probably dependent upon a locking up of the sepsis in some of the cellular tissue planes of the pelvis. Cotte⁵ of Lyons has claimed to obtain marked relief of pelvic and abdominal pain in otherwise intractable cases from a division of the main trunks of the pelvic sympathetic where they lie in front of the fifth lumbar vertebra, and it may be that with the aid of this procedure we might bring help to some of the distressing cases I have cited. This sympathectomy as described by Cotte I have carried out in one case. It is simple and apparently has no untoward effects on function, and it is therefore specially worthy of consideration in those cases in which it has been decided in any event to open the abdomen—as, for example, for the performance of hysterectomy.

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TRAUMATIC AND OTHER AFFECTIONS OF THE KNEE-JOINT.*

BY

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THE knee-joint is more frequently damaged than any other joint in the body. Let us first consider simple uncomplicated traumatic synovitis of the joint, without a lesion of any important named structure. Such synovitis results from simple strains, blows, and kicks on the knee. The synovial membrane and capsule are slightly damaged by a tear or bruise, the site being indicated, perhaps, by local tenderness and pain. A small amount of blood is effused into the joint, but this is soon mixed with an excess of synovial fluid. The history, carefully inquired into, reveals nothing suggestive of a cartilage or other lesion, while the radiogram is negative. Routine examination shows that the joint can be fully extended. It is as well, perhaps, to emphasize the fact that the treatment demanded by this simple type of case must also form a part of the treatment of all forms of traumatic synovitis. Injuries of special structures call for special methods of treatment, and sometimes for postponement of those to be now discussed, but sooner or later these must be adopted before the joint can be restored to its full function.

Every synovitis is associated with two complications—weakness and wasting of the muscles, particularly of the quadriceps group, and a tendency to the formation of adhesions if preventive measures are not adopted. The objects of treatment are three: to get rid of the excess of fluid in the joint, to restore the muscles to their normal condition, and to obtain full movement, including rotation. These objects are best served by commencing active treatment at the earliest possible moment—that is, within twenty-four hours in an average case. This treatment consists of firm elastic pressure about the knee, massage to the knee and thigh, and faradic treatment of the anterior thigh group of muscles. The last is gradually replaced by active exercises. The pressure is best obtained by covering the knee with a thick layer of wool and a firm bandage. A special pad of wool or felt should be placed over the damaged portion of the capsule or ligament. The massage must be skilfully performed, soothing and not painful, and therefore must be gentle to begin with. The faradic treatment has certain great advantages: it can be used at once when the muscles are still suffering from a functional paresis almost amounting to paralysis. It can be graduated so as to cause contraction of the various muscles without at first producing movements of the joint, and it can be applied to every muscle in the group so that none be allowed to shirk. The tensor fasciae femoris and the vastus internus should receive special attention. The importance of the muscles in maintaining the stability of the joint and keeping it free from excessive fluid must never be forgotten.

*An address given at a meeting of the Nottingham Medico-Chirurgical Society.

This line of treatment I wish to emphasize particularly, because it is still far too common to meet with cases that have been treated by rest in bed for a month and the application of iodine. The former is unnecessary and the latter worse than useless, since the skin is rendered unfit for massage. After a month of this treatment the joint is often still distended with fluid, while the muscles are markedly wasted and will require prolonged treatment to restore them to their proper size and strength. As often as not the knee has been kept slightly flexed on a pillow, and full extension is impossible until the tissues at the back of the joint have been gradually stretched. Flexion due to this cause is distinguished from that due to mechanical obstruction by the fact that forcible passive extension causes pain at the back of the joint instead of the front. Rest is unnecessary in the milder cases, and even in the more severe walking can usually be indulged in after twenty-four to forty-eight hours. The amount of pain induced by walking should be our guide. We are not dealing now with gross rupture of ligaments. Active movements should be encouraged as soon as the patient can manage them. If walking be indulged in as early as possible, and electrical treatment carried out from the first, the muscles are never allowed to waste, and recovery is rapid. Golf and the more violent games which involve sudden twists and turns must not be allowed till the joint is free from fluid and the muscles are as large and as hard as those of the other leg. Rowing and cycling may be indulged in much earlier, and are useful and safe. Passive movements are hardly required if treatment is efficient from the first. In the nervous patient, and when active treatment has been delayed for any reason, they may be necessary. Gentle measures are usually better than violent.

