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Lectures

ON THE

SURGERY OF CHILDHOOD.

DELIVERED AT THE HOSPITAL FOR SICK CHILDREN.

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LECTURE III.

SURGICAL DISEASES—Hernia in Children; Statistics; General Remarks on Hernia in Children; Congenital Umbilical Hernia; Adventitious Umbilical Hernia of Infancy; Nipple-like Fleishy Tubercle of Umbilicus; Inguinal Hernia in the Male Child; Congenital Inguinal Hernia; Complications; Hernia Infantilis; Inguinal Hernia in the Female Child; Treatment of Inguinal Hernia; Frequency of Diseases of the Bones and Joints in Children; Inexpediency of hasty Excisions of Joints or Amputations in early life; Concluding Remarks.

GENTLEMEN,—In the present lecture, we arrive at last at the surgical diseases, properly so called. The constitutional peculiarities of childhood impress their character upon these diseases, and modify their progress, their termination, and their treatment. Independent of these modifications, we find numerous affections which are either peculiar to early life, which are then most frequently met with, or, at any rate, which present at this time certain specialities deserving our attention.

Hernia. I hinted in the first lecture that these diseases might be connected with some congenital defect, might arise from injury, or might depend on less obvious causes, constitutional or local. I purpose occupying the greater part of your time to-day with the consideration of an affection belonging to the first of these divisions; viz., hernia, as it is met with in the child. I do so, because—though I may have little that is absolutely new to offer to you—I have found practically that somewhat vague, not to say erroneous, notions on the subject exist in the minds of certain practitioners, and perhaps, too, I may be able to collect and present to you at one view, with the brevity which a lecture enforces, various facts and observations, most of which exist, indeed, in such admirable works as those of Lawrence, Scarpa, and Cooper, but which are there dispersed and mixed up with the description of the disease as it occurs in the adult.

Hernia is an affection which is very frequently met with in children. According to Malgaigne, within the first year after birth, one male child in every twenty is ruptured; after the first year, however, the proportion steadily falls, till at the age of thirteen, it has become as low as one in seventy-seven; beyond this time of life, the ratio begins again to rise.* From Mr. Heather Bigg, through whose hands pass about two thousand cases of hernia annually, and to whom I am indebted for much valuable information, I learn that during the past year the proportion borne by his cases of rupture in children to those of adult life, was as one in nine—the numbers in early life being as follows:—

From 1 month to 3 years	120
From 3 years to 6 years	49
From 6 years to 10 years	84
From 10 years to adult life	15
	<hr/> 224

At this Hospital there have come under my notice 193 cases of hernia (all, of course, in children), 88 of which occurred in males, 45 in females. Though this number may not be very large, it is probably sufficiently so to enable us to institute some comparison with the records of cases at all ages preserved at the Truss Society.

Out of the 193, 66 were umbilical; 35 occurring in females, 34 in males: the ages at which they were brought to the Hospital varying from sixteen days to three years, but in the great majority being less than twelve months. As far as umbilical hernia is concerned, then, there was little or no difference in the two sexes, the numbers being almost identical. At all ages, in the Truss Society's report for twenty-eight years (Lawrence, *On Hernia*), for 2775 cases of umbilical hernia in the female, there were only 664 in the male, or in the proportion of about 100 to 24. In children, then, it would seem that the great preponderance of this form of rupture in the female sex, which is met with in after life, does not obtain.

Of inguinal hernia, I have had 64 cases, 54 in the male and 10 in the female. This form of hernia is much more common in male than in female children, as 100 to about 18.5. It would appear, however, to be by no means infrequent in girls, being in fact proportionately more common in them than in the grown woman, for at all ages the proportion is as 100 to 2.2.

Dr. Küttner, in an article on the influence of sex upon the diseases of children, founded on observations at the Children's Hospital at Dresden, states that the disposition to ruptures appears to be greater in boys than in girls; as, out of 116 cases of navel and inguinal hernia, 75 were in males and 41 in females. These numbers agree very closely with those noticed at this Hospital; for, as Dr. Küttner does not distinguish between the two forms of hernia, the greater frequency of inguinal rupture in the male inclines the balance strongly in that direction.

I have given these statistics, which must, of course, be taken for what they are worth; because, from certain remarks a few months since in a medical journal, it appeared to be the opinion of one of our best informed and most intelligent surgeons that inguinal hernia was not merely very rare in women, but especially so in young ones; and though, on the authority of Mr. Kingdon, this statement was afterwards modified, it was added that inguinal hernia in young females "never become strangulated." It so happens, however, that a case of strangulated inguinal hernia in a young female came under my care at this Hospital in 1856.

