valuable clue in diagnosis.

The picture in renal tuberculosis shows a fuzzy, moth eaten appearance in the calyces. There is more or less hydro or pyonephrosis depending on the extent of the lesion. Calcification may be present and when seen is of great value, as only three conditions produce calcification in the kidney, viz.; sarcoma, calculus and tuberculosis. Multiple ureteral strictures are almost diagnostic. While single strictures are not common, it is rare to find multiple strictures in the absence of tuberculosis.

Occasionally it is impossible to catheterize the ureters either because of occlusion or stricture. This in itself is significant. In such cases intravenous pyelography may be resorted to, but inasmuch as the efficiency of this method depends directly on renal function the results are not always satisfactory.

It is essential that a careful search be made for the primary focus. This must include both X-ray and clinical examinations of the chest for disease and activity. At the termination of the work up we should know which kidney is diseased, the extent of the lesion, the renal function, especially in the good kidney, and the patient's general condition. It must be borne in mind that it is extremely hazardous to subject a patient to operation unless the diagnosis is certain. When the bacillus cannot be located from the suspected kidney, (and it usually can with patience) no case should be considered for operation unless at least two series of X-ray studies have been made, both in agreement. It is surprising how artefacts can creep into a pyelogram to confuse the examiner.

Having received all available information and established the diagnosis of renal tuberculosis in an operable case, the question of surgery arises. It must be remembered that surgery is but one step in the treatment. The indication is simply for removal of a focus. But inasmuch as the kidney is simply a local manifestation of a general process, the paramount indication is rest and heliotherapy, as is true of tuberculosis anywhere. Patients should not be rushed into surgery, especially during a period of low resistance. The utmost must be done by rest and general measures to build up the resistance to a maximum. Otherwise one may expect breaking down of the wound with a chronically draining sinus, protracted healing of the bladder lesion, and not infrequently a general miliary tuberculosis.

It is probably seldom advisable to submit cases with bilateral involvement to surgery. This however, should by no means be a hard and fast rule. Occasionally one kidney may be far advanced, and its removal will result in marked improvement.

Those cases best suited for operation are those in which the disease is confined to one kidney. The removal of a tuberculous kidney in the presence of tuberculosis in the ureter and bladder will mark the turning point in the patient's condition. The operation is best done under spinal anaesthesia not only because of the danger of pulmonary complications which may follow inhalation anaesthesia, but also because of the better relaxation obtained. This allows for better exposure with a minimum of disturbance in the operative field and less danger of dissemination of disease. It is essential that the operation be done with the utmost gentleness and as little trauma as possible. Otherwise spread of the tuberculous process may result through the vessels, with a possible miliary process and death. As in malignancy, the safest procedure is to isolate and ligate the vessels in the pedicle before attempting removal of the kidney from its bed.

The question of ureterectomy is a debatable one. Most operators remove as much as possible of the ureter. Many, and here the writer is in agreement, approach the ureter through a small incision in the groin, dividing it between ligatures with a cautery as close to the bladder as possible, and pushing it well upward. This incision is then closed with or without drainage, the patient turned over, and the kidney and ureter removed en masse through the usual kidney incision.

With removal of the active focus, the bladder condition improves to a remarkable degree. It should however, be remembered that in long standing cases the bladder has been permanently injured and its capacity diminished by scarring and contracture. Consequently, as regards the frequency the prognosis must be guarded. Nesbit of Ann Arbor has successfully transplanted the remaining ureter into the bowel by the Coffey technic, thus overcoming the problem of frequency in a permanently contracted bladder.

While, as stated above, there should be no hard and fast rule regarding bilateral cases, the vast majority are not suitable for surgery, except where abscess formation indicates drainage. Otherwise the treatment is purely hygienic. While the outlook in such cases is admittedly bad, surprisingly good results, and a few spontaneous cures have been reported.

It must be clearly understood that even as renal tuberculosis is but a local manifestation of a general process, so surgery is but an adjunct in its treatment. General hygienic measures consisting in rest, fresh air, sunlight and good food must be carried out for at least six months after operation. The point is not always remembered by the surgeon. It is advisable to have the patient return for checkup periodically.

The prognosis in bilateral infection is usually hopeless. MacKenzie of Montreal has one case alive and reasonably comfortable after fifteen years but such cases are rare. Where only one kidney is involved the prognosis is good. The cry in renal tuberculosis as in almost every disease is for earlier recognition. We have accurate means of diagnosis and successful methods for treatment, but all too often the patient is far advanced before he is seen by the Urologist.

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Bone Tumors*

C. M. JONES. M.D.

Dept. of Roentgenology, Hælifæx Infirmary.

THE successful diagnosis of bone tumors is a nice example of team work with the physician, pathologist, surgeon and radiologist each playing a definite and important part. That a diagnosis be made is absolutely necessary; simple calling the pathological change a sarcoma of bone or a bone tumor is insufficient for the different malignancies vary tremendously in their prognosis and surgical or radiological treatment. For example the osteoblastic osteogenic sarcoma has shown as high as 30% five year cures while a diagnosis of chondroblastic sarcoma signs the patients death warrant.

The etiology of bone tumors is obscure. Many of them, on pathological examination show all the stages of formation of bone from fibrous tissue through cartilage, but the process goes on in a disorderly fashion and the bone is laid down in bizarre forms. It is noteworthy that most of these tumors are found in the first two decades in which active physiological changes are taking place at the ends of the bones and it should also be noted that the ends of the bones are the most frequent site of neoplasm.

The great majority of tumors are definitely initiated by some traumatic incident, either a sudden blow affecting a growing centre (specially about the knee joint), or long continued strain such as at the insertion of the deltoid or hamstrings. In other cases, e.g. the bone cysts and the giant cell sarcomata, the metabolism is at fault. The point to be borne in mind is that some of these causes, in a way not understood, have changed a normal Dr. Jekyll, proceeding along his physiological way, into a destructive Mr. Hyde without object in his madness or limits to his ambition.

In the clinical examination of bone tumors a few points are of interest. The site, though not diagnostic, is suggestive. Chondrosarcomata are often in the upper end of the humerus while the giant cell tumor is most common in the upper end of the tibia and the lower end of the radius. Multiple myeloma affects the spine and ribs first while chondromata, usually multiple, are almost always in the small bones of the hands and feet. Again, the giant cell is always in the epiphysis, the osteoblastic sarcoma in the diaphyseal end of the long bones and Ewing's tumor along the shaft.

Pain is an early symptom. It may vary from a mild discomfort to one of such severity as to require opiates. Often termed rheumatic in character, it is subject to remissions.

On palpation the tumor is quite hard or rubbery and occasionally crepitation can be elicited. The soft tissues are freely movable over it until the skin becomes involved or the tumor becomes infected. Ulceration is rare. The veins are dilated and a peculiar cyanotic redness of the skin has been considered pathognomic of sarcoma. Occasionally pulsation can be made out. Usually the malignant tumors are not very large as they metastasize rapidly but the benign can grow to a great size.

