rigidity which is known as tonic uterine contraction. Such a condition is very serious, and it called to a case the midwife can readily discover it by the condition of the patient, whose pulse will be quick, face anxious, tongue dry, temperature probably raised, uterus continuously hard, and at its lower third there will be felt a groove running transversely. This groove corresponds with a ridge on the inner side, and it is known as the ring of Bandl. Most authorities believe that this ring marks the division between the contracting expelling fibres above and the relaxing passive fibres below. Be that as it may, whenever felt it shows that there is a case of obstructed labour. Of course the midwife ought never to let a woman get into this condition, because she ought to recognize long before that the case will develop into tonic contraction unless medical help is given. The midwife may not be sent for until it has arisen, but the moment she diagnoses the condition a doctor must be called.

Locked Twins.

Sometimes when a child is born breech first no progress is made after the lower extremities and a portion of the body have passed the vaginal outlet. This may be due to extension of the head and of the arms above the head, a condition which requires medical help. But it may be due to locking of twins, the head of the second child entering the pelvis before the head of the one already partially born. A careful vaginal examination under strict asepsis ought to enable this condition to be detected.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, March 10th, 1906.

ACUTE STREPTOCOCCAL SEPTICAEMIA OCCURRING AT THE MENSTRUAL PERIOD.

By W. E. CARNEGIE DICKSON, M.D., B.Sc.,
M.R.C.P. EDIN.,

LECTURER ON PATHOLOGICAL BACTERIOLOGY, AND SENIOR ASSISTANT
TO THE PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF
EDINBURGH; ASSISTANT PATHOLOGIST TO THE EDINBURGH
ROYAL INFIRMARY, ETC.

THE *post-mortem* examination on the following case was made at the request of Professor Greenfield, and is of some interest in helping to clear up the diagnosis of an otherwise somewhat obscure and difficult case.

HISTORY.

The patient was a school girl, aged 18, under the care of the late Dr. Sym, who kindly supplied me with the following synopsis of the clinical history. She was born and brought up in British Guiana, and had come to Edinburgh for her education. There was an indefinite history of some old rheumatic condition; she had never suffered from malaria, and the only other point of importance in the previous history was the occurrence of a discharge from the ears in childhood.

Her illness commenced on October 23rd, 1904, as a slight tonsillitis and sore throat, the temperature being at that time 98° F. The patient was menstruating, her appetite was completely gone, but, except for the sore throat, she did not complain of any pain. Next day severe diarrhoea and some vomiting supervened, and the temperature went up to 102° F. The heart's action was rapid and irregular, and there was a systolic murmur present at the apex. A tense, diffuse swelling was found in the region of the left parotid, extending half way down the neck, and very tender on pressure. The temperature remained up, and the patient gradually got worse, and died on the evening of October 27th, 1904, the provisional diagnosis being acute septicaemia arising from the local inflammatory condition in the region of the left parotid gland.

NECROPSY.

The *post-mortem* examination was performed early on the following morning.

The body was that of a somewhat slightly built and rather emaciated girl. It was still warm; *post-mortem* rigidity was well marked in the limbs and in the muscles of the jaw, but absent in those of the neck; there was well marked *post-mortem* lividity of the back, together with some slight mottling over the front of the limbs and trunk. The subcutaneous veins were very distinctly outlined, suggesting some septic condition, and there were scattered here and there over the body several bruise-like marks ranging from about the size of a shilling to that of a penny in diameter, evidently *ante-mortem* haemorrhages; there were also a few smaller and brighter subcutaneous haemorrhages, 1 to 2 mm. in diameter, over the limbs, and a large subconjunctival haemorrhage with its base towards the cornea in the right eye.

In the region of the left parotid, beneath the pinna and behind the angle of the jaw, there was a firm, tense, non-fluctuating swelling, somewhat diffuse, and passing half way down the neck, and also slightly over the ramus of the lower jaw on to the face. The cervical glands were distinctly enlarged all the way down to the clavicle. On incising the swelling it was found to consist for the most part of hard, firm parotid gland tissue, pale white in colour, and with no sign of softening or suppuration. Around the gland there was considerable inflammatory oedema and matting of the tissues, in which were embedded numerous enlarged lymphatic glands, some dark red and soft on section, others white and firm, and others, again, showing a mixture of both conditions. These were specially marked just behind the angle of the jaw, and were in close connexion with the left tonsil, which was slightly enlarged, and congested, the crypts being very well marked but not containing any purulent material; there was no abscess formation. The right tonsil was also slightly enlarged, and on section showed a greenish-grey colour, with some softening, the neighbouring lymphatic glands being somewhat enlarged. There was no ulceration of the tonsils, fauces, or pharynx.

Thorax.—There were no pleural adhesions or pleurisy. The lungs showed very acute congestion and oedema of their lower lobes, and the bronchi were acutely congested. There was no pneumonic consolidation nor any sign of tuberculosis, and there were several small recent pulmonary infarctions. The pericardium contained 2 oz. of clear straw-coloured fluid, but there was no pericarditis nor petechial haemorrhages. The heart was very small and flabby, and showed marked diffuse red staining of the endocardium of all its cavities, and of the aortic and pulmonary valves, which otherwise showed no special changes. The tricuspid, in addition to the red staining, presented some oedematous swelling of the free margins of the cusps; and the mitral showed similar changes, together with some irregular thickening of its attached margins.

