

Menstrual Molimina.

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“EVEN in health some degree of fulness and of general lassitude is usually felt just before and for the first two or three days of the period.”—GALABIN.

“All women, even while enjoying good health, feel unwell—as they themselves call it—at the menstrual period.”—*System of Gynæcology*, edited by CLIFFORD ALLBUTT.

These two statements give the opinion held by the writers of most of the text-books of gynæcology. This opinion then is widely spread and appears based on good authority.

The writer of this paper, while investigating the health of a large number of girls of the middle classes, was struck by the number of girls who, having commenced to menstruate, disclaimed any disturbance at the menstrual period.

The belief in the constant association of menstruation with pain and discomfort may often be responsible for the neglect of minor ailments and sometimes for the neglect of the early symptoms of major ones.

It therefore appears that an enquiry into the nature and extent of menstrual disturbance in girlhood should be useful. Particularly will this be so if the results are compared with the statistics obtained from adult women. In this way one may learn if menstrual disturbance is constant or if it increases.

If the disturbance among girls in whom menstruation is establishing itself is absent, it is fair to conclude that the connection between menstruation and pelvic or general disturbance is not inevitable.

If the disturbance is greater among adults it is fair to conclude this is due to some later developed pathological condition.

An inquiry into the circumstances of the affected cases may also show the possible causes of the development of pain.

When so many women have to work for their maintenance it is important that the facts of their capacity or incapacity for work should be known and that anything which may regularly impair their full fitness for work should be corrected if possible.

Before it was known by careful scientific observation that menstruation was accompanied, or rather preceded, by a gradual rise of temperature and an increased output of urea, calcium and glycogen—that is, before it was known that menstruation was part of a general metabolic change, various phenomena were recognized as

frequently accompanying that function. Authors writing on the subject expressed themselves as in the two quotations given above. Kelly, in his *Medical Gynecology*, says: "Entire absence of suffering is indeed so unusual that text-books of gynecology all devote some space to what is called menstrual molimina—that is to say, those general and local disturbances which it is assumed most habitually attend menstruation."

Croom describes the disturbances thus: "They experience some pelvic discomfort or inconvenience associated with general malaise; some indefinite pains in the back or loins and a certain irritability of temper; that a woman should not be thus affected would be almost abnormal."

Stanley Hall gives a wonderful and amazing description of the emotions and mental attitude of the woman so affected: the experience of women in this country from whom information has been sought leads one to believe that the American woman he describes must be very different from the English one.

That there should be definite and frequent statements made about menstrual disturbance show that pain, headache, tiredness, pelvic congestion and the other symptoms which are described, are frequently met with.

It is, however, a fact that it is the general rule for such disturbances to occur, and is it inevitable that pain and discomfort should attend menstruation?

An enquiry into the symptoms accompanying menstruation presents many difficulties.

It is, first of all, necessary that the enquiries should be made among large numbers of healthy women. It is obviously useless to try and collect such information from hospital patients—more particularly from patients suffering from gynecological abnormalities.

Information from healthy women, especially young women and girls, is not easy to collect. The subject is one which is naturally treated with great reticence.

The difficulty of gaining exact information is increased by the lack of a standard by which various cases can be compared. In such cases the personal index is an important factor. No one but the sufferers can estimate the amount of pain. The same amount of pain may prostrate one person which another may bear whilst pursuing her normal life. Where, however, discomfort is stated not to exist, this factor can scarcely be said to affect the comparison.

Further, we have to consider the effect of the generally accepted idea that suffering at such times is normal. Such an assumption may have the force of suggestion in making a woman feel more indisposed than she would otherwise be. Or again, may tend to make her consider any temporary indisposition to be due to co-

existing menstruation. The tendency is to blame any indisposition, malaise, sickness, headache in the preceding days, the days of the period and sometimes for a day or two afterwards, to menstrual disturbances. Where menstruation takes almost a week there is but little time, comparatively speaking, during which disturbances cannot be assigned to the effects of menstruation. It is stated that menstrual disturbances are unknown among savages.

The writer has had the opportunity of making enquiries from several hundred girls, socially of middle-class life, who were being medically examined according to the routine of their school. Their ages varied from ten years old to twenty. Of these girls, the records of five hundred who have commenced menstrual life have been analyzed, and appear in the accompanying tables. The cases were not selected, but taken consecutively.

The object of the investigation was to ascertain—

- (1) The amount of conscious menstrual disturbance.
- (2) The nature of the disturbance.
- (3) If possible the cause of the disturbance.