* This is the first of a series of articles.

In the early stages of the disease the general condition is not affected but soon a marked anaemia develops, often with a temperature and leucocytic increase. The patient goes rapidly down hill and metastases to the lung and other organs quickly cause death.

The bony skeleton is not a permanent structure till well on in the third decade and it is during the developmental stage that most of the tumors arise. Hence, to follow the histogenesis of bone tumors a knowledge of the embryology of bone is necessary.

In the embryo, at the site of the future skeleton the primitive connective tissue which is to form the bone and cartilage is condensed. In the skull the fibrous tissue changes directly into bone but in the long bones there is an intermediate stage—the formation and calcification of cartilage. The cartilage is then resorbed by osteoclasts and in their wake the osteoblasts lay down the bone. This last stage, i.e., cartilage transformed into bone, seems to be the weak link, for during the time this is most active and at the site where it is most active, many of the bone tumors occur.

Osteoma. This term should only be applied to true neoplasms composed of bone but where to draw the line between new growth and inflammatory or traumatic hyperphasia is often very difficult. The pathological picture is of no aid as both types show the same characteristics. Volkmann states that only those tumors arising from cartilage should be classified as neoplastic. Virchow, on the other hand, includes many tumors which were primarily inflammatory in origin but being derived from cartilage and progressive in nature more resemble neoplasms.

The osteophyte which is a deposit of bone found where chronic inflammation is present, e.g., chronic ulcer, arthritis, septic teeth, etc. usually comes to a standstill when the inflammation has died out and so does not come within the field of new growths. Neither does the diffuse thickening of the bones of the skull and hands in acromegaly, or over a brain tumor or the bone production associated with osteomyelitis and fractures.

The chief site of true osteomata is in the facial bones. They occur in the frontal sinus or the orbit projecting into nasal cavities or the brain. It will be noted that these tumors are in intimate relation to the sphenoid and the ethmoid which are two of the few areas in the skull derived from cartilage. These tumors do not cause symptoms until they have attained a size sufficient to interfere with the function of nearby structures. In the film they show as dense clear cut shadows in the orbit or sinuses and are often discovered accidentally.

Growing into the skull that have caused symptoms by pressure on the brain, optic nerve, etc.

They are often very difficult to remove due to their situation and usually recur because of incomplete resection.

They never become malignant.

The Causes of Frequency of Micturition*

KENNETH P. HAYES, M.D.

THE average amount of urine secreted by the adult human in twenty four hours is about fifty ounces. Secretion occurs both by day and by night; is more active by day, except in night workers, partly because water is drunk during the waking hours, and partly because the activities of the day raise the Blood Pressure on which Renal Secretion depends. The urine is conducted away from the kidneys by the ureters and stored in the bladder, from which it is passed at intervals. The function of the bladder is to convert a continuous secretion into a discontinuous excretion, and to force its contents away from the body. When this mechanism fails, and the bladder ceases to fulfill its function of intermittently discharging its contents, which is constantly reaching it, the urine escapes at once in a constant slow dribble, thus replacing the pump-like action of the bladder. A common example of such failure is distension-overflow. Rarer examples are extroversion of the bladder, and a large stone filling the bladder.

A lesser but far more common degree of bladder failure is met with when it discharges urine not constantly, but much more frequently than usual. This may not only seriously interfere with one's usual activities, but when it disturbs one's sleep, may impair the general health. It is this type of frequency and its causes that will be discussed here. Bladder capacity varies in different individuals, and also in the same person at different times. The anatomical and physiological capacity are not the same. In other words the bladder may hold a different amount when its nerves are not intact. The average normal comfortable capacity may be said to be eight to ten ounces. Therefore since fifty ounces are secreted in the twenty-four hours and mostly by day, the normal frequency of micturition is four to six times by day and once at night. It is well to know about the patient's usual function. A male of fifty or more may urinate once or twice at night from life-long habit, but if this is of recent occurrence it may be a symptom of enlarged prostate.

Increased frequency of micturition (pollakiuria) is due mainly to one or both of two causes, namely—an increased quantity of urine (polyuria), and a decreased bladder capacity.

Polyuria may be due to the action of diuretics including water; or it may be due to the inability of the kidneys to concentrate, the urine being of persistently low specific gravity. To make up for the lessened quantity of solids dissolved in a given quantity of urine, a greater amount of it is secreted in the twenty-four hour period. This process continues during the night when there is a decreased consumption of water, resulting in a larger quantity of urine (of low specific gravity) proportionately to the amount excreted by day. This causes a nocturnal as well as diurnal frequency. The nocturnal frequency may be the first symptom of presence of disease. Chronic Interstitial Neph-

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ritis, Polycystic Disease, Diabetes Mellitus and Insipidus, and Hysteria are grouped under this heading of polyuria as a cause of frequency.

Decrease in bladder capacity might be either organic or functional. Organic decrease may be classified as due to external pressure preventing normal distension, to loss of normal distensibility of the bladder wall, and to partial occupation of the cavity of the bladder by residual urine or something else. Some organic diseases present two of these factors, the loss of distensibility of the bladder wall being associated with the occupation of the cavity of the bladder.

The causes of external pressure on the bladder include all pelvic swellings and sometimes adhesions, the result of pelvic peritonitis. Of the pelvic swellings most frequently encountered are the pregnant uterus in the early months and later when the head descends into the pelvis; fibroids; ovarian cysts; forward displacements of the uterus.

Loss of distensibility of the bladder wall is due to hypertrophy of its musculature caused by some obstruction distal to the bladder, for example stricture of the urethra, congenital valves of the urethra, stone and tumour of the urethra, prostatic hypertrophy both benign and malignant, and contracture of the vesical neck. Loss of distensibility may also be due to the fibrotic contraction of severe cystitis, especially advanced tuberculosis; and also to the infiltration of the bladder wall by a growth. The bladder may be healthy but incapable of distension because of weakness of its sphincters, as occurs sometimes postoperatively and after childbirth.

Under the heading of organic decrease of the capacity of the bladder by partial occupation of its cavity can be listed such conditions as enlarged prostate, stone, growths, residual urine, and ureterocele. The mechanism of dilatation may temporarily compensate for the loss of effectual bladder capacity. Hence some of the above mentioned conditions might be fairly well advanced before the symptom of frequency is marked. Residual urine is found chiefly with an enlarged prostate, with cystocele and prolapse of the uterus, and in some lesions of the spinal cord.

Functional decrease in the capacity of the bladder results from irritation of something ingested as tea, coffee, alcohol and drugs; from the irritation of something contained in the urine such as being highly concentrated, hyperacidity from excess urates and uric acid, excess phosphates, pus, bacilli; from inflammation of one or more of the neighboring glands, ducts or viscera, namely urethritis, prostatitis, vesiculitis, cervicitis, salpingitis; and from reflex causes and other nervous influences including neurosis, hysteria, fear, habit, anxiety, renal and ureteric affections especially pyelitis, urethral caruncle, phimosis, and rectal parasites.

