A British Medical Association Lecture ON THE DIAGNOSIS AND TREATMENT OF PLACENTA PRAEVA.

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BY

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THE subject of the diagnosis and treatment of placenta praevia is not only one of the greatest practical importance, but one much debated and upon which opinion is still divided.

DIAGNOSIS.

It is first necessary to ascertain whether the blood comes through the cervical canal or from disease of the lower genital tract—as, for instance, carcinoma of the cervix. This can be determined by examination with the finger and with the speculum. If the blood be found to come through the canal we have then to decide between a diagnosis of accidental haemorrhage or of placenta praevia.

The presence of placenta praevia may be conjectured if the haemorrhage has been repeated owing to the gradual stretching of the lower uterine segment and resultant separation of it from the placenta. The existence of a malposition of the foetus, or the finding of the foetal head too high or unengaged, more especially in a primigravida at or near term in whom the pelvis is not contracted, is also suggestive of the condition. It is possible that if the woman is very thin the placenta may be palpable as a boggy mass at the pelvic brim on abdominal examination, or that the head may be felt more clearly one side than on the other. An unusually loud uterine souffle over this area has sometimes been noted. Vaginal examination may reveal a spongy resistance in the fornices obscuring the presenting part. The absence of albuminuria is also suggestive; it is much more commonly present in accidental haemorrhage, although several cases have now been recorded in which this condition has been found in association also with placenta praevia.⁶

If, therefore, there is bleeding but no malposition, if the head is engaged and albumin is present, a diagnosis of accidental haemorrhage is suggested. If, on the other hand, the bleeding has been repeated, the head is high, there is a malposition, and albumin is absent, placenta praevia is the more probable diagnosis. But none of these symptoms or physical signs is of itself sufficient to enable us to establish a diagnosis. The only certain way to diagnose placenta praevia is to feel the placenta through the cervical canal; if then the spongy placenta can be felt the diagnosis is certain. Blood clot or a vesicular mole may be mistaken for the placenta; the former is distinguished by its friability and the ease with which the finger can be pushed through it. A vesicular mole is more difficult to distinguish, but the bleeding usually occurs far earlier in pregnancy; the undue size of the uterus in relation to the period of amenorrhoea and the inability to feel a foetus on abdominal palpation or to obtain internal ballottement serve to distinguish between the two conditions. It is rare that the cervix will not admit the finger; but if the cervix is closed, or if when open, the examining finger cannot reach the placenta, the diagnosis must still remain in doubt.

Now early diagnosis is an essential part of the treatment of placenta praevia. It has therefore been suggested that if, during the later weeks of pregnancy, the cervix be closed, an attempt should be made to establish the diagnosis by passing a metal dilator through the canal, for if on withdrawing it bleeding occurs the presence of the placenta can certainly be inferred. In almost all cases, however, the cervix will allow the finger to be passed if care and gentleness are employed.

TREATMENT.

We may first review the principles upon which the treatment must be based.

Nature's method of arresting bleeding from the placental site is threefold. It consists of thrombosis of the uterine vessels, and contraction and retraction of the uterine muscle. Of these thrombosis does not play a determining part, and contraction is effective only when the muscle is gripping the blood vessels, but is ineffective during relaxation. Retraction is the important factor, for the shortening of the muscle fibre is permanent. Now retraction can only be efficient if the uterus is empty. It therefore follows that the only efficient way to stop the bleeding is to terminate the pregnancy.

If this principle be accepted the next point that arises is whether, once the diagnosis is made, the pregnancy should be terminated forthwith, or whether we are justified in temporizing in order to increase the viability of the foetus. In this connexion it is necessary to take into account that permanent arrest can only be assured by complete retraction, and that until the woman is delivered she is open to the risk of further haemorrhage as the cervix and lower segment dilate, and so cause further separation of the placenta from the low placental site; nor is it known to what extent a further haemorrhage may be. Therefore a temporary cessation of bleeding must not be allowed to lull us into a false sense of security, for at any moment a fresh bleeding, and even one which may prove fatal to the mother, may occur.³ Further, the life of the foetus is always precarious, for not only is it usually premature, but it is liable to die of asphyxia during the process of delivery, and is sometimes weakened by loss of blood through injury to the placenta and the foetal blood vessels. It is not right, therefore, to risk the mother's life by delay in order to give the child a better chance, and in deciding upon the treatment the interests of the mother must be our first consideration. It follows upon this that once the diagnosis is made the pregnancy must be ended, and ended at once; hence an early diagnosis is of the utmost importance.