A girl, of the name of Jeannette Mairie, eleven years of age, was admitted on July 2nd, with strangulated inguinal hernia of the right side. She had been wearing a badly fitting truss, but the bowel had come down on the previous day, and could not be returned. The hernia, when I saw it, was of small size, very tense and tender, and accompanied with the usual symptoms of strangulation. I succeeded at last, though with considerable difficulty, in returning the bowel, and no operation was required.

It will be noticed that I have said nothing of femoral hernia; in fact, it is this form of rupture which is really most uncommon in children, whether of the male or female sex. My friend Mr. G. D. Pollock, whose connection with the Truss Society has given him an extensive field of observation in this affection, corroborates this assertion; Mr. Heather Bigg informs me that not one case of femoral hernia in a child has come under his notice; I have never seen a case of it at this Hospital; Lawrence, in his admirable work on *Hernia*, mentions only one case below the age of 13 (our limit at Great Ormond Street); this one having been noticed by Sir Astley

* The following table is taken from Malgaigne's *Recherches sur la fréquence des Hernies*, etc.:—

From birth to one year, the proportion of cases of hernia	
In male subjects is as	
From 1 to 2 years	1 to 20.67
" 2 to 3	1 to 29.09
" 3 to 4	1 to 36.87
" 4 to 5	1 to 55.64
" 5 to 10	1 to 59.73
" 10 to 15	1 to 77.31
" 15 to 20	1 to 41.72
" 20 to 25	1 to 30.74
" 25 to 30	1 to 30.38

Cooper. Still it does occur, and may even become strangulated, requiring the usual operation for its relief. A girl, 8 years of age, was brought to St. George's Hospital in April 1854, with a strangulated femoral hernia of the right side, of recent origin, for which she had never worn a truss. She was operated on by Mr. Johnson, when a very small knuckle of intestine, coated with lymph, as well as a small portion of omentum, were found in the sac. The case did well.

Before speaking of the particular forms of rupture, I may offer a few remarks applicable to hernia generally as it is met with in the child.

1. With regard to the contents of the sac. These are generally *intestinal*, for the omentum in infancy is short and imperfectly developed, seldom reaching much below the navel. The large intestine too, especially the sigmoid flexure, at this time of life, is comparatively moveable, and hence there would be, perhaps, a greater chance of finding this present when the sac is opened.

2. It is in early life especially that a radical cure of hernia may be hoped for and confidently expected, if methodical pressure is steadily maintained for a certain period. In umbilical and congenital inguinal hernia there is a strong natural tendency of the openings to contract; and if we only prevent the protrusion of the bowel, we may calculate, almost with certainty, on obliteration taking place, on the abnormal channel becoming blocked up. Even in the non-congenital form of inguinal hernia a permanent cure will, in all probability, be effected, for in very early life the development of the pelvis is rapidly inducing changes in the inguinal canal which becomes more and more oblique; the intestines and other abdominal organs are enlarging, and consequently less prone to protrude, and the dilated opening tends to contract, if no unnatural distension of it be permitted, in obedience to the general law by which hollow parts adapt themselves to their contents.

3. In our treatment, we must bear in mind not merely that early attention implies permanent cure, but also that ruptures in infants, if allowed to remain unreduced, are by no means unattended with danger. Incarceration and strangulation may take place at any age; and though they may be relieved without the use of the knife with comparative frequency in early life, yet, if reduction cannot be effected, the subsequent ill-consequences advance with much rapidity, and no time should be lost in having recourse to operation. Mr. Fergusson has been called on to operate on an infant seventeen days old; and Mr. Erichsen in two, under the age of six weeks. At St. George's Hospital, within the last seven years, there have been, in addition to the case of femoral hernia already alluded to, four of inguinal hernia, requiring operation, in children varying in age from eleven weeks to fourteen months; of these, one was *oblique*, the other three *congenital*.

4. The truss to be worn need not, of course, be of anything like the strength required in the adult, but it may be employed, with certain modifications to be alluded to hereafter, with perfect safety in the youngest child, and the sooner its use is commenced, the less the danger of the patient, the greater the chance of his permanent relief. Considerable care, however, is required in the management of the truss; for, in consequence of the rapid alterations taking place in the size of the patient, the truss which at first fits well may soon prove useless, and the cure be making no progress, the patient's life really endangered. I have said nothing of the operation for the radical cure of hernia in children, because, without denying that it may in some cases be called for, I cannot but think that we are seldom justified in having recourse to an operation, by no means absolutely unattended with danger, to effect that which can usually be accomplished without the slightest risk. In the adult, of course, the conditions are different, the chance of cure by compression alone being in their case comparatively small. I may mention that a child has been brought to me on whom the operation had been performed and *failed*, the hernia having been reproduced.

