found to be giving similar reactions to the newly discovered anti-Fy^a. A detailed comparison has shown that of 62 Duffy-positive bloods all were positive with the serum of J. S. Of 29 Duffy-negative bloods all were negative or reacted very weakly with the serum of J. S. As the Duffy reactions of many of these bloods were previously known the numbers given do not constitute evidence of the frequency of the antigen in the general population. In the course of these tests the serum of J. S. was found to contain a trace of anti-A₁, which was easily removed by absorption with A₁B, CDe/CDe Duffy-negative cells. A further trace of one or more antibodies was also detected, consisting probably of anti-E and possibly of anti-c as well. Only in three cases did these antibodies give a reaction as strong as that of the anti-Fy^a. As we had used up all our serum and no more could then be obtained from the patient it was impossible to investigate these antibodies further. It is, however, clear that the main antibody in his serum is anti-Fy^a, and it is probable that this was the cause of his transfusion reactions.

We wish to thank Dr. H. Rogers, of Hillingdon Hospital, who referred this case to us and gave us much assistance; and Dr. R. R. Race, Dr. P. L. Mollison, and Miss Marie Cutbush, who carried out many of the comparative tests of the two sera.

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Medical Memoranda

Recovery from Strangulated Obturator Hernia

Obturator hernia commonly presents in elderly women and is usually diagnosed as intestinal obstruction or strangulation. The patient is emaciated and dehydrated—a poor subject for surgery. Therefore it is hardly surprising that the mortality is high. Watson (1939) collected 149 cases operated on, with a fatality rate of 48%. Meyer (1914) recorded a fatality rate of 54% and Grasser (quoted by McMahon, 1915) one of 81%, while Horine (1927) reported 47 cases with 29 recoveries, a fatality rate of 38%.

In view of the comparative rarity of the condition the following case is recorded.

CASE REPORT

On May 15, 1947, a woman aged 70 was admitted to hospital complaining of abdominal pain and vomiting of seven days' duration. Vomiting had been projectile in character and, latterly, faecal. She had passed no flatus for several days.

On examination she was seen to be a very thin old woman, somewhat disorientated, and a poor witness. Her tongue was dry and furred, and she was vomiting faecal-looking material. The abdomen was distended, especially centrally, and there was gross visible peristalsis. Tenderness in the right iliac fossa and rebound tenderness were present. Rectal examination was negative. A fair range of painless movement was possible at both hip-joints. A diagnosis of low small-bowel obstruction with, possibly, internal strangulation was made.

After four hours of continuous suction and intravenous saline her general condition improved slightly, though the physical signs in the abdomen remained unchanged.

Operation was performed under local analgesia with minimal thiopentone and cyclopropane. Greatly distended coils of small bowel were found, one of which was trapped in the right obturator foramen. The opening in the obturator membrane was stretched and the loop was withdrawn; though of a dark-purple hue, it was viable. The sac was evaginated and

removed, and the opening in the membrane was closed with one silk mattress stitch.

Convalescence was uneventful, except that the patient was extremely confused mentally for several days. She was discharged well eleven days after operation.

In view of the length of the history—seven days—and the age of the patient it is remarkable that she did so well. At no time did she complain of pain radiating down the inner side of the thigh to the knee (Romberg-Howship sign), but her condition on admission was so bad that she was unable to give a good account of herself.

My thanks are due to Mr. James Troup, senior surgeon, Royal Hants Hospital, Winchester, for permission to publish this case.

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Tuberculous Meningitis during Pregnancy, Streptomycin Treated

During the past two years in a series of 84 cases of tuberculous meningitis receiving streptomycin treatment at this hospital two patients developed their symptoms during pregnancy.

CASE 1

This patient, aged 21 years, had been ill for ten days with acute meningeal symptoms when admitted to this hospital on November 9, 1948. She was then at the 29th week of her first pregnancy and weighed 167 lb. (75.75 kg.). Shortly before her marriage she had been detected at her works radiographic survey as a possible early pulmonary case, but had neglected her follow-up arrangements. The pregnancy had been uneventful until the onset of her meningeal symptoms. The uterus corresponded to her period of amenorrhoea and the foetal heart was heard. She presented the ordinary clinical and cerebrospinal fluid findings of a tuberculous meningitis, and in spite of an active chest condition she was given streptomycin treatment at once. The diagnosis was subsequently confirmed by the culture of a human strain of tubercle bacillus from her fluid. She was given 100 mg. of streptomycin intrathecally daily for ten days, and then on alternate days for ten doses. Intramuscularly she received 1.6 g. daily, given in two equal doses at intervals of twelve hours. This was at the rate of 10 mg. per lb. (22 mg. per kg.) of body weight per day.

This treatment produced a good response and the meningeal condition improved, while there seemed to be no interference with the pregnancy. Serum streptomycin content varied from 2 to 4 µg. per ml. and cerebrospinal fluid streptomycin was from 2 to 4 µg. per ml.

On January 18, 1949, in her 39th week of pregnancy, she came quickly into labour and delivered herself spontaneously of an apparently normal female infant of 6 lb. 15½ oz. (3.16 kg.). She was transferred to the Royal Maternity Hospital, Belfast, and returned to us a week later. There was no break in her intramuscular medication. At the time of her delivery, ten weeks after starting streptomycin treatment, she had received 2 g. intrathecally and 112 g. intramuscularly. I have not seen the child, but I understand from Professor F. M. B. Allen, of the Department of Child Health, that it is apparently normal and healthy. He found it to be Mantoux-negative, and arranged for it to have B.C.G. vaccination before release of the mother from hospital.

