judgment in making diagnoses and deciding on treatment, but I am persuaded that the potential skill of most doctors is considerably reduced by such aberrant activity. The commonest example is probably the way in which doctors share popular superstitions about the danger of cold air, but the grimmest example of all is, of course, when the patient's death results from such mistakes; but short of this I think one could trace more errors in medical practice to unconscious interference with knowledge than to lack of knowledge itself.

Conclusion

In summing up I would repeat the two main contentions of my paper: that there are few cases in which the unconscious mind of the patient does not play a part in the clinical situation, and, further, that the fact of the doctor possessing an unconscious mind is one of the importance of which is commonly overlooked.

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UTERINE RUPTURE FOLLOWING CAESAREAN SECTION

BY

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According to Eardley Holland (1920) 4 per cent. of Caesarean scars give way during a subsequent pregnancy or labour. Often this type of rupture is not accompanied by any abnormal signs or symptoms, and the surgeon, on opening the abdomen to perform a second section, is amazed to find a bulging sac of liquor amnii protruding through the old scar. At other times the clinical picture is one of shock or haemorrhage. None of these cases, however, resemble the ordinary type of uterine rupture which so often occurs as a terminal event in cases of obstructed labour and is described in the obstetrical textbooks.

Many cases of rupture of the uterus following a previous Caesarean section have been reported, and the condition may give rise to a perplexing and bewildering variety of signs and symptoms. An attempt is here made to classify this type of uterine rupture into five groups, with the object of facilitating its diagnosis.

Group I

In this group the rupture occurs through an old upper segment incision, and the placenta is situated away from the uterine scar. This is a common type.

Mrs. X., a woman who came under my care at St. Mary's Hospital, Manchester, belonged to this group. This patient was admitted to hospital during the last month of her first pregnancy. Her diagonal conjugate was estimated to be 4 inches and her interspinous and intercrural measurements were 9 and 9½ inches respectively. As the head showed no signs of entering the pelvis a medicinal induction was attempted. She did not tolerate the quinine, however, so drugs were discontinued and the patient was allowed to start in labour spontaneously. Trial of labour was unsuccessful, and I delivered her by Caesarean section twenty-three hours

after the onset of the pains. The classical operation was performed and the uterus sutured with two layers of interrupted catgut, an additional continuous suture being used for the peritoneum. She had a febrile puerperium, the temperature reaching 101.5° on several occasions between the second and the fourteenth day after operation. She was discharged from hospital on the twenty-second day in a satisfactory condition.

In 1936 she became pregnant again. During this second pregnancy the head never showed any sign of entering the pelvis, was extremely mobile, and "rode high above the inlet." It was often palpable in one or other iliac fossa. Towards the end of the pregnancy "overlap" could be demonstrated if the head were pushed over the pelvic inlet and pressure applied to the fundus of the uterus. As the patient had had a very fair trial of labour with her previous child, and as this second infant showed no signs of engaging in the pelvic cavity, it was decided to perform another Caesarean section.

We arranged to admit her into hospital on July 20, but on the morning of this same day she came in as an emergency. On being questioned she told us that she had been in labour fourteen hours before reporting at the hospital. The pains, she said, had been very bad most of the time, but their severity had diminished, and they had been less regular during the last one and a half hours. Her general condition was very good. The pulse was 80 and the blood pressure 120/80. She was having pains, but they were rather irregular and niggling in character. Immediate Caesarean section was considered advisable.

On opening the abdomen I was very much surprised to find that the scar of my previous operation had given way along two inches of its length. An intact bag of membranes was bulging through the aperture. The rest of the scar, which was a fibrous one, was thinned out and appeared to be on the point of bursting. The placenta was situated on the posterior wall of the uterus, and was nowhere near the scar.