Abdomen.—The peritoneal cavity contained no fluid, and there was no peritonitis present. The liver showed intense cloudy swelling, together with considerable fatty change. The spleen was much enlarged, and very soft, a condition of acute congestion. The kidneys also showed intense cloudy swelling. The stomach was considerably distended with gas, and contained a small amount of black, blood-stained mucus; over the entire mucous membrane there being scattered innumerable bright red petechial haemorrhages closely crowded together. There was no ulceration, and the pylorus was somewhat firmly contracted. The duodenum and upper part of the jejunum were extremely congested, and showed great oedema of the mucous membrane, especially over the valvulae conniventes, and the solitary lymphoid follicles were somewhat swollen. The caecum was very congested, and contained a considerable quantity of black altered blood, a condition which was also found in the ascending colon, the lymphatic glands in the neighbourhood of these being enlarged and congested. The mesenteric and retroperitoneal glands and the glands at the brim of the pelvis were also considerably larger than normal, and showed no signs of tuberculosis.

Pelvis.—The uterus was of normal size; it was very soft, and the os very patent, the interior containing a small, well-marked blood-clot, and the mucous membrane was intensely congested. The Fallopian tubes were longer than normal, and very red in colour. They were soft, and contained a quantity of light creamy red, thin, purulent material which distended them, especially towards their upper ends. The ovaries were very soft, and both contained numerous small cysts full of fluid. The bladder was contracted and empty, and its mucous membrane appeared to be normal.

Bone Marrow.—That of the ribs was absolutely fluid and presented the appearance of pale watery red blood; the marrow of the femur was like black currant jelly in colour and consistency, the tissue throughout the entire shaft being affected and suggesting the presence of intense and diffuse haemorrhages into it.

Cultures were made from:

1. Parotid gland.
2. Cervical gland.
3. Left tonsil.
4. Fallopian tubes (both).
5. Spleen.
6. Heart muscle.
7. Bone marrow (femur).

In every case pure cultures of *B. coli* were obtained, except in the case of the bone marrow, from which a growth of streptococci was also got.

Microscopic Examination.

The parotid showed very intense cloudy swelling of the glandular cells, some catarrhal changes in the ducts, and considerable infiltration of the fibrous tissue, with mononuclear cells and a few polymorphonuclear cells, more especially around the ducts of the gland. The axillary glands were much congested, and showed considerable proliferation of the endothelial cells lining the sinuses, the cervical glands showing similar changes, with, in addition, a large amount of blood pigment in the actively phagocytic endothelial cells. The left tonsil was intensely congested, and contained areas of haemorrhage and necrosis, the latter being at parts crowded with Gram-negative

bacilli, apparently *B. coli*. The purulent material from the Fallopian tubes showed very numerous streptococci, mostly in pairs and short chains, together with large numbers of desquamated epithelial cells and mononucleated leucocytes, there being almost no polymorphs present. Films made from the uterine mucous membrane showed numerous streptococci mixed with various bacilli. The spleen showed plugs of streptococci and *B. coli* in the small arteries, and the pulp was intensely congested, with numerous haemorrhages. Intense cloudy swelling was found in the liver, kidneys, and pancreas. The changes in the bone marrow were very interesting. Its naked-eye appearances have already been described. Sections of the rib marrow showed extraordinary congestion and large areas of haemorrhage, some quite recent, and others showing nothing but fine granular material with here and there the faint outlines of disintegrating red blood corpuscles, or a fine network of fibrin. There were crowds of streptococci both in the vessels and in the tissue, the fat cells being completely absorbed. Very few granular myelocytes and erythroblasts were seen, most of the cells found scattered among the red blood corpuscles closely resembling lymphocytes in appearance, though in all probability they were earlier cells of the leucocyte-forming series in which granules had not yet appeared, maturation of these cells being prevented by the intense action of the bacterial toxins present. No eosinophile cells could be found. In the marrow of the long bones similar changes were found. The fat was almost entirely absorbed, a sort of acute gelatinous degeneration resulting. Large areas of necrosis were found surrounding groups of streptococci, which were present both free in the tissues and plugging up the vessels. Throughout the whole marrow there were very numerous enlarged endothelial cells, some of them forming a sort of branching plasmodial network of very actively phagocytic cells filled with the remains of red corpuscles and blood pigment.

The case, therefore, appears to be one of acute streptococcal septicaemia, the presence of the *Bacillus coli* being probably a terminal phenomenon. Though the source of infection may have been the throat or intestine, I am inclined to think that the condition of the uterus and Fallopian tubes pointed rather to these organs being the origin of the bacterial invasion, and that the case may be regarded as one of "menstrual septicaemia," precisely analogous to puerperal septicaemia, and due to infection occurring in a somewhat delicate girl during the menstrual period.