We have now to consider the method of terminating the pregnancy. Our choice of method must be guided by a consideration of the following points. The haemorrhage must be arrested temporarily during the process of delivery by means of pressure of some sort upon the exposed placental site; the delivery should be carried out at such a time as the patient is in a condition in which she will be best able to bear it, and conducted in such a manner that will entail a minimum of shock, of further haemorrhage, and of injury to the maternal soft tissues. *It is our intervention, therefore, which must be prompt, but the actual delivery must be slow.* The arrest of the haemorrhage and the delivery of the patient are two distinct and separate points. To do both at the same time is a confusion of aim and of ideas. There is everything to be gained by delay after the bleeding has been arrested, for not only is the patient given time to recover from her shock, but she is less exposed to the risk of further haemorrhage and laceration if the foetus is not rapidly extracted, but is allowed to be expelled subsequently by uterine contractions. The foetus also is less exposed to overmoulding of the head and to the other complications which rapid delivery entails.

The temporary arrest of the haemorrhage and the subsequent delivery of the patient may be effected by means of (a) rupturing the membranes and the application of a binder; (b) vaginal plugging and binder; (c) traction on the head if a vertex presentation; (d) the insertion of a hydrostatic bag; (e) version and plugging by the half-breech. The choice of which particular method is best suited for the individual case must depend, not only upon the size of the cervix and the position of the placenta; but also, and primarily, upon the condition of the mother, the amount of blood which she has lost already, and the probable amount of further haemorrhage which will be involved during the process of the delivery.

Except for the cases of placenta praevia which can be described as slight, in that the patient's condition is good, little blood has been or is likely to be lost, and in which the cervix is well dilated, uterine contractions are strong,

and the placenta is not easily reached—except for such “slight” cases the patient requires so much attention, so much time and care, that institutional treatment in either a hospital or nursing home is essential.

We come now to a review of the various methods of treatment and to their application, having regard to the general principles which we have just considered.

Rupture of Membranes and Application of Abdominal Binder.

The object of this method is to bring pressure upon the placental site by allowing some of the liquor amnii to escape so that the uterus may drive down the presenting part and compress it against the lower uterine segment. It is a simple method which can be carried out, not only easily, but with little risk of causing fresh bleeding during the necessary manipulation. It will clearly be suitable if strong pains are present, if the cervix is well dilated—that is, the patient is in active labour—if the placenta is not over the internal os, if the membranes can be reached easily, and the lie of the foetus is longitudinal. In such cases it is the ideal treatment. But its employment must be limited to such cases, as it is unsuitable if the cervix is not dilated and pains are absent, for an attempt to rupture the membranes might then result in causing further haemorrhage or stripping up of the membranes only; also, in the event of being successful in rupturing the membranes, it would be by no means certain that uterine contractions would follow. No pressure would then be exerted upon the placental site, and, if too much liquor amnii escaped, version, if thought desirable, might not be possible to effect.

In the presence of uterine contractions and an open cervix it is wiser not to delay the rupture of the membranes for too long if the margin of the placenta can be felt fairly easily, for further haemorrhage is likely to occur as the cervix continues to dilate, and so to bring about further stripping up and exposure of the placental site.