Three conditions responsible for urinary frequency and for which the sufferers are not infrequently labelled "neurasthenic" might be considered in more detail. They are trigonitis, posterior urethritis, and submucous cystitis (Hunner Ulcer).

Trigonitis in the female is usually associated with some gynaecological condition, or secondary to a chronic pyelitis or posterior urethritis. The latter resembles trigonitis in symptoms and can only be distinguished by cystoscopy. The pathology consists of a congestion and swelling of the mucosa of the posterior urethra and internal sphincter (bladder neck), which may exist alone or it may pass on to the trigone. Advanced stages show some cystic oedema. The main symptoms are frequency by day and pain at the end of urination.

The urine is clear and shows few if any pus cells, although a few red blood cells and epithelial cells are present. Cystoscopy will reveal the condition in such patients.

The following conditions described by different authors, and responsible for frequency of micturition are, I believe, stages of one and the same process (disease), namely—simple ulcer, solitary ulcer, Hunner ulcer, elusive ulcer, submucous ulcer, paracystitis, localised submucous fibrosis, submucous systitis and interstitial cystitis. The name of submucous cystitis is to be preferred as being based on the pathology present, or giving credit to the man who best described it the "Elusive Ulcer of Hunner". The urinary findings are deceptive. The urine is usually clear and no pathology is suspected. The microscope reveals red blood cells, while the cystoscope may show nothing in the early stage, it being well advanced before a definite diagnosis can be made. Hence the name "Elusive" ulcer. Frequency and suprapubic pain are the chief symptoms. The cause of the condition is in dispute. All untreated cases show absence of infection. The possibility of pressure from other pelvic conditions is to be considered as a cause. It is thought to have an anatomical connection in its origin, as it usually occurs at the dome of the bladder. A recent case of this condition coming under my care was that of a woman, age 44, and referred because of marked frequency and suprapubic pain. Examination showed her to have a multiple fibroid condition of the uterus, one of which was pressing on the bladder. A pan-hysterectomy was done, but the urinary symptoms continued. Cystoscopy showed a patch of submucous cystitis (Hunner Ulcer) on the dome of the bladder. With treatment this subsided in several weeks.

It should be remembered that renal and ureteric affections can cause frequency without any visible disturbance (pathology) in the bladder itself, and apart from the fact of irritation of the urinary contents. In early tuberculosis, pyelitis, uninfected calculus, there is progressive and insidious frequency without any irritating substance in the urine to account for it. This can be explained as being neurogenic in origin, as the segmental nerve supply of the kidney, ureter, and bladder is partly the same, from the twelfth dorsal and first lumbar segments of the spinal cord. Kidd of London emphasises this fact with the statement that "increased frequency is a sign par excellence of a diseased kidney rather than a diseased bladder. It should be more recognised that, in investigating a cause for increased frequency, the condition of the kidney should be examined and the kidney excluded as a cause, before supposing that morbid conditions lower down the tract are sufficient to give a full account for the symptom. Failure to appreciate this accounts for many disappointments in treatment."

One investigating the symptom of increased frequency, one should consider whether it occurs by day or by night or both; its association with other symptoms; the age of the patient; temperature; and the general condition of the patient; the condition of the urine; and in many cases a cystoscopic examination will be necessary.

Frequency of a stone in the bladder is usually diurnal in character, accompanied by dysuria and perhaps haematuria on motion.

With benign prostatic hypertrophy frequency is nocturnal and accompanied by difficulty in urination but no pain.

Increased frequency with dysuria and pyuria in man of thirty to forty suggest stricture of the urethra.

Bladder growths tend to show themselves by painless haematuria. When to this is added frequency, urgency and pyuria, one must suspect a co-existing cystitis pointing to malignancy of the growth.

The combination of pus in the urine and frequency is often thought to be a sure diagnosis of cystitis, a much abused term. Cystitis is rarely a primary disease. It is usually secondary to disease high in the tract, and less often to conditions low in the tract, in the posterior urethra and prostate. It should be remembered also that pyelitis can give a similar picture to cystitis without actual involvement of the bladder.

Frequency with pyuria and tenderness along the urinary tract, means an inflammatory lesion of part of the tract or one of its offshoots. When to this picture fever is added, one should suspect pyelitis, if tenderness is high up in the loin or abdomen; and prostatitis if tenderness is in the perineum of the male.

One must not be satisfied with a diagnosis of pyelitis or cystitis unless other causes are ruled out. These conditions are more frequently complications of a hydronephrosis from some cause, of polycystic kidney, horseshoe kidney, calculus in the urinary tract, growth in the tract, foreign body and diverticulum of the bladder.

In any patient a number of factors may contribute to increased frequency, Prostatic hypertrophy at different stages of its evolution might be taken as an example. In its early stages the frequency is due to the sensitiveness to urine of columnar epithelium pushed into the internal meatus (sphincter) and upwards into the bladder. Later the frequency is due to the residual urine decreasing bladder capacity, and finally to the polyuria of renal inefficiency.

An attempt has been made here to deal with the principles and factors underlying frequency of micturition, and to correlate these with the more common diseases responsible for this distressing symptom. In order to elucidate it properly one must obtain a careful history, do a thorough clinical examination of the urine and determine the residual if any. The examination of the urine should include the two glass test, naked-eye search for flakes, shreds, and cloudiness, the usual chemical tests, and most important of all a microscopical and bacteriological search for pus, red blood cells, epithelial cells, casts and bacteria. If the latter is done more frequently there will be earlier diagnoses and fewer disappointments. The cystoscope will in many cases be the final test in the diagnosis of causes of increased frequency of micturition, and its combination of symptoms.

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Exposure to the Violet Ray as a Prophylactic* Agent to the Nipples in the Last Month of Pregnancy

E. K. MACLELLAN, M.D., F.R.C.S(C), F.C.O.G.

FOR several years I have been interested in seeking some means of preventing nipple troubles in the earlier days of lactation. During this time many applications have been tried with little or no success.

Painful and cracked nipples are so frequently encountered and they are so distressing to the patient that nursing often cannot be continued. Women during pregnancy, the puerperium and lactation are usually in a highly nervous state. Anything which adds to their troubles is often the last straw. Many women simply refuse to stand the pain incident to nursing. Treatment of the sore and cracked nipple is most unsatisfactory, because each subsequent nursing constitutes an additional assault and battery to the already traumatized tissue. The benefit of any healing which has taken place since the previous nursing is lost. For two or three years treatment of the cracked and painful nipple was tried by means of exposure to the air. A warm flannel cover for the breast with two small apertures to permit exposure was provided. This was used continuously during the day, except when visitors were admitted. There seemed to be a decided improvement in the results by this method over older methods of treatment. This suggested the use of the ultra-violet ray as a prophylactic agent. About two years ago I started using exposure to the violet ray in the cases of all private patients admitted to the Halifax Infirmary. Dr. C. M. Jones, radiologist, has carried out the treatment, Dr. Jones gives from six to eight treatments depending on whether the patient is of the blonde or brunette type. He starts with one and a half minutes' exposure at 40 inches and gives treatment three times a week, working up to 10 minutes' exposure per treatment. Only the nipple and areola are exposed.

