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Dysmenorrhea

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D Y S M E N O R R H E A

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INTRODUCTION

Dysmenorrhea is the most disturbing of all menstrual disorders, a real menace to civilized woman, and it is truly a sad state of affairs that we know so little about this common condition. This paper represents an attempt on the part of the writer to abstract and correlate facts on this subject as they are found in the English written literature for the past ten years, that is back to and including 1923. It will present the many theories of the etiology of primary or essential dysmenorrhea and the research that has been done to prove these same theories. It covers the stastistics in relation to the incidence of dysmenorrhea among various occupational classes of people as they have been given by numerous investigators. One section will be devoted to a more or less detailed discussion of the symptomatology in cases of dysmenorrhea. Not knowing the etiology of the condition, it is needless to say that much work has been done in the line of attempting to hit upon as suitable treatment. These various methods of treatment will be discussed from both a pro and con viewpoint. Finally after a systematic review of the condition we will include several case reports examplifying various theories of etiology

and results with different forms of treatments.

Dysmennorrhea as a word has been defined by Dorland as "painful menstruation." Such a definition is perfectly legitimate and useable for general discussion but for a paper such as this it is imperative that we be more specific. Hutchinson defines dysmenorrhea as follows; "When local pain or general discomfort is enough to incapacitate the patient the condition is known as dysmenorrhea." (1) Others say that any discomfort, regardless of severity, suffered before, during, after or in any manner connected with menstruation, may properly be called dysmenorrhea. Some writers classify all cases as being dysmenorrhea if it is necessary for the patient to take asperin, and such always to relieve pain. Many use as a criterion whether the patient must lie down and rest for a definite period of time the first day of each period. In other words there seems to be no definite dividing line between dysmenorrhea and normal menstruation. I prefer to label any patient that suffers any discomfort, with her menstrual period, no matter how slight it may be as suffering with dysmenorrhea. Since such a large number of women do go through their periods without discomfort it is undoubtedly a

fact that such may be properly termed as the normal.

Review of the modern literature gives very little information in regard to the history of dysmenorrhea. I have found only one reference regarding such, that being a statement that Hippocrates recognized dysmenorrhea some 2500 year ago and used dilatation of the cervix as an attempt to overcome the condition. It is extremely interesting to note the rapid progress in study of dysmenorrhea in the past few years, that is in this new era of modern woman. I wonder if it was not due to this malady that our grand-mothers and their predecessors chose to lead a quiet uneventful life and to seek almost complete seclusion at the time of their periods.

Little progress has been made in the study of dysmenorrhea from the time of Hippocrates to comparatively recent years. This can be explained on the basis that women were reticent to discuss the matter. Menstruation had been thought of as a process about which nothing should be said. Women accepted pain and other symptoms of dysmenorrhea as being normal. Recent years have brought in a new atmosphere and because of this the matter has been brought to light. More women are consulting doctors and are co-operating in the study and treatment of

the condition.

Women menstruate on the average from 33 - 35 years, 13 times each year. As will be seen later the majority of cases of dysmenorrhea clear up after child birth, but the average woman menstruates at least ten years before her first offspring is born. The women complaining of dysmenorrhea, with all these years ahead of them present a real problem to the medical profession. "Woman is more subject to emotion, pays more attention, thinks more of her sexual sphere, and the slightest disturbance of her regular activity leads her astray from the normal path of her every day life." (6) It is imperative that we as a group of scientists interested primarily in the longevity and comfort of our people investigate this condition to the utmost of our ability. Each of us as an individual should strive to expand our knowlege and understanding of these cases. I think it may be correctly said that the general practitioner regardless of his locality, large metropolis or village, who does not have many such patients come to him does not have women patients.

I, as a future practitioner, expect to see such patients, and have therefore made this review of our modern literature on dysmenorrhea. I believe

that this paper briefly presents our present day knowlege of the etiology, incidence, symptomatology and treatment of primary or essential dysmenorrhea.

E T I O L O G Y

The true etiology of primary or essential dysmenorrhea always has been a question before the gynecologists. Secondary dysmenorrhea has its etiology in some definite pelvic pathology but we shall not discuss such in this paper. Several theories as to the etiology of primary dysmenorrhea are known at the present time. Much work has been done to prove each theory. The oldest theory, that of obstruction to the cervical canal, was known in Hippocrates' time and is still thought of as being the cause in most of the primary dysmenorrheas. Then we have the constitutional theory attempting to explain all dysmenorrhea cases on a bases of variation of the individual's general condition from the normal. Hypoplasia of genital organs is also looked to as a cause of dysmenorrhea. Of the most recent exploits the nervious or psychic theory is very interesting and undoubtedly explains many of these cases. The most plausible ideas, that is, those which scientifically explain the cause of dysmenorrhea in most cases are set forth in the endocrine theory. This is one of the latest and considerable work is being done at the present, especially in this country to prove its worth.

Since time immemorial physicians have discussed the possibility of dysmenorrhea being due to obstruction somewhere along the cervical canal. The earliest treatment attempted in these cases was to dilate the canal by passing probes of various sizes. Marion Sims very definitely expresses the opinion of the early gynecologists when he stated "There can be no dysmenorrhea, properly speaking, if the canal of the neck of the uterus be straight and wide enough to permit free passage of the flow."