These remarks may seem, perhaps, unnecessary and trifling; but very often, among the out-patients at this Hospital, when an infant has been brought to me with a rupture, I have learnt from the mother, that she has been told by medical men and even at public institutions, that "the child was too young to wear anything; that she must wait till the infant was much older."

Umbilical Hernia. This is the form most characteristic of early life, becoming comparatively rare as we advance in years, especially in the male sex. Umbilical hernia may be strictly congenital, or may come on soon after birth; both these forms

presenting certain differences from that which is met with in the adult.

Congenital Umbilical Hernia. At an early period of intra-uterine life, the greater part of the intestine is placed inside the root of the umbilical cord, the anterior abdominal muscles being widely separated from one another, especially in the region of the navel. As development advances, the bowel enters the abdominal cavity, and an aponeurotic ring surrounds the base of the cord, which at birth should only contain the urachus and the umbilical vessels. Occasionally, however, it happens that the base of the cord remains of considerable size, and continues to lodge some portion of the intestine; we then find a rounded or conical pouch, the top of which corresponds to the umbilical cord, its base to the aponeurotic abdominal ring, which is preternaturally dilated, whilst its sides are composed of skin, of cellular tissue more or less condensed, and of the peritoneum. The size of this pouch may vary very considerably; sometimes it includes the large intestine, the stomach, and even the liver and spleen. More frequently, fortunately, it is of small size, and lodges only a portion of intestine. It has been a question in this, and indeed in the other forms of umbilical hernia, whether any covering of peritoneum is present, whether in fact a sac exists. Unquestionably it does, the error of those who maintained a contrary opinion having probably arisen from an idea that the vessels of the cord perforate the serous membrane as they enter the abdomen, instead of having a reduplication of it thrown around them. Still, from the thinness of the coverings and the close connection between the peritoneum and the integument at the seat of the cicatrix, it is difficult at this point to trace the distinction between the two, and much caution is necessary if we are called on to operate.

Treatment. If the protrusion is extensive and embraces other viscera besides the intestine, the chance of the child surviving becomes very small, especially as this condition is often combined with other malformations prejudicial to life; though cases are on record in which a spontaneous cure has occurred even when a portion of the liver has been prolapsed. If, on the other hand, the case is uncomplicated, if the tumour is small, and includes only a moderate amount of intestine, the chances are more favourable. In dividing the cord, care must be taken not to include any portion of the protruded bowel in the ligature; for, if very small, its presence may be overlooked, and the intestine may be, and has been, fatally injured. The hernia having been carefully returned, pressure may be applied by means of suitable compresses, and the parts kept in position by bandages or plaisters. Under this treatment, the stump of the cord may be expected to separate in about a week after birth without the bad consequences which would result if the intestine were still prolapsed.

Adventitious Umbilical Hernia of Infants. Even if no hernia exist at the time of birth, it may make its appearance soon afterwards; for the aponeurotic opening through which the umbilical vessels pass is not at once obliterated on the formation of the cicatrix: its contraction and the consolidation of the parts around proceeding gradually, and requiring a certain time before they gain the power of resistance which is met with ultimately. During this period, the intestines, becoming distended by the food they receive, and compressed by the action of the abdominal muscles, may be protruded through the umbilical opening, which offers less resistance to their impulse than any other portion of the linea alba. Hence it is, that this form of hernia occurs most frequently within the first year of life. In the adult, on the other hand, the navel is so firm and solid that the hernia, unless it has continued from infancy, is more likely to take place above or below the proper umbilical opening, but more frequently above, in consequence of the greater breadth of the linea alba in this situation. Even in children, however, the rupture is not invariably situated at the umbilicus itself; in a child of the name of Eva Beckford, aged three, who was under my care, the hernia occurred distinctly above the navel.

The contents of the sac consist usually of intestines; in a case, however, related by Cabrolus, where the child, a female, had been born with obstruction of the urethra, a navel rupture had formed consisting of the bladder, which soon gave way externally, so as to form an urinary fistula in this situation. The child grew up, and, at the age of eighteen, the urethra was opened by operation, the urine resumed its natural course, the umbilical tumour subsided, and the fistula closed.