The girls were asked—

- (1) The age at which they commenced to menstruate.
- (2) The periodicity and regularity of the flow.
- (3) The number of days the flow lasted.
- (4) The presence of pain, headache or other disturbance.
- (5) The position of pain, if present.
- (6) The intensity and character of the pain.
- (7) The time the pain lasted.
- (8) Whether the flow was unduly profuse.

The girls answered the questions put to them freely, clearly and without hesitation. Care was taken in making the enquiries to ask no leading questions. If, however, pain or other inconvenience was denied, a further enquiry as to the presence of tiredness or headache was made. In this way it was hoped to get as accurate an account as possible, without causing morbid interest in the function among the girls themselves.

Stanley Hall, in commenting on similar enquiries made in America, says, "that the girl knows well if she confesses pain or ill-health it may contribute to increase the prejudice against the cause of education which she has dearly at heart, and normally is as reluctant to confess illness as a boy is to confess to muscular weakness." He is here, however, speaking of college women. There is no reason to suppose the girls examined by the writer had any wish to make light of any aches or pains which they might suffer. Every opportunity is given by the school authorities for rest at home for a day or two, or even longer, during the period time, if it is necessary,

and no stigma whatever attaches to them for abstinence from drill or games at such times. The impression of the investigator is that any disturbance was freely and naturally mentioned.

When the tables were drawn up attention was directed to the abnormalities which might be expected in a function which was establishing itself, viz. :—

- (1) Regularity of the flow.
- (2) Disturbance caused by the flow.

Regularity.

It is undoubtedly a fact, as has already been stated, that a very large number of cases begin with a slight irregularity. That is, the flow will appear, and the next time will be two months or six weeks later, or the flow may be irregular for a few months, or even absent completely for some months. But that this irregularity does not last long is shown by the comparatively small number of girls who stated they were irregular: $81=16.2$ per cent. The regularity of the function is quickly established. That is, it is established within certain limits. Very few ($33=6.6$ per cent.) of the girls could definitely say how long an interval elapsed from the beginning of one period to the beginning of another. Probably this ignorance is due to a wholesome lack of curiosity about the matter.

General Discomfort and Pain Accompanying Menstruation.

The incidence of pain of any kind accompanying menstruation in the girls examined is interesting, in the numbers not affected by pain or discomfort, and in the manner in which those who were so affected suffered.

In 293 cases, *i.e.*, 58.6 per cent., there was *no disturbance* of any kind admitted.

If we add to these the cases of 14.4 per cent. of only *slight* and *occasional pain*, and 19.2 per cent. of *such slight pain*, as can only be described as little more than discomfort and which never interrupts work at all, it is evident that normal menstruation in young girls is accompanied by slight, if any, pain.

The cases of *severe pain* lasting for periods of time from a few hours to two or three days were $39=7.8$ per cent. In *nine* of these cases the pain, occasionally or always, was *incapacitating* for one or more days.

These figures are much more favourable than those of Giles. He gives 35 per cent. with no pain, 36 per cent. with little pain, and 29 per cent. with severe pain. He states that his figures are taken from the early years of menstruation, but he does not state the

social class of the girls or whether he takes his cases from hospital cases or healthy women.

A comparison of the different situation of the pain helps the elucidation of the question of what most frequently causes the pain in young, healthy, normal girls in comfortable circumstances.

The pain, where its situation was definite enough to specify—*i.e.*, was greater than a vague aching around the pelvis—was found in the following situations:—

Abdomen	74=35% of cases of pain.
Back	13=6·3% „ „
Back and front	13=6·3% „ „
Back and hips	1
Hips	5
Groins	4
Groins and left side	2
Left iliac fossa	2
Iliac crest	2
Left side	3
Legs, back and side	1
Headache	10
Head and abdomen	4
Abdomen and breast	1
Side	1
Vomiting was present in	4
Faintness „	1

Indefinite pain and aching, mostly slight discomfort in pelvis, 32 per cent.

This table of where the pain was felt may well be supplemented by another, showing how long the pain lasted where definite time was given:—

<i>Time pain lasts.</i>	<i>No. of Cases.</i>
Indefinite time before	22
Indefinite time before and first day or first hours	4
Indefinite time before and first and second day ...	1
One hour	4
Few hours	15
First day	72
First two days	27
Second day	5
First three days	6
Third day	1
Last day	1
First and last	1
Middle days	2

It is evident from the situation of the pain that menstrual disturbances are of two classes—

(a) Cases where the disturbance is due to the general metabolic changes of which menstruation is only one manifestation. Such cases seem principally of vasomotor origin or at any rate to be largely affections caused by abnormalities of the nervous system, and particularly of the sympathetic nervous system. Such are the cases of headache, vomiting, sickness, irritability, mental emotion.