Since starting this treatment, in not one instance has there been even the slightest trouble, some 50 patients having been treated to date. In the case of one patient who came under my care a few days before term, because her physician had died, the treatment was not given. After delivery she quickly developed very painful and tender nipples. Up to this time the violet ray had not been used except for prophylaxis. However, it was decided to see what reaction would follow, and a treatment was given. After the first treatment nursing was accomplished without the slightest discomfort. The patient was then given the usual prophylactic course and had no further trouble.

I should very much appreciate having anyone interested try 50 or so cases with a similar number untreated as a control group, and should be very

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grateful for a report by other observers, particularly in regard to prophylaxis, but also as an adjunct to other means of treatment.

Since this paper was written I have had a good deal more experience with the violet ray, both as a prophylactic and as an adjunct to treatment. There have been one or two cases who developed nipple trouble in spite of the series of prophylactic treatments. In each of these cases, however, the patients had gone post-mature and had thereby lost to some extent the benefit of the exposures. There have also been several untreated cases who did not have the violet ray as prophylaxis, and where it was used as a therapeutic agent, in each case it gave excellent results.

Analysis of Townsend Plan

Population of the United States.....	124,000,000
Eligible under Townsend Old Age Pension.....	50,000,000
Balance.....	74,000,000
Prohibited under Child Labor and Government Employment.....	60,000,000
Balance.....	14,000,000
Unemployed.....	13,999,998
Left to produce the Nation's goods.....	2

Apparently this leaves things up to you and me, and as I am not feeling so well, that pretty much puts the burden on you.

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It is to be distinctly understood that the Editors of this Journal do not necessarily subscribe to the views of its contributors, except those which may be expressed in this section.

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THE FOUNTAIN

ON the lonely road between Bethany and Jericho is a strange old house with an interesting history. In design and structure it bears convincing evidence of having been built in Roman times. Tradition and story not only vouch for its antiquity, but attest as well its claim to having been the identical house of refuge, indicated in St. Luke's Gospel, to which the Good Samaritan brought the wounded traveller to be treated and nursed until his recovery was complete.

In gospel times, this road was infested with robbers and assassins; there were murders and assaults, and quite likely this one lone house by the road did service both as an inn and a sort of nursing home or hospital. Of course the story of the Good Samaritan was in the nature of a parable, but it might well be that Jesus, who was travelling towards Jerusalem at the time, and knowing the current reputation of the locality made use of an actual happening to illustrate the lesson he was teaching. At any rate, this is Mr. H. V. Morton's view, and it is backed by evidence and inferences of good repute.

There is much of healing and curing diseased persons in the gospels, but so far as I know this is the only instance when the Divine Healer indicated a house or place where a sick man was to be treated and cared for. Even the specific details of the treatment are mentioned, or as we would say today, the technique of wound surgery. He poured into the wounds oil and wine; as an emergency dressing, one would say a very excellent one. The oil of olives mixed with an alcoholic wine, and the law of fermentation took care of the alcoholic part, would make a reasonably soothing and antiseptic mixture or lotion. No Bible story has ever caught the Christian imagination like that of the Good Samaritan. It immortalized a representative of a despised race. It made the name Samaritan synonymous with charity and good will. The Samaritan it was who opened the gates of mercy to the sick and suffering of mankind. The houses of healing Christianity brought into being, as its influence spread through the world, drew their inspiration and guidance from the good deeds done the wounded traveller on the Jericho road. It may not

be without significance that, of the four Gospel writers, St. Luke alone tells the story of the Good Samaritan, and St. Luke was himself a physician.

It is a far call from the ancient refuges or hostels for the care of the sick poor to the brilliantly equipped hospitals of today; but, while we bathe our minds and hearts in the refreshing glories of our great advancement, we should not forget the small crystal Fountain source of it all which the Master of Life itself discovered for us long, long ago in the Judean hills.

What one might call the soul of the present day hospital came out of the Samaritan's conception of duty and service. Adopted, developed and refined by Christianity, which interpreted neighbour in terms of all mankind, this spirit was woven into a principle and a philosophy of social justice, that for the first time recognized in some measure at least the essential brotherhood of man. The seed indeed of nursing care and houses of healing antedates the Christian Church, and some of it found soil in which there was a limited growth; but it was only under the fertile stimulus of Christian equality and charity did it bloom and bear fruit a thousand fold. We may, therefore, put our first mark down for the evolution of hospitals in the early days of the Church. What came before bore so little resemblance to the hospital of today that it may easily be left out of the reckoning.

The Sisters of Charity, who in this edition of the Bulletin are At Home to the Doctors of the Province, in common with other similar sisterhoods, have in a visible and very special way kept the tradition and followed the practice of the Church. The springs of service to the sick that ages ago bubbled up from the Judean rocks, where walked He who was the Way and the Truth and the Life, have grown into great rivers which, laving the shores of the centuries, have ever borne on their tide the things that have to do with promoting the happiness of mankind.

The Sisters recognized long ago that their obligations to the sick under their care could be properly discharged only by calling to the service every agency known to science and human experience, and this beautiful hospital is the answer. Their lives are shorn of worldly pleasures, as such things are popularly understood. Their's is one of service and duty, and they find very real happiness here. Longfellow's beautiful lines might express the philosophy of their service:

If it enrich not the heart of another
 Its waters returning back to their springs like the rain
 Shall fill them full of refreshment;
 That which the Fountain sends forth
 Returns again to the Fountain.

G. H. M.

CASE REPORTS

Congenital Obstruction of the Pylorus.

June 11/35, 10.00 P.M. Name: Baby M. (male.) Age: 3 days old. (White.)

History.

Complaints: 1. Vomiting. 2. Loss of weight.

Personal History: Normal birth. Birth weight 8 lbs. 2 $\frac{1}{4}$ ozs.

Family History: One sister, 3 years old, health good. Normal in all respects. Mother 26 years old. Both pregnancies and deliveries easy, uneventful. Father, 30, living and well. No history of hare-lip, club feet, or any congenital defect. No history of tuberculosis, diabetes, cancer, insanity, heart or kidney disease.

Present Illness: On the day of birth was given small amounts of weak solution of lactose, which was vomited a few moments after being taken. On the second day it was put on the general formula, this was also vomited promptly. Small amounts of sterile whey substituted with the same results. Weak solution of lactogen, 1 dram at a feeding, tried, with no better result. Passed meconium on the first and second day. Small brown movement from bowels on the third day. Greenish bowel movement on the fourth. Has lost nine (9) ounces in weight in three days. Stomach washed out with weak soda bicarb. sol. Small residue vomited immediately the catheter was withdrawn. Vomiting forceful and projectile in type.

