excess of endometrium which should have been removed by the disintegrating effect of menstruation. As the accumulation of menstrual decidua, due to ovarian disease, is generally a slow process, it may happen, in women approaching the menopause, that relief from symptoms after a single curetting lasts until the menstrual function comes to an end.

In many cases, however, and probably in most, the relief obtained by curetting is only temporary, not more than a few months. If serious haemorrhage recurs after a single curetting I believe hysterectomy should be performed. All due consideration has been given to the peculiar position of the uterus, and it should no longer be regarded as differing from a diseased appendix or gall-bladder. It should simply be regarded as a source of ill-health and perhaps danger, and should be removed. I would go further and say that, even apart from ill-health and danger, if her uterus has become a nuisance to a woman, on account of losses prolonged and severe enough to interfere with her enjoyment of life and with her career if she is in business, even though the general health may not be greatly affected, hysterectomy is justified if curetting has failed. I have no experience of radium in these patients, though I should be inclined to use it if hysterectomy is, for some reason, inadvisable. In parous women without gross enlargement of the uterus there is a good deal to be said for vaginal hysterectomy in this type of case. Though the operation is undoubtedly more difficult, I believe the shock is less, and the period of convalescence shorter.

In conclusion, I should like to refer again to Mr. Wilfred Shaw's valuable paper on uterine haemorrhage,¹ and especially to the section on metropathia haemorrhagica, and to criticize, not his findings, pathological or clinical, but certain of his deductions. He refers to the association of a polypoid condition of the endometrium with atrophic ovaries, one of which is generally cystic. He regards the hyperplasia of the endometrium as evidence of over-activity of the endometrium and the shrunken condition of the ovaries as evidence of diminished activity of the ovaries. He concludes that the polypoid endometrium reacts on the ovaries to produce an inhibition of follicle ripening, or of ovulation, or of full formation of the corpus luteum; the ovaries, in turn, responding by producing continuously a toxin, identical in type with that causing the disintegration of the premenstrual endometrium in normal menstruation. And he regards as proof of the inhibitory action of the polypoid endometrium the fact that, in some cases, curetting is followed by a return to normal menstruation.

In criticism of these findings I would say: (1) We have strong evidence that the ovaries control the uterus, but none at all that the uterus can influence the ovaries, or that the uterus has any action except to react to hormonal signals from the ovaries. (2) Hyperplasia of the endometrium is not evidence of activity of the endometrium. It is much more reasonably to be regarded as evidence of a defect in its response to ovarian signals, or, equally logically but more probably, a deficiency in the hormone itself, either in quality or in quantity. The thickening of the endometrium is, I maintain, to be regarded rather as a failure of premenstrual endometrium to be completely shed than as a true hypertrophy of endometrial tissue. (3) Curetting acts by removing the excess of endometrium, and in that way imitates the action of the corpus luteum, or of whatever hormone is responsible for disintegration. As normal ovulation may be possible in unaffected parts of an otherwise diseased ovary, menstruation may go on normally once the endometrium has been made smooth by the curette. (4) The size of the ovary is no criterion of the activity of the function of ovulation. The presence of a ripening follicle will ensure the first part

of the menstrual cycle—namely, the thickening of the endometrium. Incompleteness of ovulation—that is, failure or delay of the stage of corpus luteum formation—will be followed by incomplete disintegration, and consequent retention of degenerate endometrial cells. In some cases I believe this incompleteness of ovulation is due to the dense fibrous (keloid) covering of the ovary.

References to the connexion between pathological conditions of the ovary and menorrhagia are not infrequent in the literature; the earliest of which I am aware occurs in a paper by C. J. Bond,² in which the connexion is very convincingly established.

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² *Lancet*, April 7th, 1894.