It is quite obvious that any obstruction to the flow would tend to cause painful contraction of the uterine musculature. Nature has so constituted the unstriated muscular organ so that they attempt to dispose of foreign material, such being the case in the bowel for example. The hyhertrophied endometrium sloughs and then it becomes a foreign body which the uterus attempts to expell. An anomally of the cervical canal obliterating it entirely would undoubtedly give rise to severe cramps with each period, but such is rarely the condition.

Supporters of the obstruction theory state that the most common reason for dysmenorrhea is acute antiflexion. The angle at the junction of the

body and cervix is too sharp to allow passage of the uterine contents. Other cases may not show such sharp antiflexion but they explain these on the basis that there is a marked decrease in the elasticity and flexability of the uterine tissue at this angle and along the cervical canal.

The normal uterus although in quite an acute antiflexion does not give ~~use~~ to dysmenorrhea. At the time of the period the intrauterine tension increases and causes the uterus to straighten thereby decreasing the fundo-cervical angle. Failure of this phenomena to function leads to dysmenorrhea. One investigator reports that excessive masturbation causes dysmenorrhea by stimulating the genital organs and therefore bringing on contraction of the internal oss with a resulting obstructive dysmenorrhea. Babrielianz shows that 50% of the girls past puberty that is, in the menstruating age practice masturbation.

The value of the obstruction theory has been argued pro and con over and over again. Those people against this theory are willing to accept it as an explanation in the very rare case of anomalous total obstruction of the cervical canal. It is definitely

known that two-thirds of one drop/flow per minute. It seems as though such a scanty flow should pass through any canal regardless of how narrow it be.

The favorite argument is put forth substantiating this theory that practically all cases are relieved of their dysmenorrhea when they have their first baby. "The fact that pregnancy is always followed by relief has no necessary bearing on artificial stretching of the cervix as the changes in the pregnant uterus are so profound that many other factors may be operative." (5) It is conceivible that a flow of two-thirds of a drop per minute might give rise to pain. Extreme pain is witnessed in a ureteral stricture. Only a fluid is passing through the ureter where-as in the menstruation there are many solid pieces of tissue. It is also reported that the degree of pain is relative to the number and size of solid particles in the menstrual flow. Membranous dysmenorrhea in which several large bits or a whole cast of endometrium are passed gives excruiciating pain.

It is nevertheless truly a fact that many women suffering dysmenorrhea do have acute anti-flexion or acute retroflexion and stenosis. Quoting

the opinion of 319 doctors in this country we may say that 63.6% of them recognized that stenosis gave rise to pain at periods while 60.5% admitted that acute flexion either anterior or retro also caused it.

We must admit that obstruction to the flow will produce dysmenorrhea, in spite of the fact that we see many women suffering who have no obstruction whatever. Many women have acute flexion and stenosis without dysmenorrhea. They are the ones in which the uterus lifts up usually at time of period and their cervical tissues are sufficiently esastic and flexible. This theory undoubtedly explains some cases of essential dysmenorrhea, but by no means does it explain all of them. It has been looked up to and respected too much in the past and for this reason little progress has been made in the treatment of the majority of cases.

Those cases believed to have their etiology entirely on a constitutional basis are comparatively few and it is believable that they will diminish with the further developement and proof of the other theories. It is quite easy for a physician to brand a woman as having a constitutional dysmenorrhea if

she is a weak, anemic malnourished individual. This however is the wrong method of making a diagnosis and it is quite true that many of these patients fall into some other class and it is quite probable that they are weak, poorly developed etc., because of the condition causing the dysmenorrhea. Most of the women suffering with their periods are at least 10% underweight.

Membranous dysmenorrhea may well be discussed under the class of constitutional cases. It is due to a nutritive change in the endometrium. Lawrence says this is due to a pelvic inflammatory condition following any one of the exanthems near the age of puberty. The disease is usually unilateral and involves tube, ovary or both. Membranous dysmenorrhea has been seen in association with diabetes as shown by case report number 3. Smith reports several cases directly associated with various allergic phenomena that were relieved by treating the patient for her hypersensitiveness to certain proteins.

Many of the patients consulting the doctor are between the ages of 16 and 19 years. They are school girls doing mental and not physical work. They sit in school 6 to 7 hours a day, then go home and sit

to study. Theirs is a more-or-less sedentary life the same as several women in offices and factories with jobs where they sit all day long. Such a restriction of activity leads to a marked pelvic congestion with a resulting dysmenorrhea. Constipation also gives rise to considerable difficulties at the time of the period because it leads to increased pelvic congestion. The same result is seen in multiparous women with poor muscule tone. Dysmenorrhea was found to be present in 44% of 200 women all of whom had two or more children and as a result had very poor abdominal and perineal muscles.

Various toxic states give dysmenorrhea due to fact that toxions affecting the ovary cause decrease in clotting time and the blood clots in the uterus and muscle contracts, causing cramps in an effort to expel the clots. Another constitutional dysmenorrhea is that known as nasal dysmenorrhea. The etiology of it is not known but the condition will be discussed more in detail in the chapters on symptoms and treatment.

In conclusion we may say that all those cases of dysmenorrhea which we can not place in a definite class etiologically, and still do not wish to call

neurotic we put in this constitutional group.

The hypoplasia theory states that dysmenorrhea is due to a deficiency in developement of the sexual organs. Hypoplasia is supposedly brought on by several different causes. It is directly associated with congenital syphilis and alcoholism, which incidently, is rare in individuals before puberty. Consanguinity quite frequently leads to such a condition in the female children. Some cases of premature birth develope with hyhoplasia of the sex organs. Many diseases occurring before adolesence leave the child in such a condition that she will never develop properly. This is especially true in early ricketts, tuberculosis, chlorosis, acute exanthemata, repeated upper respiratory infections, grippe and recurring acute attacks of tonsilitis.