This case impressed me very much by its lack of signs and symptoms. Many similar cases are to be found in the literature. Occasionally the bulging sac of liquor has been palpated through the abdominal wall (Casagrande, 1933). Sometimes foetal limbs have been recognized protruding through into the sac. These splits are often only discovered at operation. Prognosis is good when proper treatment can be administered.

CHARACTERISTICS OF GROUP I

1. Rupture tends to take place during labour.
2. Little or no haemorrhage occurs, and therefore the pulse remains good.
3. The pains may become niggling in type after the scar has started to give way.
4. The bulging bag of membranes may sometimes be palpated through the abdominal wall.
5. Prognosis is good provided that suitable treatment is available.

Group II

Group II consists of cases in which the rupture occurs through an upper segment incision and the placenta is situated underneath the old scar. This type of case is more serious, and presents a different clinical picture. When the placenta is situated underneath the old scar a gradual erosion of fibrous tissue by the placental villi occurs (Hornung, 1929). This erosion is an insidious one, and may cause marked attenuation of the scar during the latter part of pregnancy. In this type of case, therefore, rupture is said to be more liable to occur before the onset of labour. The eating away of the scar may be associated with vague pains in the lower abdomen (Potter, 1930). As the process is gradual, haemorrhage is seldom severe

until the onset of labour, when the uterine wall is pulled away from the placenta and the sinuses are left gaping.

A good example of this type is mentioned by Holland (1920). In his case the first Caesarean section was performed in 1914 for contracted pelvis. In August, 1915, the patient was readmitted to hospital. She was pale, and the pulse was 120 and of poor volume. A diagnosis of concealed accidental haemorrhage was made. On opening the abdomen it was found that the old scar had ruptured along one and a half inches of its length. Placental tissue protruded through the rupture and there were about two pints of blood in the abdominal cavity.

Another typical case has been reported by Casagrande (1933). In this instance the patient had her first Caesarean section at the age of 37. The puerperium was febrile. The second pregnancy terminated in a breech delivery with no complications. With the third pregnancy, five days before the expected date of delivery she presented a picture of considerable shock, with marked pallor, pale lips, and a weak and rapid pulse. On opening the abdomen the placenta was found bulging through the centre of the scar. There was a considerable amount of blood in the abdominal cavity.

CHARACTERISTICS OF GROUP II

1. Gradual rupture tends to occur towards the end of pregnancy. This may be accompanied by vague pain in the lower abdomen. Such pain should therefore never be ignored.

2. After the onset of labour haemorrhage occurs, and may be of considerable severity.

3. Prognosis will not be so favourable as in Group I, and will depend very largely on the amount of intra-abdominal haemorrhage.

Group III

In Group III the rupture occurs after a previous lower segment section. Several cases belonging to this group have been reported during recent years. The incidence of subsequent rupture is said to be reduced by using the lower segment technique. I myself feel doubtful about this, as I have seen very attenuated scars in the lower segment.

Mayer (1934) has reported a case of this sort in which operation revealed a very considerable haemorrhage suggestive of a laceration involving one of the uterine arteries. Perez and Tallaferro (1937) also reported a case, but in this instance part of the placenta was attached to the outer wall of the uterus adjacent to the scar, showing that the scar must have given way early in pregnancy. Trillat (1934) considers that these ruptures usually take place during labour, and there is an absence of pain. Jäger (1931) has recorded a case in which rupture extended into the bladder, causing marked haematuria.

CHARACTERISTICS OF GROUP III

1. Rupture is said to take place during labour. There is no very convincing evidence on this point.

2. Haemorrhage may occur, due to the extension of the laceration laterally into the uterine arteries.

3. Rarely, the bladder may be involved, giving rise to haematuria.

Group IV

Group IV comprises cases in which the rupture is complete, through an upper segment incision, and the child, within its bag of membranes, is expelled into the abdominal cavity, the placenta remaining *in situ*. In this type of case the uterine scar gives way along its entire length, the contractions persist, and the child is extruded into the abdominal cavity. The foetal heart sounds almost in-

variably disappear and foetal movements cease. The physical signs are characteristic. The uterus is felt to be pushed over to one side, and the child, floating in the abdominal cavity, is very easily palpable.