Schweitzer⁷ states that out of 333 cases of placenta praevia 22 partial cases were treated by rupture of the membranes with no maternal mortality; and according to Bourne,¹ of 17 cases treated at Queen Charlotte's Hospital by rupture of the membranes, with or without an abdominal binder, there was also no mortality of the mother. The foetal death rate for both marginal and lateral cases treated by rupture of the membranes was only 26 per cent., including all children irrespective of their maturity. The method is therefore an ideal one, but it is necessarily limited in its application to a certain group of cases in which strong pains are present, the cervix is dilated, the lie is longitudinal, and the placenta is not easily reached. For these it is all that is required and is to be strongly recommended; it entails little interference and the results are good. If the vertex is presenting, a firm abdominal binder is applied; if the breech is presenting, a leg should be brought down after rupturing the membranes, and in either case the labour is then allowed to proceed naturally. But for other cases in which the placenta is easily felt and in which uterine pains may be absent, some other method must be employed.

Vaginal Plugging.

The temporary arrest of the haemorrhage is here effected by the combination of pressure of the vaginal plug from below and the abdominal binder from above. The method acts further by stimulating uterine contractions, and allows the cervix to dilate. It is advisable first to rupture the membranes, or uterine contractions are not certain to come on soon. It must be carried out under the strictest precautions against sepsis, and it requires an anaesthetic.

At first sight the method presents many advantages. It entails no intrauterine manipulations, and its application is not so likely to bring on further bleeding as is any method which entails an instrument or the fingers being passed through the cervical canal; the size of the os is immaterial, and there is not the same danger of lacerating it or the lower uterine segment; no special apparatus is required, no damage is done to the foetus, and the mother is given time to recuperate if she is collapsed from a

previous haemorrhage. But, on the other hand, the method possesses many disadvantages. Uterine contractions do not necessarily follow within a reasonable time; the plugging may have to be removed and renewed, the risk of sepsis is extreme; the tight plug may cause lacerations of the cervix and vagina, and bleeding may occur above the plugging. Moreover, it demands a set surgical procedure under anaesthesia in order to be carried out effectually. It cannot be carried out effectually by the practitioner unaided, and if not so carried out it is not only useless but it is a positive source of danger from the risk of sepsis and of bleeding above the plugging. I know of patients who have died as a result of both of these causes from ineffectual plugging.

The disadvantages of plugging, from the risk of sepsis and of internal haemorrhage, far outdo the advantages, and its use in placenta praevia is not only inadvisable but is strongly to be deprecated, unless it be as a very temporary expedient. Its use in accidental haemorrhage is another matter. Jellett,⁸ quoting his experience at the Rotunda Hospital, Dublin, concurs in this view. He states definitely that it should not be employed in placenta praevia except in the rare instances where the cervix is not large enough to admit the finger; he regards it as a grave danger, and if it is necessary to use it, it must be removed within a few hours. Bourne¹ gives the following figures as the results obtained by plugging the vagina for placenta praevia at Queen Charlotte's Hospital between 1916 and 1922:

No. of Cases.	Variety.	Mother Recovered.	Mother Died.	Good.	Child Stillborn.	Child Died.
8	Central	6	2	0	7	1
14	—	14	0	1	7	5
17	Lateral	15	2	6	9	4
2	Unstated	—	—	—	—	—

This shows a total mortality (maternal) of 9.7 per cent. of 41 patients treated by plugging the vagina.

The Hydrostatic Bag.

The bag is inserted into the uterine cavity, the membranes having been ruptured. Gentle sustained traction upon it arrests the haemorrhage by pressure upon the exposed placental site. It further helps dilatation of the cervix, and at the same time stimulates uterine contractions. The results of its use are claimed to be more favourable to the foetus than by pressure with the half-breech.