With these various factors acting as the cause of hypoplasia we now turn to the mechanism by which it causes dysmenorrhea. There are two types of hypoplastic uteri, the dwarf and the fetal. The dwarf uterus is markedly smaller than normal but the relationship between the size of body of uterus and cervix are the same as normal, that is, three to one. The fetal uterus carries a revers relation-

ship, that is, the cervix is three times the size of the body. In both cases however, we find the musculature is poor with utricular hands causing both a defective musculature and mucosa.

Such uteri give rise to dysmenorrhea because there may be a stenosis or acute angulation not compensated for by the normal rise of uterus at time of menstruation. In some instances the pain may be of congestive nature, that is, due to poor circulation. Women with hypoplastic uteri are quite frequently highly nervous and neurotic, this being the explanation for the pain.

We now come to discuss that theory which has been labeled with various names such as, nervous, neuresthenic, psychic, psycho-traumatic, psych= asthenic, etc. Regardless of the name given it the condition finally boils itself down to one of three things, namely; 1. increased instability of nerves; 2. purely psychic condition; 3. a combination of the above two. I believe that the most common of all is the last. It is not possible to amply discuss the psychoses connected with menstruation in this paper because it is a large topic in itself but we shall attempt to illucidate somewhat on the

question.

How frequent it is that a frightened child of 12 to 15 years of age is brought to the doctor's office by a more frightened and disturbed mother because her child is about to start, or has started her periods. Such an incidence in itself is enough to brand that girl for life. Mothers afflicted with dysmenorrhea usually do either of two things, both of which are wrong. They allow themselves to become almost totally incapacitated with their pain, they limit their social activities, they do not bathe as usual, in fact they do all sorts of rediculous things. Such a state of affairs naturally arouses little Mary's curiosity and the disire to know what it is all about. Mother may tell her and in so doing magnifies her troubles so that the child will fear such an ordeal which she feels she must meet. Or, mother may not discuss the matter with her at all, leaving the child to draw her own erroneous conclusions. Either proceedure offords a psychic trauma which may stay with the child for her sex life.

Various forms of trauma may be manifested by symptom of pain with the menstrual flow.

Doederlein definetely states that undue repression of the sex instinct instigates dysmenorrhea. Coitus interrupts with its inevitable dissatisfaction on part of the wife acts as a sexual trauma. Masturbation can easily disturb the individual due to the fact that she associates this act as more-or-less of a sin. Many women who have had sexual experiences and then are placed in a position so that intercourse is impossible do very readily develope a severe dysmenorrhea. Many are disturbed because they can't have children, others because they never have an orgasm during intercourse.

Other trauma not definitely associated with the sex life of the individual quite frequently leads to dysmenorrhea. Such is seen in cases where great amounts of money are lost, property burns, relatives die, etc.

Patients are often times sympathy seekers. Women with unpleasant jobs and environment may develope a purely psychic dysmenorrhea in order to get attention and sympathy. Others may malinger in order to avoid unpleasant duties, such as washing dishes, cleaning house, etc.

There is also a dysmenorrhea due to hyper-

initability of the individual's nervous system, that is to say, the patient has a low pain threshold. A weak, poorly nourished women may react to the stress of a normal menses with a pain which she actually does suffer. This hyper-irritability involves Frankenhauser's plexus which lies on either side of the cervix and gives rise to considerable pain with the period.

Controversy over the extent of psychic dysmenorrhea is found throughout the literature. Novak and Harnik report 168 cases of dysmenorrhea which they diagnosed as psychic and proved it by curing 71 and causing considerable improvement in 89 by use of psych-therapy alone. As the rest of a questionaire it was found that 161 gynecologists claimed it as being frequent, 109 as infrequent, 37 as not existing and 12 as part of the nervous hypersensitiveness. Several German gynecologists go so far as to believe all cases of dysmenorrhea are psychic. This is seemingly in error since we do see severe dysmenorrhea in stolid as well as neurotic women. It is however, undeniable that many of our patients do suffer and complain of a dysmenorrhea which is truly psychic in origin.

The endocrine theory of the etiology of dysmenorrhea is the most plausible explanation of the condition. Even though it is still more-or-less in its infancy it is already demonstrable that valuble information will be had from the investigations that are going on at the present time. For a more complete understanding of the part played by the endocrines in dysmenorrhea we must look to the future.

At the present time we assume that all of the endocrines are closely related in function depending upon each other to do what each gland alone can not do. It may be well to give a very brief resume of the part played by each of the glands in relation to the menstrual function.

Pituitary:-Anterior lobe secretes prolan A which stimulates the follicle cells of the ovary to produce folliculin or theolin which causes hypertroply of endometrium and increase muscular contraction. Prolan B also from anbius pituitary counteracts prolan A and decreases the muscular action by stimulating corpus lutium to produce progectin. Posterior lobe secretes an alpha hypophamin which is a vaso-depressin and therefore causes rise in blood pressure. Beta hypopliamin is an oxytoxin stim-

ulating uterine contractions.

Thymus:- Has to do with developement of genitalia.

Mammary:- Function is lactation and also regulates ovaum activity.