(b) Cases where the disturbance or pain is referred to the pelvis. Local pain, felt in organs of whose action under ordinary conditions the individual is unconscious, is due to (a) undue compression of nerve terminations, such as we get in the congestion of an inflammation; (b) to an exaggeration of the normal muscular or functional activity, as in palpitation, peristalsis or labour pains; or (c) it is caused by an excited or excitable condition of the central nervous system, which causes a normal stimulus or sensation to be felt in an exaggerated degree.

(a) *General Disturbance.*

It is clear from the table that the girls do not frequently complain of the general symptoms of headache, vomiting, faintness. They will seldom suggest they feel general lassitude. None complained of melancholia or irritability of temper. One mother, herself highly neurotic, stated that her daughter was at these times hysterically inclined. The daughter—it is fair to add—denied any such emotion.

One of the cases since the list was compiled suffered from amenorrhœa, and developed marked melancholic symptoms. Dr. Shiela Ross, in a communication to the *Journal of Mental Science*, April 1909, has pointed out the connection in mental cases of amenorrhœa, with those forms of mental disease where physical ill-health is most clearly shown, *i.e.*, melancholia, confusional insanity, acute delirious mania and general paralysis of the insane.

(b) *Local.*

The greater number of cases then complained of local rather than of general pain.

Local pain is either (1) aching in character, or (2) colicky.

As will be seen from the table, an aching abdominal discomfort felt between the umbilicus and pubes, but chiefly immediately below the umbilicus, was most common. The questioner was struck with the remarkable frequency with which girls, when questioned, instead of answering, put their hands in a central position just below the umbilicus. Such pain is probably due to uterine congestion. (See Head's figures of referred pain.)

Some few cases had pain in the sides and pain in the groins and down the legs. Such cases are probably due to general pelvic congestion.

Cervical pain is, according to Giles, referred to the back, and some cases where pain is in this position might be due to congestion round the cervix or to inco-ordinated action of uterus and cervix.

Local pain is caused by (1) congenital or developmental conditions of the local organs; (2) acquired condition of the local organs.

Developmental Abnormalities.

Rossi Doria considered that cases in which menstruation commenced very early or began late were associated with abnormalities of development. Abnormalities of development are supposed to be associated with menstrual disturbance.

With the exception of one early case, which began with pain at ten years of age, the age of commencement of those having no pain is spread over more years than either the age for those having slight or for those having severe pain. Therefore, whether or no late development is associated with abnormal pelvic organs, those commencing at sixteen and seventeen seemed more rather than less free from disturbance or pain.

That the large majority of menstrual disturbances cannot be due to abnormal development is clear on comparing the adult cases which I collected later, where it will be seen that a great many cases which develop pain do so some years after the commencement of menstruation. Therefore they must be due to some later developing condition.

Ovarian Causes.

As ovulation does not regularly occur at the time of menstruation, it is unlikely that, apart from the general pelvic condition in which they share, the ovaries are a general cause of menstrual pain. If they are prolapsed with menstrual congestion they may become painful, and the regular occurrence of pain every other month—of which complaint is sometimes made—can scarcely be caused otherwise than by ovulation in one ovary, which, for some reason, causes pain, occurring at alternating menstrual periods. It is likely also that the phenomena of *Mittelschmerz* or pain half way between the periods (of which no case occurred in the series under consideration) may be caused by ovulation occurring between the periods.

In one of the cases accompanied by severe—sometimes incapacitating—pain, which the writer had the opportunity of examining, a prolapsed large and tender ovary was the only abnormal symptom. It may be that the congestion accompanying menstruation was the ultimate factor in bursting the Graafian follicle in that case, and that in the prolapsed condition of the ovary this caused the pain.

Uterine Causes.

The consideration of the anatomy and anatomical surroundings of the uterus, a vascular organ richly supplied with tortuous vessels supported in its position largely by the perivascular tissue of numerous tortuous valveless vessels surrounded by nerve fibres shows the possibility of pain arising when the circulation is sluggish and when the changes coincident with such a sluggish circulation supervene: with the advent of the monthly congestion aching pain due to extra pressure in varicose vessels, would be expected, till relief comes with the menstrual flow.