THE INTERPRETATION OF PAIN IN INFANCY*

BY

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Of all the symptoms from which man suffers none is so insistent of recognition as pain, nor is any of greater value to the doctor in helping him to make a diagnosis. The adult is in the fortunate position of being able to give an accurate description of his pains, and to indicate their locality with sufficient precision. The young child, once he has acquired the power of conversation, can also tell us when he feels pain, although a fuller analysis may be beyond him, as, for example, when he complains of headache but localizes it at the umbilicus! Often in the baby the presence of pain can only be suspected after careful observation, and if a parent is convinced that a child is suffering in this way it is generally foolhardy of the doctor to cast such testimony aside. By taking a careful history, followed by an attentive watch and thorough examination of the infant, the characters of its pains and the site of their occurrence can be determined.

CHIEF EVIDENCES OF PAIN

The commonest effect of pain on a baby is to make him cry, and much help is to be gained from a study of the characters of this expression. Pain is by no means the only cause of a baby's crying; hunger, cold, a soiled napkin, or simply a state of boredom, are also contributory factors. It is not until the child exercises his will that crying due to temper makes its appearance; this is a cause which is exceptional in those under 6 months of age.

The features which should always be noted are whether the cry is intermittent or continuous, whether it is a piteous wailing or a short, sharp scream, and whether it occurs at any particular time of the day or night. Does it bear any relation to the times of feeding, being relieved or aggravated by food? Does it cease after the belching of a good deal of wind? The history may show that the pain only accompanies certain physiological performances such as sucking, micturition, or defaecation. Under the stress of severe pain the infant may not cry because he is holding his breath, as frequently happens in severe colic.

The baby's posture during the bouts of pain should be carefully noted. It may be that the hips are flexed to bring the thighs up on to the abdomen, while the arms may be bent, with the elbows firmly pressed against the sides. In other cases, the infant may become rigidly extended, with arched back, so that he supports himself

* Abstract of an address delivered before the Hampstead Division of the British Medical Association.

by his head and heels. Finally, on clinical examination there may be found areas of distinct tenderness associated with pain, indicating its localization.

GASTRO-INTESTINAL PAIN

The commonest cause of gastro-intestinal pain is some error connected with the diet, and the fault can generally be traced to one of three things—namely, the amount of food may be too great for the infant's digestive capacity, the diet may be badly constituted, or there may be some flaw in the method of giving the food. Simple under-feeding does not of itself give rise to pain, excepting that accounted for by the pangs of hunger. The pain of indigestion has a direct relation to meals, and if it arises in the stomach it will generally be manifest within a few minutes of a feed. If the cause lies further down the intestinal tract, the evidence of pain is likely to appear from half an hour to an hour after food has been given. If the fault continues unchecked, chronic indigestion will follow and pain will become continuous, lasting from one meal-time until the next. Simple overfilling of the stomach with food is not a common cause of pain in infancy, partly because the infant's stomach is a readily distensible organ, and partly because any attempt to over-distend it is countered by vomiting, a process which is much less disturbing in infancy than in later life. The old custom of winding about a yard of flannel round the baby's abdomen, and so preventing the natural post-prandial epigastric fullness, was often a cause of discomfort and pain; fortunately, this practice is becoming less common.

Errors of diet lead to excessive peristalsis, and culminate in painful colicky contractions. The pain in these cases is generally intermittent. At intervals of a few minutes the baby begins to cry, draws his knees up on the abdomen, and presses his elbows into the sides; this attitude is maintained for two or three minutes while the baby cries vigorously, then the attack subsides. During the attack, relief may be given by keeping up a steady pressure with the warmed hand on the abdomen, or, more easily, by turning the baby over and allowing him to lie on his face, with the abdomen supported across the palm of the hand. The position of the infant in these attacks is exactly comparable to that of the adult in similar circumstances. We may briefly consider, below, the various dietetic errors which may culminate in colic. Most commonly there is an excess of gas in the stomach or intestine. In the stomach this gas will be excess air swallowed with the food, and probably it is a result of too big or too small a hole in the teat of the bottle, or of the baby being allowed to suck at an empty breast. When there is excessive gas in the intestine, some of it may have been passed on from the stomach, but the passage of large amounts of flatus per rectum is more frequently due to too much sugar in the diet, leading to intestinal fermentation, with the liberation of carbonic acid gas. Colicky pain may also result from irritation of the intestine by large, tough casein curds, or, less frequently, by fat curds. In the management of these cases the fault in the diet must first of all be corrected. Small doses of chloral ($1/2$ to 1 grain), given just before the feed, are useful, helping the child to drop off to sleep after the meal, and ensuring a period of peaceful digestion. Vigorous jogging of the baby is quite unnecessary; the simple procedure of holding the infant upright against the shoulder and patting the back is all that is required to release a large bubble of air imprisoned in the stomach.