Ovary:- Stimulates and regulates sexual development. Follicles produce hypertrophy of endometrium through its secretion. The lipamin which is present in the early corpus lubium stimulates the hypertrophic changes in the endometrium in the premenstrual change. Luteolipoid: Inhibits menses, present during retrogression of the corpus lutium. The function of the interstitial cells is unknown.

Thyroid:- Has to do with the growth and development of the genitalia.

Having reviewed the normal funtion of the glands we may hurredly discuss the various pathological conditions of these glands which cause dysmenorrhea.

Pituitary:- An increase in the secretion of prolan A would cause an increase of hypertropby of the mucous membrane, resulting in a congestive dysmenorrhea. There would also be an increase in uterine mobility with cramping pains with the period. A decreased secretion of prolan B would result in the

same condition.

Thymus:- Hyperactivity causes infantalism and sexual immaturity. Hypoactivity results in precocions sex developement.

Mammary:- Hyperactivity causes ammenorrhea. Hypoactivity may lead to menorrhagia.

Ovary:- Hyperactivity leads metarrhagia, menorrhagia, and dysmenorrhea. It brings on a vagotnia with resulting uterine cramps since Frankenhauser's plexus is ruled by avarian secretion. Any toxicosis of the ovary tends to decrease the coagulation time of the blood causing clots to form in the uterus. Fellner points out that defective corpuslutium does the same. Graul claims that a defective tryptic ferment action may cause fibrinogen to be increased in blood with clot formation in utrus as the result.

Thyroid:- Most thyroid pathology is associated with dysmenorrhea, intesostitial thyrotoxicosis being exceptionally so as will be seen later. On the other hand many dysmenorrhea patients show some abnormality with their throid function. This is usually not obvious to clinical observations but is detectable through the B. M. R. Of a series of 40

cases 22 had an increase of B. M. R. One series of 100 goitre patients showed 26 had dysmenorrhea.

Interstitial throtoxicosis is a pluri-glandular affection with thyroid manifestations. The dysmenorrhea symptoms are relieved when the condition is properly treated.

The most recent work done on the endocrine theory is that by Novak and Reynolds. The follicle cells of the ovary are stinulated to produce folliculin by prolan A from the anterior pituitary. Folliculin stimulates hypertrophy of the endometrium and causes muscular contraction in the uterus. Prolan B was formerly thought to stimulate the corpus lutium to produce progestim but these men show that it acts directly upon the uterus to counteract the muscle stimulating power of prolan A. Progestin inhibits muscular activity to a minimum from time of ovulation up to immediately before the flow starts at which time it is withdrawn.

Novak and Reynolds found that during the periods there was excessive muscular activity and that between the periods there was a minimum activity. This information was gained by hooking up a kymeograph to a baloon in either uterus of a rabbit through an abdominal vaginal fistula. A short time

after castration there was no activity proving that prolan A works on the follicle cells first. Theolin given to a castrated rabbit excites uterine contraction. That prolan B acts directly on the uterus is shown by giving a castrated animal theolin and observing the contractions. Then inject prolan B and contraction stops. The urine of a pregnant woman is thought to contain prolan B because it causes the same phenomena.

Following their experiment these authorities believe that dysmenorrhea is due to an inbalance between progestin and theolin. This is the laterl work on endocrine dysmenorrhea and subsequent discoveries which are bound to follow should prove interesting.

I N C I D E N C E

The incidence of dysmenorrhea as it is quoted by different investigators varies considerably. This paper will include reports showing dysmenorrhea occuring in as low as 7% of women and on the other hand as high at 77%. It is undoubtedly obvious that a gross error has been made. These marked differences in opinion of the incidence of dysmenorrhea are most likely due to the conditions under which the information was obtained.

Several sets of stastistics presented in the literature have been collected from the doctor's office practice. It is needless to say that the incidence of dysmenorrhea will be higher in these women than in the average rank and file. Many of them are coming to the doctor with this as the foremost complaint in their mind. Certain groups of women coming for other complaints may give a positive answer to any question regarding their menstrual functions, this being true in the large group of women who think that they have achieved moral victory by unloading their immaginary troubles upon their doctor.

Investigations held in the numerous industries would naturally tend to give a percentage of incidence lower than actually exists simply because the women fear dismissal from their jobs. Whether or not the number of these women would be large enough to give an appreciable error is questionable, but highly possible. Stastistics compiled on the number of days lost and number of visits to rest rooms on account of dysmenorrhea also are very questionable for the same reason.

The most valuable estimation of the incidence of dysmenorrhea probably is that set forth by the women investigators in the various colleges and nurses' training schools. In these institutions it is possible to observe the girl's everyday life. She has less chance of leading the investigators astray with erroneous answers in either direction, that is, either claiming a non-existing dysmenorrhea or denying the condition even though it be present. Another favorable point in these investigations is that they are made by women in most instances. It is quite easily conceivable how a girl would confide more in a doctor of her own sex. She does not set up a defensive mechanism prohibiting her from admitting the truth because she knows that the

doctor has the same measuring "rod" as she.

Again we must touch upon the meaning of the word dysmenorrhea as it is used by different men. It is unquestionably true that the incidence of dysmenorrhea will vary with the means in which the term is interpreted. Granting that the normal is a symptomless menstruation, that is without the slightest detectable discomfort, it is true that many women would fall into the dysmenorrheic class. On the other hand if we should choose to classify as dysmenorrheic only those women who are totally incapacitated for a definite period of time each month we would find this group to be considerably smaller. Therefore, it is inevitable that we should get considerable variation in the estimations of the number of women suffering with dysmenorrhea.