Rhythmical Contractions.

The question whether rhythmical contractions of the uterus coming into consciousness cause menstrual pain is interesting. Cushny (quoted by Marshall) states that experiments show constant rhythmical contractions in the uteri of animals which have borne young, but in the virgin uterus there do not appear contractions unless a foreign body is present to stimulate them. Will normal menstruation cause such contractions, or will they only occur when there is narrowing or obstruction to the passage through the cervix?

Malposition.

Pain may be induced by malpositions (prolapse, retroversion, anteversion), by which the vessels may be kinked or where passive congestion may result. Here one would expect aching pain referred to the abdomen.

If, however, the congestion leads to a swelling of the internal mucosa it is possible that in cases of flexion there is obstruction at the internal os to the passage of blood outwards, and that an extra powerful contraction of the uterus becomes evident to the consciousness as pain. This pain will be of a spasmodic or colicky character. So in a small conical cervix, often found with anteflexed uterus, congestion possibly causes obstruction. This is denied by many gynæcologists, who find in the intermenstrual periods that a probe may readily be passed inside. But it seems possible that the congestion of menstruation may so obstruct the passage that it will require painful contractions to overcome the resistance, even where a hard mechanical instrument can be inserted readily in the uncongested condition when the uterus has been straightened by pulling on it with a volsellum. Or it may be that there is incoordination between the muscles of body and cervix through interference with the ganglia at the internal os. It is not inevitable for pain to occur in these cases of infantile anteflexed uteri, but it is frequently found that this condition is present in cases of spasmodic pain occurring regularly from the first menstruation.

Membranes and Clots.

Spasmodic pain, often of very severe character, is found associated with the passage of clots and membrane.

Croom denies the passage of true membrane, *i.e.*, casts or portions of casts of the uterus by the virgin uterus. This, however, is incorrect. Many virgin uteri extrude pieces of clot and membrane, and the writer has seen several cases where casts of the uterus were extruded, though none are included in the series presented. Several cases, however, of the passage of clots are included. As in some cases of ante flexion and narrow cervix pain is not present, so the passage of clots is not always painful. But this formation of clots does appear to assist in the development of pain in later years in cases of persistent profuse menstruation.

Profuseness of Flow.

Contrary to expectation was the small number of girls who suffered from profuse loss at the period. This one is accustomed to think of as one of the most common of early menstrual abnormalities. The cases met with in the consulting room are often overgrown, lanky, flabby, thin girls, who are very anæmic. Profuse menstruation one expects in weakly children. The uterus being so vascular an organ and one in which the muscular tissue is growing quickly, may have an abnormal disproportion between the muscular and fibrous tissue when menstruation commences. According to Dr. Clarke, the muscular tissue of the uterus increases from 52 per cent. at the time of the appearance of the permanent teeth to 62 per cent. at the age of fourteen. That is, there is an "increase of 19·2 per cent. in total bulk of muscle." That increase appears to be greatest at the time of puberty. Between fourteen and twenty-one there is a further increase of muscle tissue to 65 per cent. compared with fibrous tissue 35 per cent. It is evident that just at puberty the muscular development is exceptionally great. The musculature of the uterus controls the hæmorrhage by compressing the vessels. It is obvious that menorrhagia will result from deficiency of muscular tissue. Anæmia then follows if the condition is not watched, and a result is a further weakness in muscular power. Hence a vicious circle is formed.

Only 32 cases, *i.e.*, 6·4 per cent., had undue profuseness of flow. They were not, however, among the most delicate children in the school. In weight they compared well with the average child. They were always encouraged to stay at home during the first days of the period, and those who did so, and whom the writer was able to watch, generally were soon able to resume the usual course of attendance at school. A larger proportion of these girls than of others suffered from menstrual pain.

Such cases of profuse menstruation often begin painlessly and

develop pain later. Granted that the hæmorrhage commences because the vascular supply develops more quickly than the muscular and that the uterus does not contract quickly enough or firmly enough to control the hæmorrhage, each menstruation, unduly draining the system, causes a further weakening of uterine muscle, which becomes so feeble that it does not expel the blood till a clot is formed by the blood becoming unduly profuse for the alkaline uterine discharge. The uterus treats this as a foreign body, and contracts forcibly in order to get so large an obstruction through the cervix.