Its disadvantages are that it is not always available in case of emergency, or if available it may leak, as it is liable to perish. It also tends to displace the presenting part, and so may bring about complications from a malpresentation. Not uncommonly it is expelled from the uterus without the presenting part coming down and without fully dilating the cervix, so that there is a loss of continuity of pressure upon the placental site and the recurrence of bleeding above the bag. It further has the drawback that considerable haemorrhage may accompany its insertion. Nor does the medical attendant feel secure after its insertion, since it may be expelled too soon and bleeding occur above it. This entails, after its insertion, the constant attention and presence of the practitioner. For these reasons, although it is a good method provided the patient is in an institution, it is not suitable for the emergencies of general practice. It must be borne in mind also that it requires an anaesthetic, and should therefore not be used unless the patient is in a condition to stand a further anaesthetic should other manipulations be required, either to arrest haemorrhage or to deliver the foetus, after the bag has been expelled, such as the forceps or version. In 6 cases of placenta praevia treated by the bag at St. Bartholomew's Hospital it was expelled before the cervix was fully dilated in every case, thereby necessitating the use of other additional methods subsequently.

Plugging by the Half-Breech.

In this method the bleeding is controlled by the pressure of the foetus itself against the placental site. Steady but gentle traction on the leg will not only control the bleeding

but will also, as in the case of the bag, help to dilate the cervix and stimulate uterine contractions. If the breech is not already presenting it will be necessary first to perform version. The best way to do this is to do external version and then to bring down a leg, as it entails less manipulation, and so less risk of accompanying haemorrhage from causing further separation of the placenta, than does the more usual method of bipolar version. Plugging by the half-breech requires that the cervix should be dilated enough to admit two fingers, but it is extremely rare that this criterion is not present by the time we are asked to see the patient. An essential part of the treatment is that, having performed an external version and brought down a leg, the labour should then be left to Nature in order to prevent laceration of the cervix and complications with the foetus.

The method possesses certain great advantages, for no special apparatus is required and an anaesthetic is often unnecessary. Moreover, continuous pressure upon the placental site is definitely secured. If the mother's condition is not good it is advisable, in that it not only stops the bleeding but it allows the mother to recover and to deliver herself naturally later on. It is undoubtedly the best available method in the majority of cases, and is especially applicable to the conditions of general practice.

Jellett² advises version and bringing down a leg as the best method. He states that it requires two conditions: (a) the membranes must be unruptured to allow version to be done; (b) the os must be big enough to admit two fingers. He finds the first is practically always present, and the second in "more than 99 per cent. of cases." In the rare instances where it is not he recommends that the vagina may be plugged for a few—but only for a few—hours, as he regards the pack as too dangerous. The os will then be sufficiently open to allow a leg to be brought down. He found in a collected series of 264 cases of placenta praevia so treated that the maternal mortality was 5.3 per cent., including moribund patients, and 3 per cent. only if these were excluded.

In Schweitzer's⁷ series about 40 per cent. were treated by a hydrostatic bag where the condition of the mother was good and the foetus was sufficiently mature. He noted that a fairly copious loss of blood attended its use, but it gave a better chance to the child. He considers that if the mother has already lost considerably version is much safer for her, though attended with a high foetal mortality. His results were 3.8 per cent. maternal mortality if the bag was used, and 6.6 per cent. if version was employed, but he specially states that this was selected for more serious cases.

Conrad² had a maternal mortality of 11.6 per cent. using the bag, and 7.6 per cent. from version. He found the foetal mortality was 50 per cent. by version and 16.3 per cent. with the bag.

There were no maternal deaths in the St. Bartholomew's Hospital series treated by the bag, but the foetus was stillborn in every case.

To sum up, in comparing plugging by the half-breech with the bag, the former has the great advantages that no instrument is required and the pressure on the placental site is continuous and assured, so that further haemorrhage cannot occur. These advantages are not present if the bag is used.

Traction on the Foetal Head.

Willett⁹ recently brought forward the ingenious suggestion of exerting pressure upon the placental site by means of traction on the foetal head. He has used for this purpose an instrument which is a modification of the haemostatic scalp forceps employed in cranial surgery. It is passed through the cervix and applied to the scalp where it presents over the internal os, traction being maintained, as in the case of the bag or the half-breech, by means of a weight attached to the handle. He has used it in vertex cases where the os is dilated enough and the placenta does not lie completely over the os. It arrests bleeding while it allows labour to proceed naturally. Dilatation of the cervix is assisted and uterine contractions are stimulated. He finds that it inflicts little damage upon the scalp beyond the formation of a cephalhaematoma. I have no personal experience of its use, but the method

appears to be simple and applicable to those cases in which the cervix is not sufficiently dilated to allow the bringing down of a leg.