One of the earliest reports regarding the incidence of dysmenorrhea was published three quarters of a century ago by Beurre de Boisment in 1842. At that time after a review of 360 women the conclusion was drawn that 77% of all women noticed some subjective symptoms with each period. Five years later Jacobi stated that dysmenorrhea occured in 47% of the 128 patients that she quizzed. Two comparatively

recent reports substantiate Jacobi in the percentage of incidence. Sumes in 1916 tells us that after studying 4500 case records she finds dysmenorrhea in 47.4% of these patients. Holden reports a 47% incidence in 1000 patients at the Johns Hopins hospital, while Bell states 43% of 600 hospital patients were afflicted.

The interest shown by the various commercial institutions is of untold value to the medical profession. Many investigations are carried out in factories, department stores and offices employing large numbers of women. Margaret Sturges investigated 2077 working women in department stores and found 306 complaining of difficulties at time of period. This is a very low incidence being only 14.7% of the total. Only, 44, or 2.2% of these women complained of severe dysmenorrhea.

Riving made a series of observations from June to December 1929, at the home office of the Metropolitan Life Insurance Company. It was found that only 523 women, or about 7% of the total 7390 employed, suffered dysmenorrhea. It was also shown that 1151 days time were lost due to this condition and that 2670 trips were made to the rest room on account of it.

Bell found an incidence of 43% in 400 office women.

Most of the stastistics on the incidence of dysmenorrhea have been taken in schools and as the general rule by women doctors. Van Duyne reports an exceedingly interesting study over a 24 year period at Goucher college. The completed record include 3072 women students. From 1900 to 1907 she found that 62.6% suffered no symptoms whatso-ever; of the remaining 30.3% had slight dysmenorrhea and 7.1% had severe symptoms. The next series taken from 1917-1923 shoed 3% with severe dysmenorrhea, 23% slight, and 74% free of all symptoms. Then from 1923 to 1924 more decrease in the incidence was noticed. The normal being 86.6%, 13.1% slight and .03% severe dysmenorrhea. One hundred girls developed dysmen-orrhea while at the college.

Another interesting series of observations was made by Clow and Phillips. They studied 2052 school girls between the ages of 12 to 22 years. Seventy-eight percent of this number had no symptoms with menstruation. The remaining 22% complained of dysmenorrhea. They were classified into three groups; namely, slight, subacute and disabling. Those com-plaining of slight symptoms which did not interfere

with their daily routine numbered 17%. Those in the sub-acute class suffered to the extent that it was apparent to others but still not had enough to interfere with their daily routine. Three percent were incapacitated to greater or lesser degree with their period. Only 3 girls had had symptoms with their first few menstrual experiences.

Miller reports dysmenorrhea in 47% of 785 college girls examined by him in 1927. Those requiring rest in bed numbered 17%. Boynlm at the University of Minnesota made a survey of the menstrual function of 2282 girls finding 68.45% normal. Dysmenorrhea claimed 20.38% while 10.34% were irregular with their periods and .83% complained of amenorhea.

The stastistics presented in this chapter extend from one extreme to another. We might attempt a conclusion from all these reports and say that approximately 40% - 50% of women are subject to dysmenorrhea. This percentage was chosen because most of the investigations pointed to such

S Y M P T O M A T O L O G Y

The normal menstrual function in itself often gives rise to peculiar symptoms so it is not alarming that the symptomatology of dysmenorrhea is quite varied and interesting. Dysmenorrhea is only a symptom and not a definite disease entity, but is such a complex symptom that we discuss it as a disease. It is quite true however, even though it is only a symptom it has many symptoms associated with it.

Since dysmenorrhea means painful menstruation it is quite proper that we discuss the symptom of pain first. The spasmodic pain makes its appearance shortly before or along with the appearance of the flow. It is characterized by definite cramping pains lasting 1 to 2 minutes with a definite time interval between pains. They may begin early as an ache and gradually increase in severity to reach their height shortly before the flow becomes real free. It is then that the pain may gradually fade away to a dull soreness or suddenly cease altogether. The pain is similar to that caused by any smooth muscle contracting violently. The congestive pain begins days before the flow and may continue or be relieved with onset of period. It is a dragging

dull ache extending around back and down the thigh.

The pain also varies in duration. Statistics reveal that 76% of dysmenorrhea patients have low cramping pains, 18% have bearing down pains, 3% have backache and the remainder have pain elsewhere in the pelvis. Many times it follows around the itene-crust to the low back & then radiates down the thigh. About 84% of dysmenorrhea pain starts before the flow and 76% stops in 4 hours after onset and 91% after 12 hours. The pains described by dysmenorrhea patients vary widely and each case may be said to be a type of its own.

The next symptom is that concerning the flow. Normal women discharge 2 to 8 ounces of material with each flow. This is a marked variation to be quoted as a normal. Dysmenorrhea due to hyper-activity of the ovary shows an increase in amount of flow while the opposite is true in decreased ovarian secretion. Any imbalance of the theolin progestin ratio changes the amount of flow accordingly. In all dysmenorrhea cases the lochia contains solid particles of tissue. In extreme cases as membranous dysmenorrhea we find a part or all of the endometrium. In a series of 526 dysmenorrhea

patients 190 or 36% had dysmenorrhea.

Those patients suffering with spasmodic dysmenorrhea are usually young girls and nulliporous women. They are characterized by the spasmodic triad; 1 dysmenorrhea, 2. scanty flow; 3 sterility. These patients are most often very anemic and listless.