The nervous system also, as a result of the hæmorrhage, is more sensitive, and the resulting contraction is more severely felt than under normal circumstances. The pain adds to the nervous exhaustion and makes the patient more prone to feel pain next time, and thus a habit of pain is formed.

Further, profuse menstruation is often the result of small sub-mucous fibroids or pedunculated polypi, and these also may cause uterine pain of a spasmodic character.

Effect of General Health.

One would expect the more vigorous in health to be more free from menstrual disturbance than other girls.

Puberty is often spoken of as a period which is especially trying to the general physique.

The American gynæcologist particularly is anxious for the girl to have especially easy work during the developmental years, and often advises absence from school for a year or at least during the days of the period.

As a matter of personal experience one finds that it is much more usual for children who have been delicate suddenly to shoot up and develop into fine girls than for girls to become more fragile. Obviously there are exceptions who decidedly flag in health at this time. That puberty is seldom so disturbing to health as to cause absence from school is shown by the fact that during three years only 21 children, from a school containing 550 girls, were absent for a term or more because of any illness other than an infectious disease. Of these, three were absent for operations for appendicitis; one was away for chorea; seven were absent with chest or glandular mischief. This leaves ten children in three years who were absent during the years of adolescence for undefined reasons of health.

Even these absentees are probably not all due to the strain of adolescence. These statistics therefore appear to show how little ill-effect this transition phase causes, even under educational pressure, if that pressure is carefully supervised.

As far as could be done, an attempt was made to discover if statistics of menstrual disturbance varied with those of general

health. Body weight and the condition of the blood were conditions which could be exactly tested.

Chlorosis.

The records of two hundred girls who had their blood examined to discover the percentage of hæmoglobin present were examined. The blood was tested by means of Tallqvist's hæmoglobin scale. The test is not very fine, but gives a satisfactory result. The records showed that of the 23 cases which had under 80 per cent. of hæmoglobin, 13, *i.e.*, 56·5 per cent., suffered from some amount of discomfort. Four of these cases, or under a third, suffered severe pain. That is, the percentage of chlorotic girls with menstrual disturbance was higher than the general average.

Weight.

Further, the weight of the girls was tabulated according as they compared with the average weight of girls of their age as given in the Anthropometrical Societies' Tables of 1884. It was impossible to compare the actual weights as the ages varied. The cases were then collected into three sets, consisting of girls of under-weight, average weight and over-weight. Fifty per cent. of the girls were over-weight; 13 per cent. were exactly average weight; 37 per cent. were somewhat under-weight. Though as the weights were taken when the girls were clad only in dressing-gowns, and the above-mentioned tables are of children fully dressed, the figures are really even better than they appear.

When the percentage of those who suffered pain in these different classes was compared no marked difference was observable. There was one group of girls, however, which seems to show that excellence of physique and entire absence of disturbance are related. This group is the class known as the seniors. These girls, to the number of 64, have been observed for three years. They are girls between the ages of seventeen and nineteen, and they are the pick of the school physically and mentally. They appear year after year in their progress through the school on an average taller and heavier than children in classes doing corresponding work but not of so high a standard. In the year before they leave school, when examined for the last time, they are competing for scholarships and for school leaving exhibitions, and are subject to hard pressure. They, as a rule, individually and as a class, excel in games and gymnastic exercises. Of these girls, 29·6 per cent. only suffered any menstrual disturbance. Only three had pain which could be described as severe. One of these had only occasional pain lasting two or three hours, and the other two were the most delicate ones of the set—one anæmic, one with tubercular tendencies. None had incapacitating pain.

We may also infer from these girls that hard mental work under healthy conditions with plenty of opportunity for exercise does not affect the causation of pain.

Conclusions.

It therefore appears:

1. That the majority of girls commence menstruation painlessly.
2. That a number have discomfort, some occasionally, some regularly for a time varying from one hour to two days just before and with the commencement of the menstrual period. This discomfort is often slight in character.
3. That a few have more severe pain, either regularly or occasionally. A very small number, *i.e.*, 1·8 per cent., are incapacitated.
4. That a small number, *i.e.*, 1·2 per cent., have discomfort or pain for a longer period than one or two days during the whole time of menstruation.
5. That the discomfort in girls is most frequently local in character, and when there is serious general disturbance it is accompanied by severe local pain, and probably proceeds from some local abnormality congenital or acquired.
6. That the best developed girls appear less likely to have menstrual disturbance.
7. That this freedom from discomfort is not affected by hard mental work carried on under healthy conditions.

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