Stomatitis

We are sometimes told that a baby sucks from the breast or bottle for a minute or two, and then cries and refuses to continue sucking. It may be that the breast

is empty or that the hole in the teat is so small that the infant cannot draw milk, and turns away disgusted. When, however, a child has previously been making satisfactory progress, these symptoms are often due to painful conditions inside the mouth, which should be carefully examined in a good light. There may be a simple catarrhal stomatitis, or a condition of thrush affecting the tongue and the inside of the cheeks. Numerous small shallow ulcers may be found in the mouth. Fortunately the gangrenous form of stomatitis is rare, for it is accompanied by grave toxæmia and a high mortality. In the management of these cases, the milk, well cooled, should be given from a spoon. The feeding utensils must be properly sterilized, and the mouth cleansed before and after each feed by gently swabbing with borax and glycerin, or with a weak solution of hydrogen peroxide.

Constipation

A mother sometimes complains that her infant screams when he is having a motion. The pain is generally the result of constipation. The infant strains and goes red in the face; eventually, if the effort is successful, a hard scybalum is passed, often leaving the baby pallid and exhausted. A diet rich in fat, such as a full-cream dried milk food, combined, perhaps, with insufficient sugar, often leads to this state, and a proper adjustment of the food may be all that is required. A small teaspoonful of magnesia, or the same amount of paraffin, given once a day, will be effective in other cases, and will not upset the digestion. Occasionally, and oftener in females, there is associated with the constipation, spasm of the anal sphincter, which by its rigid contraction maintains and intensifies the state of constipation. Anal spasm can only be detected by performing a rectal examination. In the normal infant gentle but steady pressure with the well-greased forefinger will enable it to pass without difficulty into the rectum, but in the presence of anal spasm the anal orifice is much smaller, and the sphincter feels like a tightly constricting band round the finger. Digital examination of the rectum stretches the sphincter, and may suffice to cure the condition.

Anal Fissure

Another cause of painful defæcation is the presence of a fissure at the anus. This is not uncommon in babies, and is generally due to tearing of the mucosa during the passage of hard faecal masses, which may be streaked with a little bright blood. The fissure is usually small, and can only be seen when the anal folds are held gently apart. It may lead to spasm of the anus, which increases the constipation, and in this way a vicious circle is set up. Defæcation is resisted by the baby, who screams, arches his back, and compresses his buttocks together. Treatment consists in softening the stool with paraffin, while the fissure may be smeared with an ointment of silver nitrate (1 per cent.). Stretching the anal sphincter with the finger may also lead to a cure.

Intestinal Obstruction

In a baby previously healthy, the sudden onset of screaming and intestinal colic, with attacks recurring every few minutes, is suggestive of an acute intussusception; the passage of a little blood in the stool, and the typical sausage-shaped tumour in the abdomen, would confirm our suspicions. The rarer causes of obstruction, such as volvulus or strangulation by peritoneal bands and the very rare cases of appendicitis in infancy, are marked by sudden pain, vomiting, and constipation, followed by abdominal distension, and collapse of the child. These symptoms are also encountered in strangulated hernia, but in addition the tender swelling in one groin indicates the true nature of the case.