There are many general symptoms and findings in dysmenorrheic women. Jacobi in 1847 stated that 36 1/3% of women without dysmenorrhea had poor health while 61% of women with this complaint have poor health. Boynton made an interesting study on 2282 University girls and concluded 24.14% of girls with blood pressure of 109 mg. of Hg or lower had dysmenorrhea while only 11.75% with a blood pressure of 130 or lower had dysmenorrhea. Most of those women that were 10% underweight suffered with dysmenorrhea. If the hemoglobin is below 69% the dysmenorrhea incidence increases. Better posture decreases dysmenorrhea but Miller says this is due to improvement in muscle tone. Many women suffer a mild shock with each period and are found to have a thin rapid pulse, pallor, cold sweat, and a temporary mental confusion.

The psychic symptomatology in connection with dysmenorrhea is too voluminous to attempt to discuss,

suffice it to say that it does exist. It is however, a notorious fact that most crimes commited by women are done during the menstrual period.

Dysmenorrhea due to hypersecretion of the ovary is characterized by a vagatonia which brings on a drop of blood pressure and decrease metabolism while the sugar tolerance is increased. The pain in these cases is congestive in character and therefore, is accompanied by dull headaches, generalized tiredness, nausea and nervousness.

Dysmenorrhea is not infrequently seen in association with the allergic phenomena. These patients have their regular allergic symptomatology and a disturbance of menstruation. They have dysmenorrhea, mucoid vaginal discharge and irregularity in their periods.

Dysmenorrhea has also been observed in women with chronic appendices. They have the usual right lower quadrant pain, nausea, fever, etc. accompanied by painful menstruation. Removal of the appendix quite frequently results in relief of the dysmenorrhea.

Nasal dysmenorrhea is not at all uncommon. The cases show a nasal pathology, usually a tumifaction of the genital spot. This spot is found at the

anterior end of the inferior turbinate and also at the small tubercle of the septum. These spots become swollen and very sensitive during period and are point of severe nasal hemorrhage with the period in some cases.

Hypoplastic dysmenorrhea is usually a spasmodic pain. These patients present a multiplicity of secondary symptoms. They fatifue easily and at the time of the period they are almost apathetic. Gastric symptoms of anonhexia and indigestion are quite common. They complain of headache during the period. Nervousness and neuritis are common symptoms. The majority of these women are sterile. They are almost universally known to have a low blood pressure and low B. M. R.

Patients with hypoplastic dysmenorrhea are divided into two clinical groups, the old maid and masculine types.

Old Maid Type:- They are thin, flat chested women with long necks, bent spins, poor musculature, poor breasts, small genitalia, infantalism, small heart and thin vessels. Often times there is a congenital descent of the uterus.

Masculine:- They are well developed, well

nourished women with infantalism small genitalia and ovaries. They have broad shoulders and narrow hips, that is, their form very closely similates the masculine form.

As has been said the symptomatology of dysmenorrhea varies but the ever present symptoms is the pain itself.

T R E A T M E N T

The proper mode of treatment of dysmenorrhea is to date somewhat of a question. With the advent of each new theory in regards the etiology there is necessarily an accompanying treatment supposedly specific for that type of dysmenorrhea. It is obvious that the treatment of dysmenorrhea is divided into two types namely, palliative and curative.

Dysmenorrhea caused by obstruction somewhere along the canal has been quite actively attacked for centuries. The treatment briefly consists of dilating the cervical canal so as to facilitate a freer flow of the menses. Those people who do not recognize such a condition explain the incidence of menses by saying that it is a psychic reaction after having had a surgical procedure performed. Others say that the relief may be due to tearing of the nerves from the cervical ganglion.

Infantile and poorly developed uterus cause dysmenorrhea by obstructing the flow. Severe infantalism prevents the patient from ever becoming pregnant and for this reason it is advocated that a hysterectionary would be indicated to relieve these cases. Three methods of treatment of underdeveloped uteri causing dysmenorrhea are recognized,

1. dilatation and pachiry the cervix; 2. plastic cervical operations to be described later; 3. hysterectomy especially in women on 30. It is interesting to note that attempts have been made to releive dysmenorrhea by inflating the tube with carbon dioxide gas. The only cases relieved are those in which the cervix must be dilated to insert the canulas, the relief being due to the dilatation and not to any specific affect of the gas on the fallopian tube.

Several operative attacks upon the cervix have been designed and tried. Dr. Weiss in 1826 dilated the cervix with bougies with fairly good results. Dudley in 1891 and Pozzi in 1907 split the posterior lip of the cervix up to but not including the internal ass. Hayword Smith in 1890 dilated the cervix to Hegri 12 and then did a bilateral split on cervix and inserted a stem pessary. Walkin in 1924 reported 25% cures using a stem pessary alone. Cleland, of Toronto, developed the following operation in 1923. Her carefully dilated the cervix as far as possible with a Hegar bougie. Then he did a bilateral incision of the internal ass so that the cervix would allow passage of a Hegar 15. This was followed by packing with iodoforn gauze and removal of pack in eight days.

He found that out of 175 cases so treated that 138 were cured, 29 had partial relief and 8 with no relief. Two of these were relieved later on with full incision of the internal ass.

There is a place in the treatment of dysmenorrhea for such attacks upon the cervix but it is undeniably true that it has been over worked to such a degree that many men refuse to recognize its true value.