The results of inefficient or injudicious treatment of a synovitis are chronic fluid, quadriceps insufficiency, adhesions, and occasional pain. The longer the knee remains distended with fluid the greater the laxity of the capsule and its supporting tendons, and the greater the difficulty in getting rid of this waterlogged condition of the joint. The fluid may have disappeared and yet the muscles be in poor condition. This wasting gives rise to a feeling of weakness, difficulty in negotiating stairs, especially descending, while there may be sufficient instability to give rise to symptoms which may easily be mistaken for cartilage trouble. Faradic treatment and exercises must be persevered with for weeks or even months before the muscles are completely restored to full vigour.

Adhesions should be avoided by restoration of full movement as early as possible. If present, however, and the injury be fairly recent, perseverance with physiotherapeutic treatment will probably cause them to yield, but if some few weeks or months have elapsed a manipulation under an anaesthetic will be necessary. Gas is unsuitable; ether is preferable, since absolute relaxation is necessary. What are the indications? Limitation of movement (not forgetting rotation), local pain when approaching the limits of motion, or both of these, and sometimes recurrent fluid. The longer the history the more reason for manipulating, and, if this fails, for exploring the joint. It is well known that a common site for local minor adhesions is the region of the internal lateral ligament, with limitation of flexion and local pain, and that manipulation in such cases is usually successful. In doubtful cases manipulation should be given a trial before resorting to operation. It is not very uncommon for a patient to complain of occasional pain, on certain days or after exercise, for months after an injured knee appears to have been completely restored to normal. Bruising of the articular ends of the bones is the probable explanation of this; in older patients osteo-arthritis will develop in the course of time.

Now let us consider some of the injuries to special structures which may complicate the synovitis. A fairly common injury is *strain of one lateral ligament*, usually the inner. The upper end of this ligament is damaged seven times as commonly as the lower. Local tenderness and pain on exerting a valgum strain on the knee, with or without some lateral instability, will be present. In the average case, seen shortly after the accident, it is worth while applying an outside splint to prevent the slightest

abduction of the leg, and a firm pad over the ligament, for a few days, when the patient may be allowed up, provided the inner margin of the heel of his shoe has been wedged. In addition, the usual treatment for the synovitis is carried out from the first. The vastus internus, sartorius, etc., on the inner side will require special attention. The possibility of adhesions must not be forgotten. Be sure that full rotation and flexion are restored. Complete rupture of the lateral ligament and capsule on one side, allowing the joint to be gaped, is best treated by operation and suture, as far as possible, of all the torn structures. Such a rupture can occur without serious damage to the crucials.

The anterior crucial—we need not worry about the posterior to-day—is tight in extension and in extreme internal rotation. It is damaged either by over-extension of the joint or by severe lateral bending, when it yields after one or other lateral ligament has given way and the bending strain continues to operate. In either case the ligaments generally have been badly damaged. If it is not deemed necessary or advisable to suture a lateral ligament, the knee should be put in plaster, in extension, for six weeks. The result of such treatment after a complete dislocation of the joint may be surprisingly good, provided the knee is immobilized early. There is general agreement that it is useless to try and suture a torn crucial. If this ligament is found damaged some weeks or months after injury, constructing a new ligament out of fascia lata (Hey Groves-Alwyn Smith operation¹) must be considered. Anyway, the condition of the muscles will be a decisive factor in the final result. Sometimes the crucial ligament, instead of tearing, elevates a fragment of bone from the non-articular area in front of the tibial spine; this will be referred to again later. The treatment of this is by operation.

Semilunar Cartilage Lesions.

The internal is far more frequently damaged than the external, probably because a valgum strain is so common. A small amount of lateral mobility in a slightly flexed knee is normal; in many knees, even and perhaps especially so in those who excel in the more violent games, this mobility is more than slight. How does the damage to the semilunar cartilage occur? When the inner side of the knee is forcibly gaped the cartilage is sucked in towards the centre of the joint by atmospheric pressure, and is then more readily caught between the bones. The inner condyle, instead of gliding over it, tears and carries with it a portion, or even the whole, of the cartilage. Twists of the femur on the fixed tibia are blamed by many surgeons for the damage, and no doubt this is correct in most cases, but violent extension, with or without combined rotation, must also be a factor in some. Preliminary damage to the internal lateral ligament, and partial freeing of the cartilage, to which the former is attached, is improbable, in view of the fact that damage to this ligament is certainly not very common in cartilage lesions, and would not explain many of them. On this point I entirely agree with my friend Mr. Bristow.² The posterior end of either cartilage may be damaged by abrupt flexion of the joint as well as by a twist.