An interesting example of this variety has been described by Tottenham (1931).

This patient developed pneumonia after her first Caesarean section. Labour with the second pregnancy started at midnight. At 8.45 a.m. she was admitted to hospital. She came by tram, and walked a distance of a quarter of a mile up a steep incline. On admission the pulse was 80; she was in a very good condition, and the real state of affairs was discovered only on abdominal palpation. Section revealed a foetus lying enclosed in its bag of membranes in the peritoneal cavity. The placenta, in the vicinity of the scar but apparently not underlying it, was in the uterus. There was hardly any bleeding.

CHARACTERISTICS OF GROUP IV

1. Foetal heart sounds cease as a rule.

2. Foetal movements usually stop.

3. The uterus is pushed over to one side.

4. The foetus, lying free in the abdominal cavity, is easily palpable.

Group V

In this group the rupture is complete, through an upper segment incision, and the child, with its placenta, is extruded *in toto* into the abdominal cavity. A case described by Holland (1920) belongs to this group.

This patient had had a Caesarean section performed in March, 1914, after she had been in labour over eighteen hours. Convalescence was febrile. In March, 1916, when she was readmitted to hospital, spontaneous rupture of the uterus occurred. There was collapse anaemia, with cessation of pains, and the foetus was very easily palpable. The dead child, the placenta, and much blood were in the peritoneal cavity. The patient made a good recovery.

Potter (1930) stresses that the most dangerous cases from the prognostic point of view belong to this group, and says that this type is usually associated with severe haemorrhage and collapse, and often results in the death of both mother and child. Such cases fortunately are rare.

CHARACTERISTICS OF GROUP V

1. Often associated with severe intra-abdominal haemorrhage.

2. Foetal heart sounds are absent.

3. Foetal movements are absent.

4. The uterus is pushed over to one side.

5. The foetus, lying free in the abdominal cavity, is easily palpable.

Conclusion

All patients who have been subjected to Caesarean section should have subsequent confinements under skilled supervision and within access of a fully equipped operating theatre. If the indication for a second Caesarean is absolute, then the operation should be performed either during the last week of pregnancy or at the onset of labour. Unnecessary delay in these cases can do no good, and may be the cause of rupture of the scar, with its attendant dangers. Should the first Caesarean have been performed for any condition other than gross pelvic contraction, such as placenta praevia, minor degrees of contraction, etc., and should it be considered advisable to allow a trial of labour with a subsequent child, then the patient must be under the closest supervision not only

during labour but also during the latter part of pregnancy. Any abnormal symptom, particularly that of lower abdominal pain, must be regarded with suspicion.

Summary

Rupture of the uterus during a subsequent pregnancy or labour is not uncommon in those who have undergone Caesarean section. This type of rupture has been divided into five groups and the characteristics of each group briefly indicated.

My thanks are due to Dr. F. Lacey for permission to quote the case of Mrs. X. under Group I.

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THE NERVOUS COMPLICATIONS OF MEASLES

BY

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Nervous complications, it is recognized, follow most of the exanthemata, and the incidence is probably highest after measles. Boenheim (1925) gives the incidence in Berlin as 0.4 per cent., and this may not be considered an over-estimate if we remember that, as well as the severe cases which impress so much as to be included in the literature, we must also include the minor cases of mere drowsiness or slight meningeal irritation.