Physical Examination.

Height: 20 inches; Weight: 7 lbs. 9 $\frac{1}{4}$ ozs; Temperature: 98.4; Pulse: 130; Resp: 30; General Appearance: irritable and restless; Nutrition: fair; Head: scalp clean; Hair: black; No caput or evidence of moulding of head. Sutures: not gaping; Anterior fontanelle: normal size; Eyes: blue; Conjunctiva: healthy, no discharge; Ears: drums pearly white; Nose: no nasal obstruction or discharge; Mouth: clean and healthy; Tongue: dry and red; No abnormality of palate or alveoli; Neck: short and full; No palpable glands; Chest: well developed; No abnormal dullness; Bronchovesicular breathing; No adventitious sounds; Cardio-vascular-heart: rapid and regular; Sounds: clear and distinct; Apex beat just lateral to sternum, at the level of the fourth left interspace. Abdomen: soft; Liver: palpable just below costal margin; Kidneys and spleen not palpable; Umbilicus, cord still attached. Clean. No sign of inflammation. No masses palpable. Hernial orifices empty. No distention. No visible peristalsis. Given one ounce of milk mixture with bottle. Slight bulge observed in left side of epigastrium. Bulge did not move until feeding was vomited a few minutes after being taken. Vomiting projectile. External genitals: normal. Both testicles in scrotum. No phimosis. Rectal examination: rectum empty; No masses palpated.

Skeleton: no malformations or deformities; Skin: pale soft and dry, no birthmarks.

X-Ray Report. Examination of stomach.

Oesophagus—Lower end shows no change. (meal was introduced by catheter.)

Stomach—Slowly fills to normal size. No meal leaves the stomach through the pylorus. Strong reverse peristalsis then completely empties the stomach.

Comment—Complete obstruction of the pylorus or first part of the duodenum.

Sgd. C. M. JONES,
Roentgenologist.

Diagnosis: Congenital obstruction of the pylorus.

Operation—Midline supra-umbilical incision, two (2) inches long through skin and fascia down to peritoneum. Peritoneum picked up with forceps and opened. Stomach picked up and effort made to locate pylorus. This found under fairly dense avascular band extending over to the right side of the abdomen and upwards to the liver, and downwards to peritoneum over second part of duodenum. This band bound down the pylorus and first inch of duodenum which was doubled upon itself in the shape of a "Z". This part of the duodenum was about 1/8 inch in diameter before the band was divided: On dividing band the duodenum seemed to fill, expanding to 1/3 inch in diameter. Peritoneum and fascia united in one layer with running suture of No. 1 Chromic catgut. Skin with interrupted dermal. Skin painted with tr. benzoin co.

Progress Notes.

June.—Returned to his crib in good condition. Colour good. Breathing good. Two ounces of half normal saline per rectum q. 4. h. One dram of whey with 20% glucose given q. ½. h. per mouth. Vomited after each feeding—apparently the full amount taken with some bile—until 7.30 P.M. Feedings as above retained until 1.00 A.M. . . . when he vomited a small amount (1 dram).

June 13.—Bowels moved freely during the night and he expelled flatus. Has been resting well. At 8.00 A.M. lactogen dram 1, to sterile water ounce 1, given q. h. Vomited 6.00 P.M. feeding. Feeding periods lengthened to two hours. Bowels moved, dark green with some mucus. Retained following feedings.

June 14.—Cried a great deal during the night. Did not seem satisfied with feedings. Given sterile water between feedings. In the morning quantity of feeding doubled, same strength, still q. 2. h. Retained all feedings. Temp. 98.6. Stool greenish-yellow, semi-solid.

June 15.—Cried a great deal during the night. Did not vomit. Stool greenish-yellow. Temp. 98.6 Retaining all feedings.

June 18.—Sutures removed. Wound firmly healed.

June 22.—Has been gaining weight and general condition seems satisfactory, but has been crying and fretful greater part of time. Formula changed to lactic acid milk.

June 27.—Crying very little since change in formula. Has not vomited since June 13th. Weight 8 lbs. 10½ ozs. Condition satisfactory in every respect. Discharged.

Follow-up. Aug. 2, 1935.

Was kept under observation for one month after discharge from hospital. Development normal and satisfactory. Weight on this date 10 lbs. 9½ ozs. Normal in all respects. Abdominal wall does not show any weakness at site of operation. Taking formula well. Has not vomited since being taken home.

J. V. GRAHAM.

Seminal Vesiculitis of Non-venereal Origin.

Mr. S. H., age 49, first seen August 1932. Complaints were discharge from meatus urethrae, "rheumatism" of lumbar region and shoulders, loss of strength and loss of weight.

The discharge was clear, sticky and appeared frothy, and showed at the meatus after a bowel evacuation, when about a teaspoonful would be expressed. There seemed to be, he said, some obstruction to the urinary stream until this discharge came, when the stream would flow with good force. There was continuous moisture of the meatus afterwards. This had been present for about two years, and first occurred four months after a "rectal" abscess. It was gradually becoming more abundant, in spite of the fact that he had been treated by irrigation, injection, massage, sounds, and vaccines for a venereal disease (gonorrhoea). Along with this he was losing weight (ten pounds in a year), and his strength was failing, and rheumatic pains increasing.

Venereal disease and exposure to such were denied. Family history and past history showed nothing bearing on the case, with the exception of the "rectal" abscess. This abscess followed on an "attack" of haemorrhoids, and required lancing twice, and drained pus for three weeks.

Physical examination showed a man of good stature, weight—145 pounds, pale skin, blood pressure 118/70, haemoglobin 70%. Heart and lungs were negative.

The meatus urethrae was moist, and a drop of mucous discharge could be expressed. On massage about a dram of frothy, clear, mucous discharge, with a slight greenish tinge was obtained. The discharge contained many rod shaped organisms in chains and clusters, identified by culture as *Bacillus Pyocaneus*. Few pus cells were present. The discharge proved to be almost a pure culture of this germ.

The urine was opalescent in both of two glasses and contained few shreds in the first glass. Centrifuged specimens showed many of the same rod-shaped organisms.

Cystoscopically the only positive findings were a congested and oedematous verumontanum, and a few dilated prostatic ductules. The verumontanum was divided across, probably damaged by instrumentation. Discharge could be expressed by rectal massage and seen emerging from the ejaculatory ducts.

With special attachment to the McCarthy Pan-Endoscope, both ejaculatory ducts were catheterised, and about a dram of frothy, mucous material

obtained from the left, and less from the right. Hydrogen peroxide was instilled into both ducts. This procedure was repeated every two weeks for four treatments, and monthly for few more. The improvement in his general and local condition was noticeable from the first treatment. At the end of three months he had gained fifteen pounds in weight, and was relieved from the other complaints, with the exception of a slight moisture of the meatus after bowel evacuation if he should be constipated. His condition still remains good after two years.