Caesarean Section.

We have now to consider the arrest of haemorrhage and delivery of the patient by emptying the uterus through the abdominal route, so that all vaginal manipulations are avoided. The operation puts an end to the haemorrhage, and at the same time overcomes the risk of further bleeding during the subsequent delivery, which is at once accomplished. In the more difficult cases it gives the best chance to the child and it avoids for the mother any risk of lacerations of the cervix. These arguments, in addition to the ease with which it can be carried out, have led some observers to suggest that slight and suitable cases of placenta praevia should be treated by rupture of the membranes, and others by Caesarean section.

Watson and Miller⁸ of Edinburgh, in a statistical analysis of 254 cases of placenta praevia, most of which occurred in the Royal Maternity Hospital, and including several who had come in from a distance in a moribund condition, had a maternal mortality of 25—that is, 9.8 per cent. Of these 25 maternal deaths, 13 were due to ante- and post-partum haemorrhage, 6 to sepsis, and one each to myocarditis, eclampsia, duodenal ulcer, post-partum collapse and mania, embolism, and ante-partum haemorrhage, the last two dying undelivered. The foetal mortality was 64 per cent.

The placenta was central in 81 instances; of these there was a maternal mortality of 22 per cent. and a foetal of 82 per cent. The placenta was partial in the remaining cases, the maternal mortality being 4 per cent. and the foetal 59 per cent. They state that a consideration of the results of the different forms of treatment adopted appears to show that the best results, both for mother and child, are by the two extremes of treatment—that is (a) *conservative*, with either no intervention or a minimum of intervention, such as rupture of the membranes and plugging, and (b) *radical*, by Caesarean section. They found it was in patients treated by intermediate methods, such as plugging, together with version or the bag or other methods, that the high mortality occurred. Thus of 61 slight cases treated by conservative methods with the minimum of intervention only one mother died, and that from eclampsia, and the foetal mortality was 41 per cent. Of 14 cases treated by Caesarean section only one mother and one foetus died, giving a mortality rate of 7.1 per cent. in both. On the other hand, of 179 patients treated by the vaginal pack, together with version or the bag or other methods, the maternal mortality was 13 per cent. and the foetal 81 per cent.

This raises the advisability of relegating some of these patients in the intermediate group to the more conservative methods and others to the more radical, leaving a residue of some, upon whom conservative measures have failed, to the intermediate methods. They strongly emphasized the value of Caesarean section in the more severe type of cases. In the case of an elderly primigravida with a central placenta praevia it offered the only hope of a living child and entailed less risk to the mother. They consider, therefore, that the scope for Caesarean section might be increased and its wider adoption would tend to diminish the present high mortality rate for both the mother and foetus.

Conrad² performs the operation if the child is likely to survive, and gives a maternal mortality of 9.8 per cent. and foetal of 50 per cent. Schweitzer⁷ thinks that Caesarean section will be the treatment of the future wherever conditions are good. Ganssle⁴ regards it as the ideal treatment provided the child is living and viable and there is no obvious sepsis. He gives a maternal and foetal mortality rate of 6.4 per cent. by Caesarean section, and 8.7 per cent. maternal and 54.3 per cent. foetal when vaginal methods of delivery were employed.

Jellett, in a spirited reply to Watson, points out that the maternal mortality in a series of 264 cases was only 3 per cent. when treated by the vaginal methods of either rupturing the membranes or of pulling down the leg, which figure is far below the results from Caesarean section. He lays special emphasis upon the following points in comparing

the two methods: that the vaginal methods do not include the pack, together with version and the bag, as practised in Watson's statistics, but rupture of the membranes only in slight cases and version in the more severe. He regards the addition of the pack as a grave danger, and considers that no attempt should be made to dilate the cervix by the fingers; that the delivery should not be hastened unless the os is well opened and strong pains are present; and that the patient, once the haemorrhage has been arrested, must be allowed to recover before she is delivered.