EARACHE

Earache is one of the most frequently overlooked causes of pain in infancy. Owing to the short length of the Eustachian tube in the infant, mild catarrhal infections of the nasopharynx, producing little disturbance of health, and generally passing unsuspected, are within easy reach of the middle ear. Screaming and irritability, with fever and often a mild diarrhoea in a young child, should lead to a careful examination of the ears. As in gastro-intestinal colic, the screaming of earache may occur in bouts, but can be distinguished by the posture of the baby. During the exacerbations of earache the infant throws himself into an attitude of rigid extension, arching his back and retracting his head. This attitude will sometimes be maintained for several hours or even for days, and may give rise to suspicions of meningitis. Not infrequently the pain of earache is worse at night, leading to considerable disturbance of sleep. Further indication of the seat of the trouble may be given if the baby constantly pulls and worries at his ears, and rolls and bangs his head on the pillow. On account of the minuteness of the parts, examination of the tympanic membrane in a small baby is not easy. Using a good light and a small-bored speculum, we may note that the normal grey, shiny appearance of the drum is replaced by one which is dull grey or faintly pink; dilated vessels may be seen coursing along the handle of the malleus. The infection is generally bilateral. In severe cases, with head retraction, high fever, and perhaps convulsions, with the drum bulging and under pressure, rapid relief can be brought about by paracentesis. Although pus may not appear for a day or two, the relief of tension will be followed by a sharp fall in temperature and cessation of pain. It is much better to do a paracentesis, which will heal in a few days, than to wait for the drum to burst, for discharge of pus may then persist for months. One or two drops of a solution of 2½ per cent. carbolic acid in 50 per cent. glycerin run into the ear will also diminish the pain. Warm fomentations are particularly useful at night when the baby cannot sleep. They should be large enough to cover the ears amply, and are most easily kept in position by using a tight bonnet instead of a bandage. Small doses of chloral also help to reduce the pain.

TEETHING

Teething is too often made the excuse for many of the upsets and pains of infancy, but nevertheless I have no doubt that this physiological process does, in some babies, occasion much discomfort and pain. Great irritability and screaming, refusal of food, fever, and even photophobia may all subside with the eruption of a canine or molar tooth.

INTRACRANIAL DISEASE

This may be the cause of considerable pain in early life. Attacks of sharp screaming may occur in the first stages of post-basic meningitis, sudden piercing screams are not uncommon in the irritable stage which ushers in tuberculous meningitis, and movement of a child whose head is rapidly enlarging from hydrocephalus may cause loud crying.

URINARY PAIN

Pain arising from the urinary tract is not uncommon in infancy. We may sometimes be misled by a mother's statement that her baby screams every time he passes water, for it may be that he passes water every time he screams—a very different matter. In infancy the bladder is more an abdominal than a pelvic organ, and it is quite likely that the rigid contraction of the abdominal wall when a baby is screaming will tend to com-

press the bladder and lead to urination, just as an infant will often micturate when the hypogastrium is being palpated. In male infants a common cause of screaming during micturition is the presence of a small ulcer at the urinary meatus. It is commoner in the circumcised, and is partly the outcome of the glans chafing against a rough napkin. The ulcer is often minute, and close examination is required in order that it may be discovered. The exudate from the ulcer dries into a scab over the meatus, and the bursting open of this seal makes micturition painful, and a few drops of blood may precede the passage of urine. Treatment consists in covering the glans with a piece of gauze spread with vaseline, and in paying careful attention to changing the napkins as often as necessary to keep the parts dry. It is also useful to rinse the napkins in a strong boric solution before they are dried. Painful micturition may sometimes be due to a highly acid urine, particularly if the urine comes in contact with excoriated buttocks. This may happen from over-feeding with carbohydrate or fat, and may be relieved by modifying the diet, and by giving small doses of potassium citrate. The passage of large numbers of crystals in the urine may also lead to considerable dysuria. The commonest offenders are uric acid crystals, which are excreted abundantly during the first few weeks of life, and may give rise to renal colic, with attacks of screaming and vomiting. More rarely the passage of oxalate crystals accounts for the symptoms. Relief is given by increasing the intake of fluid and by giving alkalis. The passage of calculi rarely occurs until later on in childhood.