Pathology

This has been studied by Wohlwill (1928), Ferraro and Schaffer (1931), and Greenfield (1929). The last-named has summarized the abnormalities to be found in the central nervous system under three headings: (1) congestion and haemorrhage; (2) perivascular infiltration; (3) perivascular demyelination. The pathological findings appear to be identical with those occurring in post-vaccinal encephalitis, and in the forms of encephalitis following certain other acute fevers (as, for example, mumps and chicken-pox); it has therefore been suggested, especially by Greenfield, that the post-vaccinal and other forms of encephalitis which follow eruptive fevers are not directly due to the virus of the preceding fever, but to another independent virus which is either stimulated to activity or is directed against the nervous system by the exanthem. The phenomenon of demyelination also occurs in disseminated sclerosis and Schilder's disease, and it is possible that there is some connexion between them. The changes in the cerebrospinal fluid are variable. There is usually a moderate increase in the cells, mainly lymphocytes, up to about 200 per c.mm. The protein may also be increased.

Clinical Manifestations

These have been summarized by Ford (1928), who collected most of the authentic cases in the literature and added twelve of his own. He distinguishes six groups:

1. Mild and Transient Diffuse Cerebral Symptoms.—These include stupor, headache, vomiting, and possibly

even convulsions. There may be a suggestion of meningism, but the symptoms point to involvement of the brain rather than the meninges, and to a general toxic effect rather than local inflammatory damage. These cases may recover completely or may pass into one of the further groups.

2. Multiple Focal or Diffuse Lesions of the Nervous System.—The accompanying physical signs include spastic weakness of the extremities, tremor, choreic or athetoid movements, aphasia, or ataxia; or the condition may simulate either tuberculous meningitis or epidemic encephalitis.

3. A group of single focal cerebral lesions, aphasia or hemiplegia being the commonest symptoms.

4. Cerebellar Syndromes of Varying Degrees of Severity.—There may be localized or generalized ataxia, intention tremor, loss of muscle tone, slow or scanning speech, and nystagmus.

5. Paraplegia and Spinal Cord Syndromes.—An acute ascending paralysis may occur.

6. Other nervous complications—for example, toxic psychoses, and papilloedema.

The whole series of Ford's cases yield a mortality of about 10 per cent., which compares favourably with the mortality of 58 per cent. in post-vaccinal encephalitis in the English epidemic of 1922–3. About 60 per cent. of the survivors showed residual symptoms, such as weakness, ataxia, mental defect, or personality change. The time of occurrence of the nervous symptoms was extremely variable; they might appear as early as the height of the fever or even in the prodromal period, or as late as a month afterwards. The commonest times were on the third, fourth, or fifth day of the exanthem, and between the tenth and twentieth days of convalescence. As might be expected, the incidence was mainly in childhood, following the much higher incidence of measles at this period.

Case Report

The following case is an example of the post-febrile variety of measles encephalitis.

The patient was a married woman aged 31 with two children aged 6 and 3. The elder child was taken ill on August 26, 1936, and when seen by his doctor on the 29th presented a typical mild attack of measles, from which he made a good recovery. The younger child became ill on September 8. His rash did not appear till the 14th, six days later. He also made a good recovery.

On September 21 the mother complained of headache, malaise, and aching pains in the limbs; there was some coryza. The doctor saw her on the 23rd; her temperature was then 101° F., there was no rash, and no Koplik's spots were seen. In spite of this, measles was still suspected, as she had not previously had an attack. Her main complaint was of cough, but no physical signs were found in the chest. She had definite photophobia, preferring the blinds down. On September 27 two or three Koplik's spots were found, and the diagnosis seemed certain. No rash, however, developed; a temperature of between 100° and 103° F. persisted, together with the cough, which was associated with no physical signs until October 3, when there were moist sounds at the left base.

On October 5 she was admitted to Addenbrooke's Hospital, Cambridge, under the care of Dr. C. H. Whittle. She was then mentally depressed and looked ill, with slight cyanosis and an increased respiration rate. The only physical signs were in the lungs posteriorly, low down between the scapulae, where there was impairment of note, with bronchial breathing and fine rales. Her condition improved, and by October 8 there were no physical signs, her temperature was normal, and a radiograph of her lungs showed no lesion.