With respect to the treatment, it may be remarked that owing to the natural disposition of the ring to contract, a cure may take place independently of any interference on the part of

the surgeon. It would not, however, be safe to trust entirely to nature; for, if the ring is kept habitually distended, its contractile tendency will gradually be lost, and the opening remain permanently patent. To ensure a cure we must at once return the protruded bowel, and keep it reduced. For this purpose the ligature was at one time employed; but, though Desault warmly supported this operation, its consequence in the hands of others was so injurious, that its use is now generally abandoned, compression offering a safer and equally efficacious means of relief. In very young infants, and when the rupture is slight, covering the part freely with pure collodion may occasionally prove effectual. As this, however, cannot often be depended upon, we must usually employ more decided pressure which may be applied by means of a piece of cork or some similar substance, secured by the aid of plaisters; or, better still, by a shield of gutta percha with a nipple-shaped projection in the centre, like these, which were constructed by Mr. Braine, our most intelligent house-surgeon. A very efficient, and at the same time inexpensive instrument also, is the one I show you, consisting of a pad inserted in a broad band of elastic material, which is made to lace behind so as to adapt it exactly to the individual case; this can be managed with sufficient ease by a mother of ordinary intelligence, to ensure a ready cure. Should strangulation occur, and an operation be required (which, however, is most improbable), it might perhaps be as well to try and relieve the stricture without opening the sac, as the chances of recovery in the adult appear to be increased by this procedure.

Nipple-like Fleishy Tubercle of the Umbilicus. I venture to introduce here a few words respecting a troublesome affection of the umbilicus, which might possibly be mistaken for hernia, and of which I have seen several cases, though the only notices of it I have met with are by Lawrence, who shortly alludes to it, and by Sir Astley Cooper, who devotes a few lines to it under the name of fleshy tumour of the navel. In these cases we find, rising from the centre of the main umbilical depression, a stout, nipple-shaped papilla, or tubercle, of uniform thickness, which may be nearly an inch in height, and about as much in circumference. It is firm in substance, of a florid red colour, moist on the surface, and discharging a mucous secretion, the reddened surface becoming continuous at its base, by an abrupt and well-defined line, with the ordinary skin. Occasionally, there is an aperture at its summit, through which I have passed a fine probe, for the distance of two or three inches; in no instance, however, have I found it lead to the bladder, nor have I seen any urine passed through it. In other cases, the tubercle has been quite solid, without any central opening. There is usually no pain in the part, except when it is handled. The constant secretion, however, as well as the bleeding, which readily occurs on any friction by the clothes, render it a source of considerable inconvenience. The condition is said to be congenital, or at least noticed from the time of separation of the cord. I have seen it at 2, 3, 5, and even as late as 7 years of age, in children of whom all previous treatment by various practitioners had been unsuccessful.

The application of nitrate of silver (solid or in solution), of sulphate of copper, etc., I have always found to fail in curing it. In some cases, however, I have succeeded, by means of the acid nitrate of mercury repeated several times; but the most certain way is, to include its base in a ligature, when the dead part separates in a few days, leaving a healthy surface behind it, which soon cicatrises. I have had no opportunity of examining the exact nature of this tubercle: it does not, however, belong to the class of nœvoid or erectile tumours, though the moistened surface bleeds readily, as I have already mentioned. Sir Astley Cooper states that, in a case of this kind brought to him from the country, at the age of seven, he "found it arose from the circumstance of the funis being so long as to project beyond the skin of the navel, which prevented its cicatrization".

Inguinal Hernia in the male child may be oblique, rarely, if ever, direct. That common oblique hernia really occurs in very early life is demonstrated occasionally during operations. In 1852, Mr. Cæsar Hawkins found this form of rupture in an infant eleven weeks old, on whom he operated at St. George's Hospital; and Mr. Lawrence notices the same fact. In the great majority of cases, however, the hernia is "congenital", though in truth this term is not strictly correct, as the rupture may not actually occur till a very considerable period after birth. In this case the protruded parts descend along the canal of communication between the peritoneum and the tunica vaginalis, which has not become obliterated, the bowel coming into direct relation with the testicle, which appears, as it were,