Pyelitis

Acute infection of the urinary apparatus, and pyelitis in particular, is a frequent cause of pain in infancy, and like otitis media it is often overlooked. This is due partly to the difficulty there may be in collecting a specimen of urine from a baby, and partly to the fact that pyelitis, being commoner in girls, tends to make us less watchful for the condition in male babies. There may be nothing characteristic about the pain of pyelitis beyond the sustained irritability of the infant, and therefore it should be a rule that, in any infant who has a sudden illness with fever, irritability, and perhaps rigors, for which no cause can be found, a sample of urine should be obtained and examined for pus. Sometimes the course of pyelitis may be punctuated by attacks lasting for a few minutes, in which the infant screams, stiffens, and appears anguished, then turns pallid and becomes collapsed. These bouts of pain are probably due to the passage of clots of pus down the ureters. Apart from the urine, examination of the baby suffering from pyelitis is generally negative, but palpation may show that the infant is tender in one or both loins, wincing when these areas are touched. The urine which is examined for pus need not be sterile. Gentle pressure over the hypogastrium may be sufficient to start micturition. Another method is to lay the infant on mackintosh sheeting spread over pillows. The centre of the sheet is then pushed down between the pillows so that when the baby passes urine this will collect in the lowest portion of the mackintosh. In the male baby free from balanitis or meatal ulceration there should be no pus cells in the uncentrifuged urine; in girls more than two pus cells in the 1/6 microscopic field should be regarded as abnormal.

THORACIC PAIN

Thoracic pain in the infant is indefinite, and difficult to assess. In lobar and broncho-pneumonia the rapidity and shallowness of the respirations will reflect to some extent the pain resulting from involvement of the pleura, as will the feebleness of the cry owing to the pain of

drawing a deep breath. Displacement of the neighbouring structures associated with large accumulations of pus in the pleura may also be painful.

PAIN IN THE LIMBS

Pain in the limbs is shown in two ways: first, the painful limb is moved less than the other limbs, and may be motionless, and, secondly, any attempts to move the limb provoke crying. When an infant has pain in the limbs trauma must first be excluded. There may be a history of injury, and examination may show bruising of the soft parts; but the more severe lesions, such as fracture or separation of an epiphysis, may only be detected after a most careful clinical scrutiny aided by x-ray examination. Trauma, however, is not a common cause of pain in infancy.

Apart from trauma, pain in one or more limbs in an infant under 6 months of age should make us think of syphilitic epiphysitis. In this condition the arms are most commonly affected, and the process may be confined to one limb, which is so immobile that the term "syphilitic pseudo-paralysis" has been given to it. There may be additional evidence of syphilis in the baby, such as condylomata about the anus or mouth, or a history of snuffles or of rashes affecting particularly the palms of the hands and soles of the feet. X-ray examination will show inflammatory swelling of the shaft and epiphysis of the affected bone. Under treatment with mercury the pseudo-paralysis will pass off in ten days or so.

Infantile scurvy is the dominating cause of limb pains in the period from the sixth to the eighteenth month of life. Owing to the subperiosteal effusions of blood the pain and tenderness of the limbs is intense, often making the baby cry from anticipated pain before it is actually touched. The observant mother will notice the baby's sensitiveness at an early stage, especially when she bathes her child, a history which is most suggestive of scurvy. The legs are more commonly affected than the arms, and the baby adopts a characteristic attitude, the hips being abducted and externally rotated and the knees bent. There may be visible swelling, most frequently just above or below the knee; in other cases the swelling can only be detected by gentle palpation. Palpation, however, causes such exquisite pain that one first looks for other signs of scurvy, such as purplish swelling of the gums around the erupted teeth, scorbutic beading of the ribs, orbital haemorrhages, and the presence of red blood cells in the urine. Once the diagnosis is made, relief of the acute symptoms can be brought about in two or three days by giving the antiscorbutic vitamin in the diet. Fresh unboiled cows' milk, fresh fruit juice, and potato made into a cream with milk are all effective, and may be combined in order to expedite the cure. Meanwhile the baby should be moved as little as possible in order to limit the pain, and should only be lifted when his napkins require to be changed.