We must also bear in mind that Caesarean section for placenta praevia has the special dangers of added shock, of further haemorrhage during the operation, and of sepsis.

In comparing the results from these two methods it is not only the actual method that we must consider but the manner of the subsequent delivery if the vaginal route is employed. Version and pulling down a leg is not of itself attended with much maternal risk, but it will be if the delivery is hurried and is not allowed to occur at a suitable time and to proceed at a slow rate. Caesarean section is obviously unsuitable in patients already suffering from shock and from severe haemorrhage. Here the indication clearly is to arrest the haemorrhage temporarily and to give the patient time to recover. But to deny all place to Caesarean section would be wrong. It is to be advised in the case of an elderly primigravida in good condition who is strongly desirous of a living child, in whom the foetus is alive at or near term, and the placenta covers the os, which is small and rigid. In such a case there is bound to be a considerable amount of inevitable haemorrhage; any vaginal manipulations necessary are certain to cause further haemorrhage, and the outlook for the foetus by the vaginal route is almost hopeless. By doing Caesarean section in such a case as this we can not only secure a living child, but considerably diminish the maternal risk.

SUMMARY.

The views which I have put forward and discussed may be summarized as follows:

1. Early diagnosis is essential.
2. Once the diagnosis is made the pregnancy must be terminated.
3. "Slight cases" are best treated by rupture of the membranes and a tight abdominal binder.
4. Plugging is inadvisable, except as a very temporary measure.
5. Certain selected cases may be treated by Caesarean section.
6. Most cases are best treated by external version and plugging by the half-breech. The labour in this case must be conducted slowly.
7. Institutional treatment is necessary in all but the "slight cases."

REFERENCES.

- ¹ Bourne: *Recent Advances in Obstetrics and Gynaecology*, 1926.
- ² Conrad: *Zentralbl. f. Gynäk.*, January, 1925.
- ³ Eden and Holland: *Manual of Midwifery*, 1925.
- ⁴ Ganssle: *Arch. f. Gynäk.*, March, 1923.
- ⁵ Jellett: *BRITISH MEDICAL JOURNAL*, 1925, vol. ii, p. 231.
- ⁶ Miller: *Trans. Edin. Obstet. Soc.*, 1924, xiv, 65.
- ⁷ Schweitzer: *Zentralbl. f. Gynäk.*, November, 1922.
- ⁸ Watson: *BRITISH MEDICAL JOURNAL*, 1925, vol. i, p. 363.
- ⁹ Willett: *Proc. Roy. Soc. Med.*, 1925.

TWO CASES OF MIKULICZ'S DISEASE TREATED WITH RADIUM.

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In 1892 Dr. Johann Mikulicz of Breslau published a paper¹ on a peculiar symmetrical disease of the lacrymal and salivary glands. Four years previously he had shown a case at a medical meeting in Königsberg. In this patient both lacrymal glands and all the salivary glands were converted into tumours in a perfectly symmetrical fashion, thrusting them out of their normal position, and deforming the face. The tumours had arisen gradually, and at the time of examination were dense, painless, and without a

trace of inflammation. The patient exhibited no other sign of disease. The following is an abstract of Dr. Mikulicz's notes of the case.

MIKULICZ'S CASE.

January 13th, 1888. The patient was a powerfully built, well nourished man of otherwise healthy appearance. Nothing abnormal was found in the internal organs. No albumin. No enlarged glands found elsewhere. The blood showed no special changes. Pulse and temperature normal. The face was extraordinarily altered in appearance by symmetrical swellings in the neighbourhood of the upper eyelids, and of the parotid and submaxillary glands. The orbital fissures were narrowed to small triangular fissures, the base of which was formed by the inner two-thirds of the edge of the lower lid. A certain amount of convergent strabismus had resulted from this condition.