The patient was given a further course of intrathecal treatment of 30 doses of streptomycin after her delivery. The cerebrospinal fluid of January 31 gave a culture of tubercle bacilli. Improvement has continued: intramuscular streptomycin was stopped on July 13 and she remains very well. She has recently been sterilized, with a view to returning home on completion of her infant's B.C.G. vaccination.

CASE 2

This patient, aged 29, was at the 15th week of her third pregnancy when admitted here on March 31, 1949, having been ill with meningitis for ten days. Her cerebrospinal fluid was clear and showed protein 120 mg.%; cells 147 (all lymphocytes); sugar 30 mg.%; chlorides 703. These findings were accepted as diagnostic of tuberculous meningitis, but the organism was not recognized or recovered on culture. Her pregnancy had apparently been normal, and she weighed 123 lb. (55.79 kg.). Treatment with streptomycin was at the rate of 100 mg. intrathecally daily and 600 mg. intramuscularly 12-hourly. Her meningeal condition responded well and she continued to feel foetal movements, although foetal heart sounds were not heard.

On April 11 she had a blood streptomycin level of 6 μ g. and a cerebrospinal fluid content of 8 μ g. At this stage Mr. H. I. McClure examined her, and considered her pregnancy a normal one of about 16 weeks' duration.

On April 22 her uterus emptied spontaneously, and she admitted that she had missed foetal movements for the previous two days. She was severely shocked, and curettage was carried out by Mr. McClure. Her recovery was uneventful, and she was discharged from hospital on August 4, apparently completely recovered.

Dr. J. E. Morison, of the Institute of Pathology, reported upon the uterine contents as follows. "Foetus and membranes correspond to about 18 weeks' pregnancy. It is possible to exclude by gross examination any congenital malformation of the heart or great vessels. The lungs and brain seem to be developing normally. There is most extensive calcification of the chorionic villi. At this stage the appearances are very unusual: it is not possible to regard them as distinctive or specific and similar, though less extensive changes have been seen in other abortions where no pathology could be demonstrated. The relationship of the changes to the therapy with streptomycin must await further cases or reports from other centres. On the whole, any specific connexion appears unlikely."

Apart from the colleagues mentioned, I am also indebted to Dr. G. F. W. Tinsdale for laboratory records and to Dr. L. V. Reilly for the streptomycin levels and typing of the organisms. Dr. F. G. Grant, of the Royal Maternity Hospital, Belfast, is at present preparing a thesis on this material for his M.R.C.O.G.

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Examination of Young Children with Acute Appendicitis

Acute appendicitis is not a common illness in children under the age of 4. When this diagnosis is suspected in a very young child the examining physician or surgeon is faced with two difficulties. First, the child is not able to give a concise history or accurately to locate its pain. The parent usually states that the child has suddenly become irritable and peevish, refused its food, and perhaps vomited once. There is generally some alteration in bowel habit either in the form of constipation or the occurrence of one rather loose and copious motion followed by constipation. The manifestation of pain is limited in the early stages to irritable crying and fretfulness, with the occasional passage of the child's hand across its abdomen. Fortuitous pressure on the abdomen while the child is being comforted causes more pronounced crying and fretfulness, without the necessary explanation.

The second difficulty is in the adequate physical examination of the abdomen. With the child in the recumbent position and able to see what is intended, any

approach to the abdomen causes such resentment and apprehensive crying that palpation in order to assess localized tenderness or rigidity becomes almost impossible. To wait by the bedside for a more favourable moment does not usually help matters, for the pain of acute appendicitis is constant, and each fresh approach to the abdomen is resisted by the child. This is in sharp contrast with the events in cases of intussusception, in which, the pain being intermittent, it is usually possible by awaiting a favourable moment to carry out a satisfactory palpation of the abdomen in between attacks of colic.

I have been so baffled by this difficulty in palpating the abdomen in several children under the age of 4 who were in fact suffering from acute appendicitis that I have evolved the following method of physical examination in such cases, with results which have so far rendered positive diagnosis possible. I claim no originality for this method, but have found it so useful on occasions that I place it on record in the hope that others who may not have tumbled to it may find it helpful.

METHOD

The child is held by the mother or nurse in the position in which a fretful child is comforted normally—that is, clasped to its mother's breast with its arms and legs embracing its mother.

From behind, the examiner then places the palms of both hands on the anterior-superior iliac spines, with the fingers extended across the child's abdomen in the direction of the umbilicus (see photograph), but no pressure is exerted by these fingers in the first instance. The child usually gives a wriggle of resentment when the hands are first applied, but as no pain is caused and as it cannot see what is happening this resentment soon passes off. The hands are maintained in position until the child is quiet, and then gentle

but increasingly firm pressure is exerted by the extended fingers overlying the *left* iliac fossa. This again causes resentment and irritability, which subsides in a short while. Similar pressure is then exerted in the *right* iliac fossa by the fingers of the other hand while easing the pressure on the left. In positive cases the contrast is striking. Instead of a wriggle of resentment the child gives a sharp cry of pain, and, if the pressure has been applied gradually, local muscular rigidity can be felt before it is masked by the generalized rigidity which results from crying.

It is not always possible to carry out this examination more than once, as the child becomes wise to events. But, carefully done once, the signs are so positive that operation can be confidently recommended on the findings.

Photograph showing position in which the child is held.

ROBERT STRANG, Ch.M., F.R.C.S.