The scarcity of polymorphonuclear cells in the various inflammatory lesions is interesting, and is accounted for by the degenerative changes in the bone marrow brought about by the extreme virulence of the streptococci causing the septicaemia. Another point of interest is the occurrence of swelling of the parotid gland, which was regarded clinically as being the cause of, rather than as one of the results of, the septicaemia, the latter view being in all probability the correct one.

A CONSIDERATION OF SOME OF THE FACTORS WHICH CONTRIBUTE TO SUCCESS IN ABDOMINAL OPERATIONS.*

By J. H. DAUBER, M.A., M.B., B.Ch.Oxon.,
GYNAECOLOGIST, HOSPITAL FOR WOMEN, SOHO.

I HAVE been interested in abdominal and pelvic surgery for the past twelve years, and have been operating and assisting at operations during this time, and have also witnessed a great number of operations at home and abroad. As is but natural, I have formed certain opinions as the result of my observations as to the chief desiderata in abdominal surgery, and it is with some of these I propose to occupy a short space of your time to-night.

SELECTION OF CASES.

It is obvious that a surgeon who will only operate upon selected cases will, other things being equal, obtain better results than the man who operates upon each case as it comes. On this account it is difficult to compare operators one with another. One will accept risks which another will decline, and so mere statistics are of little value as a criterion of surgical merit. It is only by direct observation that a man's work can be judged.

Old people in my experience bear abdominal operations well, provided the duration of their performance is not too long. Cases of malignant disease stand in a class by themselves, and are always attended with greater risks. The mortality amongst them is proportionately much

higher than in non-malignant cases. Operation upon them often has to be very free, involving all organs, glands, and tissues that have been actually or probably invaded by the cancer cells. The subjects of malignant disease are often debilitated, aged, septic, and broken down with pain and long suffering. They therefore need especial care.

PREPARATION.

Most patients previous to operation are in a state of nervous tension and impressionable mental condition. Therefore, every influence about them should be optimistic. Nurses should refrain from discussing similar or any operations with their patients. Too many nurses in my experience forget that, though speech is silver, silence is gold. As little as possible of the preparations for operation should be subjected to the view of the patient.

The question of the best anaesthetic to be employed is too large to be entered on here. If there is any suspicion of bronchial trouble I ask that chloroform may be used. That anaesthetic is generally to be preferred to which the anaesthetist is most accustomed. It is well to give the anaesthetist a free hand. The surgeon has his own hands sufficiently full without having to concern himself with the administration of the anaesthetic. It is important, however, to him that complete relaxation of the abdominal muscles should be maintained throughout.

Oral asepsis must previous to operation receive careful attention. Carious teeth and purulent gums are often productive of toxæmic symptoms, and parotitis and parotid abscess are not the least of the troubles that may be caused thereby. It may be necessary to requisition the services of the dentist, though patients often resent this with unusual vigour. At all events, the nurses cannot be too assiduous in their endeavours to keep the buccal cavity in a clean and healthy condition.

Before operation the skin area prepared by compresses is, according to my view, not always large enough. The course of operations, like that of true love, does not always run smooth. Emergencies arise, more handling of the patient becomes necessary than was anticipated; therefore let a large area be prepared. The same applies to the preparation of the skin when the patient is actually on the operating table. I generally cleanse with (1) ethereal soap, (2) methylated spirit, and finally 1 in 2,000 biniodide in spirit, using all three freely—groins, loins, lower ribs, and pubes being included.

Patients should not be kept too long in hospital before being operated upon. Their valour certainly goes, "it oozes out of the palms of their hands," as it did, if you remember, in the case of Bob Acres in the *Rivals*. A week in the wards is often too much for them, and they leave the hospital unhappy and unoperated upon, the tension having become insupportable. On the other hand, no patient with an inflammatory condition and high temperature should be operated upon, unless it is an urgency case, for a few days after admission. So often the temperature of 103° becomes in a few days three or four degrees less with rest and treatment, when operation can be more safely undertaken. Whenever possible, peritonitis should be given a chance to subside before the commencement of surgical procedures.

I have noticed that patients are often subjected to too cold an atmosphere before entering the operating room. Warmth, and a continuous high degree of it, is essential from the moment the patient leaves his or her bed until returned to it. The anaesthetizing room should be as warm as the theatre. The operating table should contain hot-water apparatus. It is a mistake, in my opinion, for patients to be returned into a general ward while intoxicated with the anaesthetic. It is an unnecessary and barbaric practice. To have an intoxicated, shouting, vomiting woman on one or both sides for some hours frightens and often completely upsets a nervous woman, quite unused to hospital life, and herself expecting to be operated upon in a day or two. I have seen this, and have been vexed and pained by it. The practice should be abandoned. As there is a "cooling room" for those who indulge in Turkish baths, so there should be, so to speak, a "cooling room" for people coming round after operation. They should not be let loose upon a peaceful ward until quiet. But this room, or any room for the reception of patients after operation, should be warm. If warmth is essential before operation it is doubly so afterwards.

* A paper read before Chelsea Clinical Society, April 16th.