Physicians in the past have failed to appreciate the value of good body and mental hygiene and exercises. We have recognized a dysmenorrhea due to congestion in the pelvis, therefore it is obvious that we should relieve this congestion. This may be accomplished by cathoisis before the period either in the form of a milk laxative 36 hours before the expected onset or a Mg SO4 purge the day before. Congestion is oftentimes the result of a sedentary life and various exercises are advised in such cases. Bathing during the period has long been looked down upon by the laity. It is suprising the number of women who do not bathe during this time. A bath for 10 to 15 minutes of 100° F. tends to increase circulation and relieve congestion. The same may be

accomplished by hot douches during the period.

Various exercises have been divised and we may enumerate a few that should be done ten times twice a day.

1. Stand down on hands and knees and go through the motions of polishing the floor.

2. Stand feet apart, hands over head, bend over.

3. Stand feet apart and twist trunk.

4. Lie on the floor and rise touching toes with fingers.

5. Pick up several (20) beans off of floor and place them over head on a shelf.

In a series of 2300 girls following the above treatment only six complained of discomfort on exertion during period. Those cured of dysmenorrhea numbered 400. Fourteen were made worse by these exercises but 3 of them improved later on. Another exercise of untold value is to lie on the floor knees flexed and contract belly muscles twenty times at rate of five per minute. Also contract and expand perineal muscle the same.

Many men give a general tonic such as I. Q. S. two or three days before the period. It is also imperative that the patient has a balanced wholesome diet with abundance of fresh air.

Since children may develop hyproplasin on basis of childhood diseases as has been shown we should prevent such by taking especially good care of our pre-adolescent girls. They should be properly fed, given sufficient exercise and not pushed through school so fast as to sap their strength through a mental outlet.

The good done by proper hygiene and exercise is sufficient that such should be closely checked in each case of dysmenorrhea.

The medical treatment as is used in many cases is merely palliative. It is designed to give temporary relief. The use of morphine and alcohol has almost been universally discontinued due to the habit forming effect of these drugs. Many of the coal tar products are freely used to relieve pain. Aspirin is so widely used that at the present time almost all women who have any discomfort with their periods carry them all the time. Patients not relieved by this mild medication may be relieved by use of codiene 1/2 to 1 gr. twice a day. Atropine sulphate has long been a drug of choice to relieve the uterine spasm. It is administered in doses of 1/120 ~~gram~~ grain every 4 hours for one to several days before

the onset of menstruation.

Irradiation in cases of ovarian disorders has shown fairly good results in the treatment of dysmenorrhea. A series of 29 cases reported with inodiatim to ovary in 3, to pituitary in 7 and to both in 19 shows the following results. Irradiation was applied twice in 10 cases, 3 to 7 months later, three times to one patient at 6 and 3 month intervals, and 6 times to two patients over a period of 2½ to 3 years. The minimal exposure was used in these cases, Ovarian irradiation consisted of applying 15-20% of the erythema dose of short rays over 8 to 10 sq. cm. of the abdomen, and in the pitiutary inodiatim over an area 5 x 5 cm.

The results were fairly gratifying. One case was not traced; two had immediate relief but not followed; ten had no relief, one had relief of headache alone; one had regular interval and length of flow after treatment, sixteen had relief either complete or partial. The great objection to the use of irradiation in ovarian disorders is that it leads to early atrophy of the ovary.

Polak uses 50 mfms. of radium in the cervix for four hours. He believes that, "There is always

a lesion, elusive as this maybe either in the endometrium or uterine wall." He reports 36 cases cured but there is a possibility that the cure was due to dilstatim of the cervix.

The treatment of neurotic dysmenorrhea is probably more difficult than any other type. The gynecologist must be somewhat of a psychiatrist. It is undoubtedly better fo the gynecologist to handle the situation rather than shift it off to a psychiatrist. The treatment of such cases should begin with a thorough examination of the individual with all the finesse it is possible to put up. Then real psychotherapy should be employed. Give the patient a liberal sex education; attempt to find the root of her trouble. This subject is too large to allow detail discussion suffice it to say that psychotherapy does cure patients. In a series of 168 cases, 71 were cured and 89 greatly improved by psycho therapy.

The treatment of the miscellaneous group of dysmenorrhea is merely the treatment of the underlying condition, such being the case where dysmenorrhea is associated with allergy, appendicitis, diabetes, all thyroid disease, especially intesti-

-tial thyrotox icosis. Nasal dysmenorrhea may be quite satisfactorally treated by application of 20% cocaine to the genital spot. A series of such treatment shows it to be effective in 60 cases and ineffective in 76 cases. Dysmenorrhea has been relieved by cauterization of a cervix which badly inflamed and discharging. This is because it stops the discharge from irritating the ends of the nerves of the cervical ganglion.

Attempts have been made to relieve dysmenorrhea by attacking the sympathetic nerves connected with the cervical ganglion. Blos reports relief in 24 cases in which he injected 2 - 10 c c of 70% alcohol into the servical ganglion. Resection of the nerves along the hypogastic artery has been reported as giving good results. Cotte reports five patients cured for 10-14 months by such an operation. This mode of treatment however, does not seem to be in the favor of American Gynecologists and most of the work reported has been done by Europeans.

The treatment of dysmenorrhea by use of the endocrines is a more or less recent development and for that reason no definite conclusions have been reached regarding its efficieny. Probably the most

and Co. called Antuitain S. Its action is that of progestim in that it counteracts the action of theolin. It is given in doses of 200 to 400 units the week before menstruation.