On palpation a small knobby, dense tumour of transversely oval shape was found under the outer half of each upper eyelid. The conjunctiva itself was slightly reddened and a little thickened. The sight was unaffected. In the parotid area on both sides there was a flattish, not very prominent, and uniform tumour, extending forwards to the middle of the cheek, backwards to the mastoid process, and so lifting the lobule of the ear considerably. In each submaxillary region was a tumour about as long as a hen's egg, of dense consistency, and slightly movable. The two tumours almost met in the middle line under the chin. On opening the patient's mouth the sublingual glands presented as two elongated swellings about the shape and size of an almond set on its edge, and occupying the floor of the mouth on both sides of the frenum linguae. The glands of the soft palate exhibited an enormous increase in size, forming a sharply defined tumour as big as a chestnut on both sides, and being separated by a groove 0.5 cm. wide in the middle line. During the examination of the patient there was a free secretion of saliva, though there was no appearance of a flow.

As the swelling of the eyelids was the only thing which caused the patient much discomfort, a partial removal of the enlarged lacrymal glands was undertaken on February 1st, 1888. On either side a mass of tumour, about 2.5 cm. long by 1.5 cm. broad, was removed. Healing was normal, and the patient left the hospital in a few days, well pleased with the result. The improvement was, however, very transient; the swelling of the upper eyelids speedily recurred, and the patient returned to hospital at the end of March, the swelling of the lacrymal glands being then nearly as large as before the operation. Pilocarpine was injected in the hope that an increased secretion might reduce the size of the glands. No benefit resulted, and on April 19th the right, and on May 1st the left, lacrymal gland was extirpated. The patient made an excellent recovery, and was discharged ten days later.

He wrote on July 12th, 1888, that he was well pleased with his condition, and that he had no trouble with his eyes. The parotid glands appear to have gone on increasing in size, but they did not bother him. He died of perityphilitis early in August, 1888, after nine days' illness. During his illness the parotids rapidly diminished in size, and at the time of his death were almost normal.

Microscopical examination of the lacrymal glands removed by operation showed that the proper gland parenchyma played a purely passive part, and that the increase in size was due entirely to a voluminous infiltration of the interstitial connective tissue by small round cells (lymphocytes).

Two cases of what appears to be the same disease have been seen recently at the Radium Institute, London.

TWO NEW CASES.

Case 1.

A married woman, aged 62, was first seen on January 21st, 1924. She was referred to the Radium Institute for treatment by Mr. H. P. Gibb, F.R.C.S. She had consulted him for diplopia, which had existed for about eight weeks, and was obviously due to downward displacement of the left eyeball by an enlarged lacrymal gland. No very definite history could be elicited from the patient, but she thought that the swelling beneath the left upper eyelid had begun to be noticeable about nine months previously. She volunteered the statement that she had been in hospital in 1922 for a tumour of the spleen; but no further or more detailed information could be obtained.

The left lacrymal gland, which was the size of an unshelled almond, had displaced the contents of the orbit downwards and inwards, and the orbital fissure was much narrowed; diplopia was very marked. In the right parotid was a swelling the size of a golf ball; it was smooth and elastic, not fixed, and did not implicate the covering skin. In the upper part of the right parotid region was a small scar, indicating the site at which a portion of the growth had been removed for a pathological examination. The pathologist reported "lymphocytic infiltration of the tissues." The left submaxillary gland was swollen to the size of a thrush's egg. The right lacrymal, right submaxillary, and left parotid glands were unaffected. No enlargement of the spleen was appreciable. The blood count was normal. The Wassermann reaction was strongly positive.

The patient received a series of five sittings each of five hours' duration on five successive evenings, with applicators containing 120 mg. of radium element, screened with 2 mm. of lead, applied over and around the enlarged glands, so as thoroughly to irradiate them. The last exposure was given on January 25th, 1924.

She was examined again on March 24th, 1924. The swellings in the left lacrymal, left submaxillary, and right parotid glands had completely disappeared. The left orbital fissure was as widely open as the right, and there was no longer any diplopia.