The fact of a *Bacillus Pyocyaneus* infection, and it being the only organism present in several specimens examined, would substantiate the man's claim of it being non-venereal in origin. It is also interesting to note that he had been treated by massage, etc., without improvement, but responded to drainage of the ducts and seminal vesicles by catheterisation. The mechanism of the entrance of the germ was probably by direct extension from the abscess.

KENNETH P. HAYES.

Mechanical Obstruction to Delivery.

Mrs. H. G. age 25, a primipara who became pregnant in February, 1935. After missing one period she consulted her Doctor, who, at that time, thought she was either pregnant or had a tumor. I mention this in view of what followed. She carried on well through her pregnancy; was seen by me at the fifth month, at which time the uterus was larger than the period of amenorrhoea indicated, with the foetal head lying high in the right lower quadrant, and felt quite close to the surface. During the succeeding months the uterus enlarged at the regular rate, but the position of the child did not change, the head remaining high. In October the foetus was lying almost directly transverse. Careful pre-natal examination disclosed no pelvic abnormality to account for the transverse lie, and early in December the patient went into labor, having previously been told that the chances were, she would have to have, a Caesarean section, but would be allowed a test of labor. After five hours of labor, there being no change in the position of the foetus, on consultation, it was decided to proceed with the Caesarean. A classical Caesarean section was performed, and the child delivered, a large male baby weighing nine pounds. On examination of the uterus it was found that the lower right uterine wall contained an intramural fibroid, the size of a grapefruit. The uterine cavity was distorted to the left, and the left uterine wall considerably thinner than the right. The child showed a distinct difference in the size of the face, the right side being distinctly smaller than the left where it had lain against the fibroid, and probably this was aggravated by the five hours of labor; otherwise the child was healthy. This difference in the size of the face improved considerably during puerperium. The mother's recovery was uneventful, and on discharge examination the uterus was subinvolved and the fibroid could be palpated in the lower segment. This case is presented because of its comparative rarity in a young woman, and because it illustrates a case of mechanical obstruction to normal delivery.

W. G. COLWELL, M.D.

Myxoedema.

Mrs. B. age 58 years, married.

Complaints: Dizziness, weakness, very dull and drowsy; constipation; always cold; dryness and itching of skin; swelling of face and baldness.

History: Had an attack of jaundice about twenty years ago, followed soon after by an attack of rheumatic fever, which involved several joints and lasted about three months. No other serious illness or accidents. Has had five children, all living. No miscarriages. Menopause began at the age of forty-five. No unusual symptoms at that time.

Present Illness: Began thirteen years ago, soon after the menopause. Patient is not certain of the order of her complaints. Dizziness and weakness were the first noticed; she found it became increasingly difficult as time passed to be up and around the house and would be staggering about trying to do her housework. Eventually these efforts became such a tax on her strength that she finally was compelled to give up. Constipation was very marked for some time now. Swelling of the face and dryness and itching of the skin now troubled her. She was always cold, and wanted to be dozing continually. Appetite was poor and she complained of indigestion. She noticed her hair was thinning and bald patches were appearing.

Examination: White female, very anaemic. Dullness and drowsiness were very evident, and gave one the impression, on conversation of almost a mental condition. The skin was very dry and roughened, particularly the arms. Face swollen generally, both upper and lower eyelids swollen to such an extent that the eyes could not be opened. Eyebrows were absent. Hair of scalp very dry and thin bald patches throughout.

Physical examination: Heart sounds very soft and weak; unable to detect any murmurs. No evidence of hypertrophy. Blood pressure, systolic 118; diastolic 60. Pulse 64. Temperature 97.6°F. Chest examination showed chronic bronchitis. Abdominal examination did not reveal any abnormalities. Urinalysis—no albumin or casts present. The condition was considered a case of myxoedema. The patient was advised to enter hospital and have her basal metabolic rate determined. This she refused to do, and so treatment was started at home.

March 15, 1934. Thyroid gland, gr. $\frac{1}{2}$, t.i.d. Ventriculin with iron. Bronchitis mixture. The patient was seen at intervals of two to three days; the thyroid gland was gradually increased until she was taking seven $\frac{1}{2}$ gr. tablets daily in divided dosage.

April 1, 1934. Marked improvement in her condition was very evident. The facial swelling had vanished and patient for the first time in months could open her eyes normally. Dizziness and weakness had cleared up. Mentality was keen and quite normal. The roughness of skin was clearing up.

April 15, 1934. Blood pressure, systolic 130; diastolic 76. Very little laxative required for bowels. Bronchitis cleared up. Heart sounds were quite strong; anaemia clearing up; appetite good and no complaint of indigestion. Patient was able to be up and about the house in comfort. Eyebrows were growing in; but as yet not very much change in the scalp.

May 15, 1934. Hair of scalp growing in. Strength good, able to do some of her housework. Skin normal. No complaints of being cold. Thyroid gland gr. $\frac{1}{2}$ was reduced to one tablet four times daily.

June 15, 1934. Patient has been out walking; the first time she has been able to do so for the past eleven years. She is now doing all her housework. No complaints. Patient's own statement is that she has never felt so well nor fit for the past fifteen years. I have been keeping in touch with the patient at irregular intervals since June, 1934.

Last examination, April 7, 1936. Thyroid gland gr. $\frac{1}{2}$ t.i.d. Blood pressure systolic 142; diastolic 80. Patient feels well and looks well; strength good. No complaints of dizziness nor discomfort from cold. Skin and hair quite normal. For the past fourteen months in addition to her regular housework she has been caring for her infant grandchild. Patient states she feels as well now as at any time during her life previous to the onset of her present sickness.

The points of interest to me in this case; the condition evidently resulted from a glandular disturbance at the time of the menopause. The long period of time, at least eleven years, before suitable medication was started to check the course of the disease. The complete disappearance of symptoms and signs in a relatively short time.

The marked feeling of well being after so many years of chronic invalidism.

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Those physicians wishing to make use of the free diagnostic services offered by the Public Health Laboratory, will please address material to Dr. D. J. MacKenzie, Public Health Laboratory, Pathological Institute, Morris Street, Halifax. This free service has reference to the examination of such specimens as will assist in the diagnosis and control of communicable diseases; including Kahn test, Widal test, blood culture, cerebro spinal fluid, gonococci and sputa smears, bacteriological examination of pleural fluid, urine and faeces for tubercle or typhoid, water and milk analysis.

In connection with Cancer Control, tumor tissues are examined free. These should be addressed to Dr. R. P. Smith, Pathological Institute, Morris Street, Halifax.

All orders for Vaccines and sera are to be sent to the Department of the Public Health, Metropole Building, Halifax.

Report on Tissues sectioned at the Provincial Pathological Laboratory from April 1st, 1936, to May 1st, 1936.

During the month, 161 tissues were sectioned and examined, which with 8 tissues from 2 autopsies, makes a total of 169 tissues.

Tumours, malignant.....	28
Tumours, simple.....	5
Tumours, suspicious.....	3
Other conditions.....	123
Tissues from 2 autopsies.....	8
	—169

Communicable Diseases Reported by the Medical Health Officers
for the month of April, 1936.