contained within the sac. The testicles, it is well known, are originally formed in the abdomen, where they are situated immediately below the kidneys, and it is not till about the fifth or sixth month of fetal life that they begin to shift their position, traversing the inguinal canal during the eighth month, and towards the end of the ninth reaching the bottom of the scrotum, where they are usually found at the period of birth. The natural alteration in the position of the testicles requires corresponding changes in its serous covering—the tunica vaginalis. This membrane, which originally formed part of the peritoneum, still communicates with it for a short time after the gland has reached the scrotum; soon, however, the communication becomes cut off, and at birth the upper end of the canal is frequently, but by no means invariably, closed. According to the observations of Professor Engle, the canal is closed at birth in ten per cent.; but more constantly, or at any rate more completely, on the left side than on the right. In this way, perhaps, the greater frequency of inguinal hernia on the right side may, to some extent, be accounted for, since it may be noticed that in infants, as well as in adults, inguinal hernia is much more frequently met with on the right side than on the left, and it is evident that the cause for this difference usually assigned—namely, "the employment of the right side in those offices of life which require the most powerful exertion"—will hardly apply in the case of infants. At the end of a fortnight, no trace of the canal was to be found on the left side in 30 per cent., whilst in 60 per cent. it remained open on both sides. In the adult, the vaginal canal, or some remains of it, was discovered in 31 per cent. of the bodies examined. The tunica vaginalis, then, may continue, even for years, to retain its connexion with the peritoneum, as it does permanently in quadrupeds, with the exception of the chimpanzee, the only one of the brute race, according to Owen, which resembles man in having the vaginal tunic closed. If this communication is of small size, it may allow only of the passage of fluid to or from the peritoneum, giving rise to what is called *congenital hydrocele*; but if of larger dimensions, some of the abdominal viscera may possibly descend through it, constituting *congenital hernia*.

We must bear in mind, also, that it not infrequently happens that the descent of the testicle may be arrested or incompletely performed, and the gland may remain in the inguinal canal, or even entirely within the abdomen. Should we find, therefore, a swelling in the groin, we should ascertain the position of the testis before we hastily pronounce the case to be one of hernia, lest we subject this gland to the pressure of a truss, as I have seen in more than one instance, neither to the advantage nor to the comfort of the patient. At the same time, we must remember that the imperfect descent of the testis may depend upon the presence of adhesions to the bowel, and the case be complicated, by the coexistence of hernia, adding considerably to the difficulties of our treatment. Moreover, a scrotal hernia may undoubtedly take place whilst the testicle is still retained in the abdomen. Mr. Heather Bigg informs me that he has lately attended a family where two of the sons have had, and been cured of, inguinal hernia of the right side, the testicle never having descended; the father in this case has only one testicle in the scrotum, but has never suffered from rupture.

Occasionally it happens that *encysted hydrocele of the cord* is mistaken for hernia, for if the cyst is placed at the abdominal ring, or even inside the inguinal canal, the diagnosis from hernia becomes often really difficult. The most characteristic point of difference would probably be, the comparatively fixed position of the hydrocele, which can neither be brought completely down into the scrotum, nor yet be forced entirely within the abdomen, as would happen with a reducible hernia. Mr. Curling, in his valuable work *On the Testis*, relates an interesting case where an acute hydrocele of the cord was mistaken for strangulated hernia, and an operation at one time contemplated. On the other hand, it is possible that an irreducible hernia may resemble and be taken for an encysted hydrocele, as in the case of a boy related by Sir Astley Cooper.

Hernia Infantilis. There is a variety of inguinal hernia which I ought to mention, as it has received the special name of infantile hernia. This, however, is by no means peculiar to infants, and not often met with at this, nor indeed at any age, though Hey, by whom it was first recognised and described, having noticed it in the body of a child who died of this affection at the age of fifteen months, gave to it the name it now bears. The infantile differs from congenital hernia in the fact, that the serous canal of communication has been closed to a certain extent, and there is a distinct and separate hernial

sac, formed of peritoneum, protruded, in its descent, from behind into the tunica vaginalis, which as it were overlaps it. On opening the vaginal tunic, therefore, we do not come at once upon the bowel, but find it still invested with a distinct pouch of peritoneum, pushing the posterior wall of the tunic before it. In this way, we may have to divide *three* layers of serous membrane before we get into the interior of the sac, before we actually arrive at the protruded viscus.

Inguinal Hernia in the female child is, probably, in most cases of the ordinary oblique form. A projection, however, of peritoneum into the inguinal canal, according to Professor Meyer, takes place in the female as well as in the male fœtus; and, though less considerable and undergoing its changes much earlier—as soon, perhaps, as the fifth month of intra-uterine life—such a diverticulum may still be found occasionally at birth passing through the abdominal ring in connexion with the round ligament. Wrisberg discovered in 19 out of 200 female bodies such a serous canal, existing usually on both sides, occasionally only on one. It is possible, therefore, that a hernia in female children may, in some cases, descend through these diverticula, and may constitute a kind of congenital hernia. Diagnostic marks, however, by which we may be enabled to recognise it, are absent, and we cannot be confident that the existence of such diverticula would materially favour the production of a rupture.