Assuming, as do Novak and Reynolds, that dysmenorrhea is due to an endocrine imbalance we should then attempt to regulate this situation by use of our two drugs Antuitrin S. and theolin. The last word has not been spoken however in the endocrine treatment of dysmenorrhea.

commonly used preparation are the mixed gland tablets put out by practically every drug house. They seem to work very satisfactorily as can be seen in case report No. 5. A combination of thyroid extract and ovarium extract in tablet form with dosages of ½ gr. and gr V respectively is put out by the Burroughs Welcome drug company and is known as Thyrovarium. A report has been made stating an 80% cure by use of this one of these while in conjunction with 2 grs. of pituitary extract twice a day for two weeks before the period.

Progynon, a preparation similar to theolin with the same action has been used to good advantage in the treatment of dysmenorrhea due to hypo-activity of the ovary. Methods of administration varies with the individual case but it is usually given for a week or ten days before the period. Case report number 4 issustrates the effect of progynon. Theolin and ocstrin have been used also in ovarian hypo-activity one ampule of theolin is used two times a week before the period with fairly good results.

Hyperactivity may be regulated by the use of the comparatively new product put out by Parke-Davis

CASE REPORTS

Case No. 1 (19)

Miss G. M. age 24 Student

Patient consulted the doctor complaining of severe cramps of 3 days duration at menses and a profane vaginal discharge.

Menstrual History:-

Onset at age 11 years.

Always irregular, periods being from 24-35 days apart.

Periods last 3 - 5 days.

Always cramped and periods always had vaginal discharge.

Necessary to go to bed 1-3 days each month.

Examination:

Patient underdeveloped, undernourished and of poor musculature.

Scratch skin tests gave positive reaction to wheat, beans, cabbage and cauliflower; milk questionable.

Treatment:

Advised to omit above mentioned foods from diet.

Patient was free of pain for next two periods.

Dysmenorrhea reproduced in the third month by eating freely of wheat and milk.

This is an example of dysmenorrhea being cured by treatment of a co-existing condition in which its etiology most likely lies.

Case No. 2 (26)

Student nurse, single, age 20 years giving a history of a similar attack eight months ago was operated for subacute appendicites on October 1923. Appendix was found to be grossly abnormal. This patient had suffered nausea and vomiting with her periods. She has not had a recurrence of such symptoms for past 3½ years.

Case No 3 (38)

Mrs. E., age 40, came to Ashland State Hospital, May 14, 1924, her chief complaint being the passing of a fleshy mass at menstruation, which she has been observing for the last year. The fleshlike mass escaped about the seventh day of her periods, which were quite regular. She also complained of a great loss in weight, and frequent urgent urination. Examination of the blood showed the sugar content to be 0.25 mgm. The urine also contained sugar. The patient was placed on a diet and in a week was sugar free. Since she has been sugar free, she has had no menstrual disorder.

The mass passed at menstruation appeared to be a complete cast of the endometrium. Microscopic examination showed the cells to be of type found in the endometrium.

Pelvic examination was negative.

This is an interesting and rare case of membranous dysmenorrhea in connection with diabetes.

Case No. 4 (17)

Mrs. R. S., age 33, presented herself for r relief from severe attacks of dysmenorrhea on Febr. 25, 1930. Her menses began at age 14, and continued regularly every twenty-eight days until age of seventeen. The flow was of moderate amount and lasted four to five days. Her menstruation then became irregular and was accompanied by severe cramp like pains over lower abdomen and severe nausea and vomiting, lasting the entire period of menstruation. During this time she was unable to take nourishment of any kind except water which she vomited.

She was treated, with some relief, for a time with corpus luteium injections. In May 1919, at age 21, she was found to have a retrovession and a suspension was done. This gave relief of pain but nausea and vomiting persisted. In one year the pain returned.

She suffered with these symptoms for three years and was then given wome relief for two years with corpus lutium tablets. The pain then returned more severe than ever.

Another surgeon then found uterus slightly displaced and advised operation in effort to induce pregnancy. She refused. Later relieved with corpus luteium injections for two years.

In February, 1930, she consulted Dr. Hacker, who reported the case. Uterus was in good position but

slightly infantile. Her flow was scant, but lasted five days. Relieved during attacks with morphine and atropine only. He then tried progynon (Allen-Doisy) which was at that time a new sex hormone. She took 500 units ten days before period without any success.

The next month she was given 1000 units. Her nose was cocainized daily 3 days before the period. She was given luminal one quarter grain every third hour.

The patients condition improved after the third month. All symptoms were entirely relieved at end of fourth month and have continued as such since. Eocainization of nose was discontinued after the fourth month and the luminal about four months later.

This examplifies the value of endocrine therapy to set up a balance of theolin progistim ratio.

Case No 5

Miss D. B., age eighteen years, virgin. Complains of cramp like pains first two days of menstruation. Menses began at fifteen, every four weeks, of three to four days' duration. Patient normally developed. Labia minora enlarged.

Rectal examination shows uterus somewhat hard, and slightly retroflexed.

Mixed glands given. Dysmenorrhea first month markedly relieved. Second month mixed glands started six days before menstruation. Menstruated without pain. Third month, mixed glands given two days before menstruation. Menstruated without pain.

Rectal examination shows uterus somewhat larger and softer.

This case shows the immediate relief possible with the use of mixed gland products.

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