The actual lesions found at operation vary considerably, but the commonest are, first, the so-called "bucket-handle," where the cartilage, or a strip of it, is freed through the greater part or the whole of its length, but is left attached at its extremities; and, secondly, a freeing of a part or the whole of the anterior extremity. A bucket-handle lesion of the posterior part only is not infrequent, and must be remembered when at operation the visible anterior portion appears to be normal. A double bucket-handle of either cartilage—two free strips attached only at their extremities—may occur, while a lesion of both cartilages in the same knee is occasionally met with. In one patient I removed all four cartilages; in three of these, at any rate, a definite traumatic lesion was present. The history one likes to get is that of a definite trauma resulting in immediate locking of the knee in moderate flexion, unlocking of the joint abruptly—with or without the aid of an anaesthetic—the unlocking being accompanied by a snap or click, and recurrence of this

sequence of events on at least one occasion. Unfortunately such a clear history is by no means always obtained. The more indefinite the history the greater the need for caution, it being remembered that in most cases the question of operation depends upon the history alone. The abrupt unlocking of the joint, particularly when accompanied by a snap, is often more convincing than the actual locking. In some the knee simply gives way with or without a click.

The history is apt to be less definite when the external cartilage is at fault. Tenderness may be present after a fairly recent injury, and is localized to the spot where the remaining attachment of the cartilage to the tibia and capsule has been strained. A common spot for this is the margin of the tibia a little to the inner side of the ligamentum patellae, as insisted on by Sir Robert Jones on many occasions. This corresponds to the anterior attachment of the internal semilunar cartilage, which must be strained when a bucket-handle type, for instance, gives rise to locking. If full extension is impossible this must be obtained by manipulation, with or without the aid of an anaesthetic, and then the synovitis should be treated in the routine way. The patient need not be kept in bed. I can confirm the experience of several of my friends that a knee that habitually snaps on flexion and extension is the seat of a lesion of the external cartilage. This is true of children as well as adults. Recurrence of locking due to a damaged cartilage, though the rule, is not inevitable. The cartilage may be nipped without being torn or grossly loosened, so operation should be delayed—provided the knee can be fully extended—till a second locking occurs. Always have radiograms taken to exclude injury of the bones. Nipping of a fat pad may give rise to similar symptoms. If the symptoms have been indefinite, but have recurred from time to time, or fluid has persisted or recurred over a period of a couple of years, the joint should be explored; in some cases operation is justifiable much sooner.

As to the operation, I now prefer the vertical incision for many reasons, one of which is the ease with which a wide exposure of the joint can be obtained, if desired—for example, when an unexpected articular cartilage lesion is discovered—by prolonging the incision upwards beside the patella and into the quadriceps tendon. This enables one to displace outwards the patella, as suggested by Fisher.³ When it is desired to examine carefully the external cartilage in addition to the inner, it is better to make a second incision on the outer side. The split patella operation is better avoided.

The classical *loose body* is traumatic in origin, and consists of a fragment broken from the joint surface of a bone. The typical symptoms consist of a momentary locking, followed by a varying amount of effusion. The original trauma need not be severe. Such a body, even though not giving rise to much in the way of symptoms, should be removed, in order to avoid the inevitable osteo-arthritic changes; if the joint is already arthritic the changes will be aggravated by the loose body if left in the joint. The body usually consists of bone and articular cartilage, the former dead, the latter living and growing, nourished by the synovial fluid. Sometimes the body contains no bone and gives no shadow in a radiogram. It is often impossible, particularly in an old-standing case, to locate the site from which a loose body has been broken without making a wide exposure of the joint, and this is usually inadvisable and unnecessary.

Damage to the articular cartilage is far more common than is generally considered to be the case. As already stated, bruises of the articular surfaces account for some of the cases of persistent or intermittent pain occurring for long periods after injury. Portions of articular cartilage, with or without a flake of underlying bone, are often separated, completely or incompletely, by violence on the football field in adolescent and adult males. The loose piece may look as if it had been punched out by a cheese taster, the hole having abrupt and only slightly shelving edges. A slipping patella may result in damage to the outer condyle or the deep surface of the patella. The latter bone, if examined during the course of an operation, will not infrequently show a sodden, fissured condition of its

cartilage, more often on the inner half, with cracks reaching down to the bone.