In inguinal hernia, in the female, it may be well to remember that the ovary may descend through the canal, and form the hernial protrusion. In a case related by Billard, occurring in a female infant, a rounded tumour was noticed in the left groin, which was found, after death, to consist of the left ovary, which had passed through the canal and abdominal ring, both of which were decidedly enlarged. The ovary and extremity of the Fallopian tube were lying free at the bottom of the hernial sac, which was formed of a prolongation of the peritoneum, with the cavity of which it freely communicated.

Treatment. In inguinal hernia in the male, as well as in the female, we must bear in mind that a large proportion of the cases, in very early life, is capable of being cured, and consequently it is to this end that our treatment should be directed, with every hope of a permanently successful result. For this purpose, compression should be commenced as early as possible, and maintained constantly by night as well as by day. Under ordinary circumstances, the kind of truss to be adopted may be that for the opportunity of showing you which I am indebted to the kindness of Mr. Heather Bigg. Its principle is that of a slight metallic spring, softly padded, encircling the pelvis about an inch and a half below the crest of the ilium, and terminating at one extremity in a pad of a fungiform or pear shape, the upper portion of which rests against the hernial orifice, whilst the lower passes under the perineum, and is attached to a small hook on the opposite side. The advantage of this special form of truss for hernia in infancy is, as Mr. Bigg remarks, "that the pad not only entirely closes the inguinal canal, but produces a slight uplifting of the perineum, which more than anything tends to prevent the hernia escaping from the inferior margin of the inguinal ring". When the child is a little older, say upwards of three years of age, the fungiform extremity may be dispensed with, and the under-strap fastened to the same side as that on which the hernia exists.

In using these trusses, which may be covered by oiled silk, to prevent their being spoiled by moisture, we must not forget the fact that the pelvis in children is undergoing rapid changes; we must examine the case, therefore, carefully from time to time, and change the truss as soon as it no longer serves its purpose. We must endeavour, also, as far as possible, to enlist the intelligent aid of the mother or the nurse, to impress upon them the necessity of constant care and watchfulness on their part in maintaining effectual compression. The period required for a cure cannot, of course, be accurately laid down before hand. The younger the infant, and the more effectually the hernia is prevented from protruding, the sooner will obliteration of the opening occur; it is probable, too, that a cure will take place the more readily if the hernia is congenital rather than oblique. In some cases, occurring almost immediately after birth, when there has been a difficulty in procuring or in wearing a truss, I have employed a pad of wax, moulded when warm to the shape of the parts, or an air-pad, as suggested by Mr. Erichsen, and secured by means of a flannel or partially elastic bandage, kept in its place by a perineal strap of wash-leather. Or, when the rupture is slight, we may employ an elastic belt, lacing behind and fitted with a fungiform pad as

well as with a perineal band, like the one I show you, which was made by Mr. Heather Bigg, at my suggestion. If, in such cases, this or some similar plan is adopted at once, and maintained, so as entirely to prevent the descent of the hernia, even for a week or two, there is a considerable chance of the tunica vaginalis becoming separated from the peritoneum; if not, the sooner the use of the steel truss is commenced the better.

Where the hernia is complicated with partial or complete retention of the testicle, its management often becomes more difficult, and may require special modifications, adapted to the individual case. Sometimes, if the testicle has sufficiently cleared the external ring, a truss may be so adapted as to prevent the rupture from descending without pressing on the testis, or without allowing it to re-enter the inguinal canal. If, however, this cannot be managed, if the intestine is closely adherent to the testicle, and the two cannot be separated, it is advisable to endeavour to return *both* into the abdomen, and retain them there by means of a truss. In those cases where a rupture has occurred without the testicles having shown themselves at all, it is better also, I believe, at once to apply a truss, and disregard the consequent retention of the testis. It is true that it is desirable, if practicable, that the testicles should be placed in the scrotum rather than in the abdomen. The moral effect of the absence of these glands is considerable, and their development is probably favoured by their existence in their normal position; but, if much delay has occurred, the transition of these organs is seldom perfectly accomplished, adhesion to the intestine is frequently met with, and the persistence of the gland in the groin, complicated as we suppose it to be with rupture, is attended with greater inconvenience, and even with greater danger to life, than its complete retention in the abdominal cavity.