Two conditions remain which may give severe pain in the limbs. These are acute osteomyelitis and acute poliomyelitis. The onset of osteomyelitis is sudden, and is accompanied by pain and tenderness in the affected limb, the temperature rises to 103° or 104°, and the child rapidly becomes pallid and profoundly toxic. The morbid appearance of the child gives the first clue in distinguishing this condition from scurvy. Later the tissues over the affected bone become swollen and oedematous, and the skin hot and red. As soon as the diagnosis is made the bone abscess should be opened and drained. With this condition we may group the cases of acute suppurative arthritis, often involving several joints, which may arise during infancy, and may lead to swelling of the joints with much pain and loss of movement.

Acute poliomyelitis may occur quite early in the first year of life, and the affected limb or limbs may be acutely tender for the first few days. There is, however, no swelling of the limb, and after a few days wasting becomes apparent. Furthermore, the loss of movement is more profound than in scurvy or epiphysitis, for in these conditions slight movements of the joints can be provoked by stimulation, but in the early stages of poliomyelitis the whole of the affected limb remains motionless.

A CASE OF GLOSSOPHARYNGEAL NEURALGIA

BY

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Tic douloureux affecting the glossopharyngeal nerve is a rare condition. The only cases of it that have been recorded in this country are three described by Dr. Wilfred Harris,¹ but about twenty cases have been reported in America since the publication of Harris's first description of it in 1921.²

Its recognition is important, because it is likely to be mistaken for trigeminal neuralgia of unusual distribution, and treatment may be misdirected in consequence. In a large proportion of the recorded cases, the patient has been subjected without benefit to an alcoholic injection of the third division of the trigeminal nerve, or to an operation on the Gasserian ganglion before the true condition present has been recognized.

The following case is the first that has come within my experience.

A man, aged 61, was referred to me on October 3rd, 1930. He complained that when he swallowed he had a "burning" pain in the left side of the throat and an intense stabbing pain deep within the left ear. Each spasm of pain lasted only a few seconds. The spasms varied greatly in frequency and severity, but when they were prevalent he had "a dread of meal times."

Inquiry brought out the following additional facts. The trouble began about eight years previously. At that time the patient felt "a prick" in the left ear when he swallowed. This disappeared for months at a time. After a considerable period it began to be a rather sharp pain.

About 1925, when having a drink of stout, he had an attack of the most intense pain in the ear. It lasted only for a few seconds, but he "thought he would go mad." This was the first attack of intense pain; few subsequent spasms have been as severe. He attended the throat department of one of the large hospitals, and was examined, but nothing abnormal was discovered, and no treatment was given. Thereafter severe pains became not uncommon. By this time he had noticed that the pain in the ear was accompanied by a "burning feeling"—not intense—towards the back of the throat on the left side. The attacks used to make him bend his head over to the left and draw the left shoulder up. The pain was nearly always brought on by swallowing; both solids and fluids would cause it, and any large bolus of food was sure to bring on a spasm: swallowing saliva sometimes caused the pain, and talking sometimes seemed to bring it on. The left side of the throat felt dry, especially at night, and this feeling made him "clear his throat" frequently.

In 1926 he was examined at Golden Square Hospital by a laryngologist, who raised the possibility of a growth in the throat, and took the precaution of examining him again, under a general anaesthetic. Nothing abnormal, however, was discovered in the throat. The following year he saw another laryngologist, who said his tonsils were septic and advised their removal. Tonsillectomy was performed, and for some time afterwards the patient had very little pain.