A not uncommon site for damage is the outer part of the inner condyle, adjacent to the intercondylar notch. This results from external violence, which drives the tibia inwards, the tibial spine impinging against the margin of the inner condyle, a portion of which is sheared off. Frequently the cartilage is left intact at one spot, so that the fragment remains more or less *in situ*. It is this condition which was described in 1888 by Koenig, who thought it resulted from an inflammatory process, a quiet necrosis, and called it osteo-chondritis dissecans. Most surgeons nowadays are convinced that these cases are purely traumatic. A subsequent trauma may complete the separation, setting the flake free as a loose body. If the flake remains *in situ*, persistent fluid is the chief feature, the true nature of the case being revealed by x rays. The partially detached fragment should be removed and the edges bevelled off. The prognosis is good—far better than might be expected. The exposed margins of the two condyles may be chipped off by a kick or blow. Twice I have seen the posterior end of one condyle flaked off, once by violence which seemed quite inadequate. Sometimes the spine of the tibia suffers rather than the femur from a shearing movement between the two bones, one or other tubercle of the spine being cracked off, without much displacement as a rule. The severity of the injury, rather than the small fracture itself, accounts for the somewhat slow recovery in these cases. Only if extension is blocked should the joint be opened.

Another type of injury, grouped as a rule, and quite incorrectly I think, with fractures of the tibial spine, consists in the elevation of a portion of the non-articular bone in front of the spine. In such cases forcible hyper-extension of the joint has resulted in the avulsion of the bone to which the anterior crucial is attached, instead of a tear of the ligament itself. The fragment is elevated in front, hinging on its posterior end. Full extension is usually impossible, probably because the elevated bone fragment impinges on the fat pad. These cases should always be operated upon, the fragment being pegged or sutured down into place. As regards the patella, it is not very uncommon to find a crack or fissured fracture which has been overlooked. It is well to remember, however, that very occasionally the patella ossifies by two centres; this abnormality is bilateral.

Another common type of synovitis is due to a mild and unsuspected osteo-arthritis which has been made to flare up by a recent trauma. The diagnosis is usually easy, in view of the age of the patient, the absence of any special point in the history beyond the mild trauma, perhaps the presence of physical signs of osteo-arthritis, and, lastly, the changes, slight perhaps but definite, which are seen in the radiograms. It is this type which gains so much from faradic treatment, for the tone of the muscles is of paramount importance, and yet cannot be regained by exercises without over-using the joint, the one thing which must be avoided at all costs, particularly in the early stages of recovery. Heat in one form or another is also an essential part of the treatment; it undoubtedly relieves the pain. Radiograms should always be taken, for loose bodies are, of course, not uncommon in osteo-arthritis, and their removal may be advisable. If giving rise to crises, however mild, they should be removed. If causing no obvious symptoms, if small, if situated at the back of the joint, if the general arthritis is gross, or the patient is elderly, they can often be left alone. Each case must be considered on its merits, with the help of good radiograms.

The knee is subject to that curious condition called osteo-chondromatosis, the chief feature of which is the presence of a number, often a large number, of loose bodies in the joint. These bodies are formed in the synovial membrane, and later become extruded, more or less, into the joint cavity. They consist of nodular masses of cartilage, with calcified or ossified centres, and vary greatly in size, many being minute. For the most part they lie in masses, held together by cobweb-like vascular adhesions, which are really outgrowths from the synovial membrane. In spite of their number and combined size, and the fact

that they are often known to have been present in the joint for many years, the general osteo-arthritic changes may be surprisingly slight.

Cysts of a semilunar cartilage behave much like a ganglion. Trauma probably plays a part in their incidence, and certainly aggravates them when once present. With rest they may diminish in size, or even disappear, only to enlarge again on resumption of active exercise. The external cartilage is almost invariably the one affected, the cysts occupying its peripheral border and the adjacent tissues. In a typical case a characteristic tense elastic swelling is found on the margin of the tibia, overlapping the joint line, and just in front of the external lateral ligament. They may give rise to no symptoms, but most patients experience discomfort or actual pain during and after active use of the knee, sufficient in many to interfere with work or play. In the adolescent without symptoms they may be left alone to see if they will disappear. I have known typical swellings disappear entirely and permanently in two cases. In the young adult, in whom they are usually met with, they generally require removal, and this means the excision of a third or more of the cartilage.

Knee Cases in Childhood.

Lastly I want to refer to some of the difficulties met with in the diagnosis of knee cases in childhood. In spite of their many tumbles, serious damage to the knee-joint is surprisingly uncommon in childhood, yet cartilage and other lesions do occur in the young, and perhaps more frequently than is generally believed. Symptoms seem to be less definite than in the adult—complete locking, for instance, is excessively uncommon in children. My experience, admittedly small, seems to show that, in childhood, developmental abnormality of a cartilage favours the incidence of symptoms, with or without traumatic lesions in addition, and that the external cartilage is far more commonly affected—the reverse of what is true in adults.