There is no time left for me even to enumerate the other surgical diseases which come under our care at this Hospital; I can only say that they are numerous, complicated, and important. In the eye, for instance, besides congenital cataract, we have the ophthalmia neonatorum and strumous ophthalmia peculiar to early life; and that the affections of the genito-urinary organs (to which I hope at no distant period specially to call your attention) contribute in no mean proportion to our operative surgery, this collection of calculi, removed by me at this Hospital, will serve, I think, to demonstrate. Our great surgical *cheval de bataille* is, however, no doubt the diseases of the bones and of the joints. The spine, the hip, the knee, the ankle, with, occasionally, the articulations of the upper extremities, are the parts the affections of which principally fill our surgical beds; for there the white-swings of our older writers abound, there caries may be said to revel.

Diseases of Bones and Joints; Inexpediency of Hasty Operations in Children. It is true that these diseases may appear tedious in their progress, that the succession of patients is not rapid, and that the beds are occupied for a long time by the same individuals; it does not follow, however, that the diseases are devoid of interest, that much may not be learnt from their study, or that relief from suffering, rescue from deformity or mutilation, and even preservation of life, may not be accomplished by their steady investigation. It is in children especially that a cure may be hoped for, even in most aggravated forms of disease of these parts; for in children the plastic powers of nature are so great that recovery may take place when in the adult any such hope can scarcely exist. I have no hesitation in owning that, when I first became surgeon to this Hospital (not so many years since), I was less unwilling to have recourse to operations than I am now. In recent times, what is called conservative surgery has made much progress, and a joint is now excised, where, formerly, the extremity would have been sacrificed. This is, no doubt, a great improvement, but after all, the most really conservative surgery is, *to save the joint as well*; and this, I feel perfectly certain can, in early life, with care, time, and perseverance on the part of the surgeon, be accomplished much more frequently than is generally supposed. I need scarcely dwell on the advantages of this preservation, if it be practicable; to say nothing of our avoiding the risk of an operation, which is always appreciable, and in the knee is considerable even in children, the length and proportions of the limbs are preserved, and a considerable amount of motion in the joint may ultimately, in almost all cases, be obtained.

In the adjoining room you may see a few examples in illustration of this restorative power on the part of nature. In one child, Alfred Thistleton, in whom the destruction of the parts about the joint was so extensive, the fever so severe, and the

health so much impaired, that at one time I was on the very point of proposing excision, you will see that the child is now stout and well, that the limb is a very useful one, and the knee is only partially stiff. The relations have brought these children here to-day for inspection; for it is now many months since some of them were discharged from the Hospital, and, consequently, the lapse of time enables you to see that the cure is a permanent one. It is, in fact, I may mention by way of parenthesis, one advantage that we enjoy here, that we are usually able to keep sight of the case long after it leaves our wards, that we are able to watch the changes which subsequently occur, and, in cases of operations especially, to judge of their ultimate results; a great advantage, and one but too frequently overlooked or found impossible in hospital patients generally.

Whilst writing this lecture, I was glad to find my views on this subject corroborated and confirmed by a most eminent surgeon in Dublin, and one whose opinion might have been expected to incline differently, for he has been the great and successful advocate of excision; I mean Mr. Butcher. In his recently published *Third Report on Operative Surgery*, Mr. Butcher states, that it is "impressed strongly on his mind, nay, that it is his sincere conviction, that these severe operative measures will very seldom indeed be either warranted or called for" in children. That "repair in the young is to be looked forward to, to be depended upon as a certainty", and consequently that there should be "no hasty removal of diseased joints" in childhood.

Among the poorer classes, it is true, we have many disadvantages to contend with. Time, good air, and good living, are three great requisites in aid of our surgical treatment, but the demand for our beds is so urgent, that the first can seldom be afforded within the Hospital; and, as an out-patient, the child will seldom enjoy the two last, whilst it is deprived also, too often, of systematic care and of judicious nursing. Such impediments to success, as we cannot pretend to ignore them, must be fairly encountered and grappled with; difficulties exist in all cases, and in every sphere of action; it is the part of him who hopes to succeed in life, or who strives to conscientiously perform his duties, to be prepared for difficulties, to exert himself to his utmost to overcome them.

In bringing to a conclusion the first course of lectures ever delivered at this Institution, I may briefly state that they were undertaken because my colleagues, as well as myself, were most anxious to render generally available any information which this Hospital may afford; because we felt that our position here involved a trust, and that our offices had been bestowed upon us, not for our own individual advantage, but with the hope that we might contribute something to the knowledge of the diseases of children, and of their treatment.