County	Chickenpox	Diphtheria	Infantile Paralysis	Influenza	Measles	Mumps	Paratyphoid	Pneumonia	Scarlet Fever	Typhoid Fever	Tbc. Pulmonary	Tbc. -other Forms	V. D. G.	V. D. S.	Whooping Cough	ysipelas	German Measles	Impetigo	TOTAL
	Annapolis.....	4	2	1	1	..	1	1	..	5	..	15
Antigonish.....	6	..	..	..	..	..	..	2	3	..	..	..	..	..	..	..	..	..	16
Cape Breton... 13	3	..	..	..	..	..	..	2	3	..	3	..	1	..	6	..	1	..	32
Colchester.....	..	..	..	5	2	..	..	6	1	..	1	..	..	..	10	..	21	..	46
Cumberland... 8	..	..	..	16	..	..	..	2	..	1	..	..	3	3	..	..	..	..	33
Digby.....	..	..	..	..	..	10	..	1	1	3	1	1	7	..	..	..	12	..	36
Guysboro.....	..	1	..	..	..	..	..	1	..	..	3	..	..	..	..	..	..	..	5
Halifax City.. 13	..	..	..	..	9	..	..	..	45	..	1	..	..	..	..	1	..	..	69
Halifax.....	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	2
Hants.....	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	45	..	48
Inverness.....	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Kings.....	6	..	..	19	..	2	..	1	..	..	2	..	2	1	..	..	23	1	56
Lunenburg.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pictou.....	1	..	..	23	..	..	..	6	2	..	1	..	..	..	..	..	..	..	33
Queens.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richmond.....	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Shelburne.....	..	..	..	..	1	..	..	..	..	..	1	..	..	1	67	..	..	..	70
Victoria.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yarmouth.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL.....	40	18	..	66	15	13	..	27	57	4	14	1	13	4	84	1	107	1	465

Positive cases Tbc. reported by D.M.H.O's. 35.

RETURNS VITAL STATISTICS FOR MARCH, 1936.

County	Births		Marriages	Deaths		Stillbirths
	M	F		M	F	
Annapolis.....	14	9	4	3	9	0
Antigonish.....	14	9	2	1	3	3
Cape Breton.....	145	149	55	39	40	6
Colchester.....	29	21	16	8	9	3
Cumberland.....	37	41	12	12	6	2
Digby.....	32	29	10	23	21	2
Guysboro.....	18	11	3	4	3	0
Halifax.....	123	121	36	51	39	0
Hants.....	30	22	8	10	7	2
Inverness.....	18	20	4	10	11	1
Kings.....	19	15	10	5	9	1
Lunenburg.....	26	20	15	13	14	3
Pictou.....	43	35	13	31	13	3
Queens.....	12	17	9	3	5	1
Richmond.....	7	6	1	5	6	1
Shelburne.....	5	8	2	6	4	2
Victoria.....	8	9	11	2	7	1
Yarmouth.....	14	15	6	8	9	2
	594	557	217	234	215	33

Personal Interest Notes

Dr. M. J. Chisholm of New Waterford spent a week in Ottawa during April.

Dr. Hugh MacKinnon, native of Lake Ainslie, has taken over the practice of the late Dr. J. W. MacLean of North Sydney. Dr. MacKinnon who is a graduate of Queen's University, took post graduate work in the Old Country, and practised for a number of years in Berwick.

Dr. A. K. Roy of North Sydney gave a splendid address to over one hundred and fifty Boy Scouts on the subject of First Aid in the St. Matthew-Wesley United Church Hall on April 24th.

Dr. D. W. MacDonald of Sydney recently spent three weeks vacation in Toronto and Upper Canadian cities.

Dr. Bernard F. Miller of New Waterford has returned from Halifax where he took medical treatment at the Halifax Infirmary.

Dr. C. B. Trites of Bridgewater attended clinics in Montreal during April.

Extension Planned for Western Kings Memorial Hospital at Berwick.

In order to facilitate needs that have long been most urgent, plans are underway for increasing the accommodation both for patients and nursing staff at Western Kings Memorial Hospital at Berwick. This work, which is being promoted by the Hospital Aid Association, is expected to be undertaken at an early date. Much new equipment has been installed during the past year.

Dr. Clarence W. Thorne, Dalhousie 1918, of Melfort, Saskatchewan, spent a day in Annapolis recently on his way to England to take a post-graduate course in Surgery.

Congratulations to Dr. and Mrs. C. B. Crummey of Trenton on the birth of a son on April 11th.

Dr. and Mrs. S. J. MacLennan of Halifax recently returned from a trip to Bermuda, New York and Cleveland.

Dr. A. W. Miller of New Waterford sailed early in April on a vagabond cruise to the West Indies and Demerara.

Dr. and Mrs. Ralph P. Smith of Halifax have returned from a visit to Boston where Dr. Smith attended a meeting of the American Association of Pathologists and Bacteriologists.



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CANADA

Dr. Edgar Kelley of Middleton has returned home from Montreal where he took a three weeks' course in surgery.

At the recent annual meeting of the visiting staff of the Victoria General Hospital, Halifax, Dr. G. R. Burns was elected president, succeeding Dr. H. W. Schwartz, and Dr. E. F. Ross was appointed secretary succeeding Dr. G. A. Winfield.

One of the oldest graduates of Dalhousie to visit Halifax.

One of the oldest living graduates of Dalhousie University, Dr. J. A. Lippincott, of Monte Carlo, a native of New Glasgow, will visit Halifax in May. Up until three years ago there were living only three graduates of Dalhousie, who took their diplomas before 1870. Dr. Lippincott was one of these, and Dr. Alexander Ross of Carroll's Corner, Halifax County, was another. A third member of the same class it is believed is now living in California.

Dr. Lippincott, who in past years has been a benefactor of Dalhousie, left that university at the age of nineteen years, holding the M.A. degree and was immediately appointed principal of Pictou Academy. Later he went to Philadelphia, where he studied and shortly after that he practised as an oculist in Pittsburgh. He was also head of the Allegheny Hospital in that place for a number of years. After marrying a Miss Bush of Niagara Falls, he went to Nice, France, due to his wife's ill health, and opened practice in the south of France. During past years Dr. Lippincott has carried on a correspondence with Dr. H. L. Bronson, head of Dalhousie's physics department, and has revived his interest in his alma mater. Announcement of the reunion of Dalhousie graduates recently prompted his return to Halifax although this reunion has now been postponed. The Doctor is a brother of Mrs. W. B. Reynolds, North West Arm, Halifax. Dr. Lippincott is expected to leave Cherbourg on May 20th, for New York, arriving in Halifax two weeks later, where he will remain with his sister for about a month.