Apart from a transient mild synovitis following a simple strain, in childhood there appear to be three main types, characterized respectively by chronic or recurrent fluid, clicking in the joint, and recurrent symptoms more or less comparable to those familiar to us in the adult cartilage case. In the adolescent we also meet with "slipping patella" and with damage to the articular end of the femur—the so-called osteo-chondritis dissecans already referred to. I have not met with this latter condition under 14½ years. To take the clicking knee first, a typical example will suffice.

A child of 6 was seen on account of snapping in one knee-joint and slight wasting of the thigh. The snap occurred at about 70 degrees of flexion, and recurred on extension at about the same point. When it snapped something seemed to jump on the outer side of the joint. Trouble with the external cartilage was diagnosed, but in view of the age of the child, and the absence of any fluid, nothing was done. She improved, and for considerable periods the snapping apparently ceased, only to return. Two years after the first examination, in addition to the snapping, the knee was said to have given way suddenly on several occasions, and the joint became distended with fluid. Operation showed that the external cartilage only extended from its anterior attachment as far as the external lateral ligament, where it faded away to nothing; the posterior half was entirely absent so far as could be seen through an incision behind the lateral ligament. The anterior half was unusually thick, but not torn or displaced. Its removal was followed by a complete and lasting cure of all symptoms.

It is with the first type, that with chronic swelling and no special features, that difficulties arise in diagnosis. The two other conditions which have to be distinguished from the purely traumatic case are subacute or chronic infective arthritis and tubercle. In both of these a history of trauma at some time or other is common enough. It is when the trauma is remote that the difficulty arises. The appearance of the child and the family history may favour tubercle. Definite heat in the joint is against trauma, while the presence of fluid is definitely against tubercle, except in its later stages with abscess formation, when the correct diagnosis is obvious. The presence of undoubted sepsis in the tonsils, the commonest focus from which infection arises, may be an important factor. Briefly, the local conditions typical of each are: in pure trauma or mechanical defect, fluid; in infective arthritis, fluid *pilus*

some synovial thickening; in tubercle, definite synovial thickening and no fluid.

It is impossible to discuss the treatment of these cases fully, but, when difficulty arises, be on the safe side and rest the joint for a time. When it is impossible to exclude tubercle with certainty, though a diagnosis of another infection is favoured from the local signs and the presence of infective tonsils, arrangements should be made for enucleation of the tonsils without delay, and for removal at the same time of a fragment of synovial membrane through a small incision. Even when the tonsils have been removed this exploration of the joint may occasionally be advisable, but it is more often necessary in older patients when fluid is more likely to result from tuberculous infection, and the diagnosis is more difficult. Microscopic examination of the synovial membrane, and injection of a portion into a guinea-pig, appear to be more reliable tests than examination of fluid withdrawn from the joint, when this is possible.

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CAESAREAN HYSTERECTOMY.

WITH THE REPORT OF A CASE OF PRE-LABOUR SEPTICAEMIA,
AND OF CARCINOMA OF THE CERVIX IN LABOUR.*

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ALTHOUGH the indications for this operation are extremely limited the time has come for a reminder of the occasional necessity for its performance. The operation, although not very recent in discovery, is not very ancient; several workers adopted various procedures before it was really brought to public notice by Porro in 1877. Of his 138 cases 77 were fatal—that is, a mortality of 55 per cent. To Sanger and Leopold credit must be given for drawing attention to the fact that hysterectomy is usually unnecessary, and for making the modern Caesarean operation the "comparatively safe" procedure that it is at present. One of the reasons for this communication is to deprecate a certain tendency to radical measures, when milder methods are safer both as immediate and as remote risks.

The following have been suggested by different obstetricians as possible reasons for performing Caesarean hysterectomy:

1. Fibroids, with or without degeneration.
2. Carcinoma.
3. Sterilization.
4. Accidental haemorrhage.
5. Placenta praevia.
6. Rupture of the uterus.
7. Contraction ring dystocia.
8. Bad contraction of uterus after Caesarean section.
9. Neglected shoulder presentation.
10. In the presence of a faulty Caesarean scar.
11. Osteomalacia.
12. Decompensated cardiac disease.
13. In association with section after a ventral fixation.
14. Sepsis.

Fibroids.