INFLUENCE OF SEX IN THE DISEASES OF CHILDREN. According to Dr. R. Küttner of Dresden, long before the complete development of the sexual organs, even in the earliest infancy, diseases depend much on sexual difference. From a comparative examination of ten thousand cases of infantile diseases, he says that:—1. Boys, particularly in the first year, suffer more from inappropriate food and diseases of the digestive organs than girls of the same age, and a greater number of boys will perish in consequence of such diseases; the relative mortality being about the same in either sex. 2. Diseases of the brain and the nervous system in general, are twice as frequent in males as in females, particularly in and after the fifth year of life. 3. Umbilical and inguinal herniæ are more frequent in males than in females. 4. Diseases of the respiratory organs are more frequent in females after the third, and even more so after the fifth year. A larger number of such diseases prove fatal in females. 5. The same observation is made in organic diseases of the heart. 6. Acute diseases of the blood exhibit no perceptible difference as to sex, but chronic anæmia and scurvy-like decomposition of the blood is more frequent in females than in males, especially after the eighth year. At this age, the proportion of thus diseased females to males is ten to one. Scrofula and tubercles show no particular difference in the first years; but, after the fifth year of life, tubercles in the lungs are found more frequently in females. The number of cases of rachitis is pretty equal in the two sexes, but it is often developed at a later period, and is apt to last longer in females than in males. 7. Chronic diseases of the skin, particularly eruptions of the scalp, are more frequent in females than in males, after the ninth year. 8. The same is found to be the case in tumours of the thymus gland. (*Jour. für Kinderkrankheiten, and New York Journ. of Med.*)

Vacation Lectures

ON

FIBRINOUS DEPOSITION IN THE HEART:

ITS HISTORY AND PRACTICAL MEANING.

DELIVERED AT THE GROSVENOR PLACE SCHOOL OF MEDICINE.

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LECTURE I.

INTRODUCTORY REMARKS; *Plan of the Course*; *Different conditions of Blood in the Heart after death.* FIBRINOUS CONCRETIONS IN THE HEART: *their Forms; Structure; Weight; Chemistry; Process of Deposit; Post Mortem and Ante Mortem Deposits.*

[Concluded from p. 47.]

IV.—DEPOSITION BEFORE AND AFTER DEATH.

WHETHER the separation of fibrine from the rest of the blood in the heart, as it is found in many instances after death, is an act *post mortem* or *ante mortem*, is a question, which for more than a century and a half has caused more disputation than almost any other in pathological science.

Harvey seems to have been acquainted with "polypi" (for so the old men characterised fibrinous concretions) in the heart; and Malpighi knew that the white clots found in the heart after death in inflammatory diseases, were the same as that crust which forms on the surface of inflammatory blood. Kerckringius, a writer of no mean repute, opposed the view, that the "polypi" were formed before death. His hypothesis was ably met in 1684, by a countryman of our own, Dr. William Gould, who, in the *Philosophical Transactions* for that year, described fibrinous deposit with remarkable accuracy. He not only denoted the symptoms which attend the progress of deposition, but pointed out the diseases in which deposition is most imminent; and even the further fact, that there may be deposited a form of concretion from which portions of fibrine may be borne away, and, being carried into the extreme parts of the circulation, may plug up the finer vessels, and stop the nutrition of the part beyond. Morgagni was well conversant with concretions of the heart. He also knew their source. The principal and peculiar substance of which they were made, he taught to be the same as that which forms the crust of blood in inflammation. These concretions, he adds, are sometimes begun and even completed in the living body. He thought they might commence in cases of protracted syncope. We are now pretty well assured, all the world over, that there is such a thing as deposition of fibrine from the blood in the living body. It is also admitted by those even who see most clearly the full importance of this admission, that there is such a thing as separation of fibrine from the blood after death in certain cases. Let us consider both these positions with candid care.

Firstly, then, we may learn whether a concretion has been formed before or after death by examining the concretion, and by observing its relations to the surrounding blood.

There is one true and unmistakable form of *post mortem* concretion; that, namely, which I have marked first in my list of illustrations. I mean that separation in which the fibrine lies in a thin layer on an under stratum of red coagulated blood. Everything here points to the fact that the fibrine left the blood while the source from which it came was in a state of rest. No other explanation of this form of concretion is possible.

But, in reference to every other description of concretion which I have given, the evidence is equally clear in support of the view that they, whenever found, are of *ante mortem* date. I do not at present discuss how long before death any one of them may have been produced—that will constitute a subject of inquiry further on; but I say for the moment, that they are produced before death, and that they can only be explained as resulting from blood in motion. Where, for instance, there is a separated clot filling the whole of a cavity, such as the right auricle, it is certain that the clot must have been formed antecedently to death; for the simple reason, that there is no blood left in the cavity from which it could have been pro-