Dr. E. Kirk Maclellan of Halifax was elected President of the Halifax Branch of the Medical Society of Nova Scotia at the annual meeting and dinner held April 29th. Other officers elected were—Dr. Ralph P. Smith, Vice-President: Dr. Clyde W. Holland, Secretary-Treasurer: Dr. W. G. Colwell, Dr. P. S. Campbell, Dr. G. A. Winfield and Dr. N. B. Coward, Executive.

Dr. O. B. Keddy honoured by citizens of Windsor.

Over one hundred and twenty-five men citizens of Windsor gathered at the Knights of Pythias Hall on Wednesday evening, April 15th, to do honour to Dr. O. B. Keddy in a surprise banquet and presentation as a small token of their appreciation of his services to the town during his thirteen years as Mayor.

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OBITUARY

There passed away at his home in Stevensville, Montana, April 13th, William Pearson Reynolds, M.D., Dalhousie 1900, son of the late John Reynolds and Mrs. Bessie Athol Reynolds of Upper Musquodoboit. Dr. Reynolds would have been sixty-eight in June and had spent over thirty years practising his profession in Montana although his medical training was taken in Halifax. During that time he had visited Nova Scotia quite often. He leaves to mourn, his wife, formerly Miss Winnifred Braine, daughter of the late R. T. and Mrs. Braine of Halifax, one son, Gordon, of Missoula, Montana, and two daughters, Marjorie and Elizabeth. There are also two brothers, Frank of Otterbrooke, Upper Stewiacke and Wellwood of Reynolds, Upper Musquodoboit, and one sister, Margaret, who for some years had resided in his family.

The inflation of the lungs of newly-born infants.

At a late sitting of the French Academy of Sciences, M. Julia Fontenelle stated a curious fact in confirmation of the usefulness of the practice of inflating the lungs of newly born children apparently lifeless. An infant, who was born in a state of asphyxia, was brought, said the speaker, for dissection to M. Portia: it had already lain for some time in the room, and the surgeon was about to commence the anatomy, but before proceeding to operate, the thought occurred to him to blow into its mouth. This he accordingly did and returned circulation was excited, the heart beat—a living child!—*The Acadian Recorder*. June, 9th, 1830.

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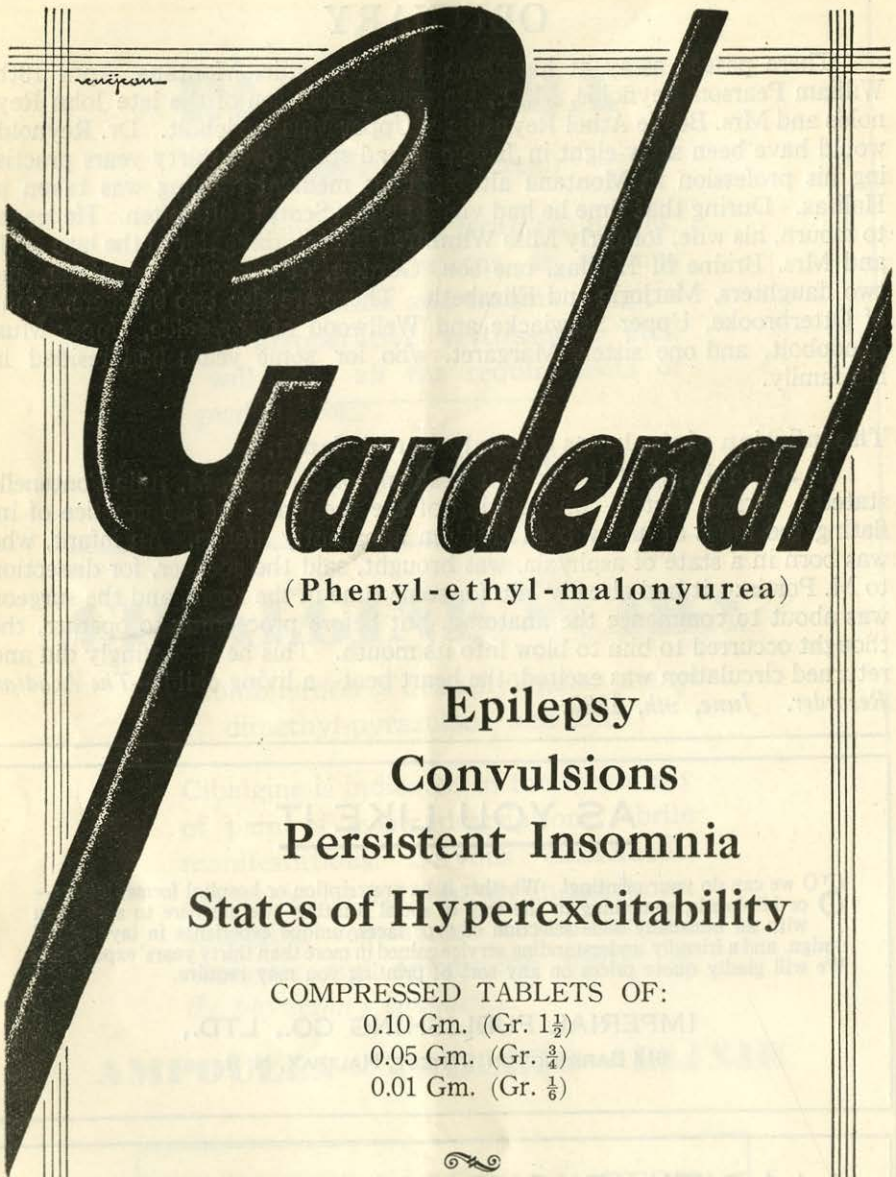
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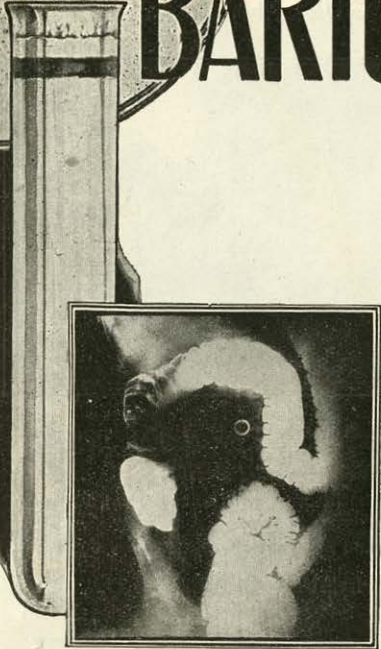
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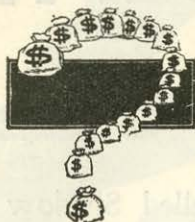
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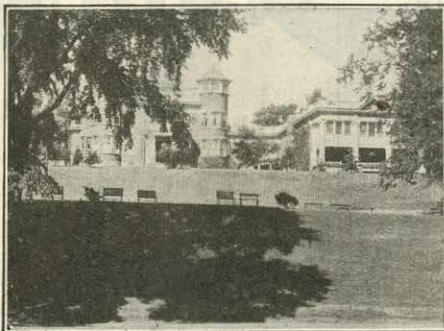


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