It is a golden rule, so far as fibroids are concerned, not to interfere with them if possible in pregnancy, labour, or the puerperium. Sometimes, however, because of acute and unbearable pain, it is necessary to remove uterus and foetus at any time, usually about the sixth month; this, of course, must only be done after very careful thought. If the pain is so severe that something must be done, the alternatives are an endeavour to remove the tumours in the hope that the patient will carry on to full term, and we have carried out this procedure with success on several occasions; if this is impossible, the uterus should be emptied of the foetus; two or three months later myomectomy is done, in the hope that a further and successful pregnancy will occur at some future time. The removal of the foetus, however, is seldom indicated.

* A paper read before the Royal Academy of Medicine in Ireland.

When a patient comes under observation at full term, if vaginal delivery appears impossible because either of the possibility of tumours low down causing definite dystocia, or of the number of upper segment tumours which may cause inertia, it may be necessary to perform the Caesarean operation. The question "to leave or not to leave" the uterus is urgent. If we do not remove it another operation will be necessary later, or the tumours may degenerate in the puerperium; if we remove it we are adding to the danger of the operation. Caesarean hysterectomy for fibroids is an operation to be approached with extreme caution; many tumours are infected, and our experience in this class of case has not been pleasant. We prefer to adopt temporary measures, either allowing the woman to deliver herself, or performing a simple lower segment Caesarean operation with or without drainage, with the idea of removing the tumour or tumours at a later date.

Nyhoff¹ reports 19 hysterectomies in 250 Caesarean sections, and to our mind some of these hysterectomies are very deserving of criticism; three were for myoma uteri, but in his lengthy paper, which was very kindly translated from the Dutch for me by Mrs. Van Stockum, he does not give full data.

Anderodias and Loubat² reported an interesting case where pregnancy with fibroids was carried to term under great difficulty. At the Caesarean operation stinking liquor amnii was encountered, so hysterectomy was performed. It seems to me that the lower segment operation in this type of case should be perfectly safe without hysterectomy if the upper abdomen is not touched.

Carcinoma of the Uterus.

From a really practical point of view carcinoma of the body of the uterus need not be considered. To my mind the correct treatment of carcinoma of the cervix in the early months is hysterectomy without opening the uterus; if the condition is discovered near viability the cervix should be kept as clean as possible until the child is viable, when a true Caesarean hysterectomy should be done.

Recently at the Rotunda Hospital a woman, aged 28, a 5-para who had had four healthy children, was admitted complaining of a foul-smelling discharge. She appeared ill. The foetus was about 28 weeks, and the foetal heart was audible. On vaginal examination a freely bleeding cauliflower mass was discovered springing from the cervix. The os was about four fingers dilated and the membranes were ruptured. Believing that the haemorrhage which occurs in this type of case when delivered vaginally would kill the patient, Caesarean section was decided on. The uterus was opened, after which it was intended to remove the infant and then the uterus with the placenta *in situ*; but the latter presented; it was speedily removed, after which a live baby, weighing 2 lb. 13 oz., was delivered. The head showed a marked caput succedaneum, caused by the definite disproportion set up by the enormous growth. It was then found that the tumour was of a size larger than a clenched fist, and that it had retracted high over the head, and total hysterectomy was quickly done, for the patient was in a very low state, the pulse rate reaching 190 on occasions. Drainage was effected by gauze in the parametria and a cigarette drain in the cul-de-sac. She recovered from the immediate effects of the operation and has left the hospital. The infant has put on weight and appears likely to live. The pathological report was as follows.

Macroscopically.—The uterus is enlarged, and shows a recent operation wound on its anterior aspect; it corresponds to the post-partum uterus. There is a large cauliflower-like mass springing from the external os; on opening the cavity the uterus is full of blood clot, but presents no other abnormality. The tumour at the cervix is white in colour; on section it is outlined from the cervical tissue; the proliferation appears to be entirely exophytic.

Microscopically.—Sections show solid columns of rather large cells closely packed together and infiltrating the surrounding tissues. There are no cell nests present, but from the appearance of the cells and their arrangement there can be no doubt that they originated from the squamous epithelium of the portio; the line of cleavage between the malignant process and the cervical tissue is well marked, and is surrounded by a zone of small round-celled infiltration. The cervical tissue towards the uterus shows scattered areas of round-celled infiltration.

When the patient is at or near full term before labour starts Caesarean hysterectomy should be performed. We believe this is the best treatment, although section followed at a later period by the application of radium may certainly be considered; but the application of radium to the cervix before the birth of the child must be approached with caution. Goldstein and Murphy,³ in a recent com-