or a generally sodden appearance, no further indication is required.

In passing, it may be said that when this sodden appearance is present, and the knife cuts not crisply but as if passing through soaked blotting-paper, the opening thus made is frequently permanent, or at any rate remains for long periods; for the membrane has become so disorganised as to impair its tendency to repair.

ACUTE SUPPURATIVE MIDDLE-EAR DISEASE IN INFANCY.

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I HAVE had during the last three months under my care four cases of acute suppurative middle-ear disease in young infants. The children were all under 6 months of age, and in none of the cases was there any history of specific fever, diphtheria, or injury to account for the onset of the disease.

The earliest symptoms were restlessness, vomiting, refusal of food, and feverishness. In 2 of the cases the abdomen had been carefully poulticed and teething powders administered under medical directions. One of the cases simulated acute meningitis, and in another no treatment had been applied to the ear until the child was brought to me suffering from complete unilateral facial paralysis. In this case the onset had been insidious, constitutional disturbance being less marked. The discharge had in all the cases been going on for some weeks previously; the pus was foetid and occasionally sanious.

It was, of course, impossible in infants so young to test the hearing power. Examination with the speculum showed that in three of the cases the disease was unilateral in the remaining one it was bilateral. The membrana tympani was perforated in all the cases, and in two Shrapnell's membrane was involved.

In the case attended by facial paralysis the whole of the tympanic membrane seemed to be destroyed, none of the ossicles were visible, and the middle ear was filled with highly vascular granulation tissue, from amongst which pus was freely oozing. Tenderness and "egg shell crackling" were well marked on pressure over the mastoid. There was also secondary corneal ulceration on the same side.

Under these circumstances I at once freely opened the mastoid antrum and scraped away a quantity of granulation tissue and *débris*, from which the bleeding was fairly free, and, finally, I gently syringed through a warm saturated solution of boracic acid, plugged the antrum, wound, and ear with iodoform gauze, and dressed with absorbent iodoform wool. There was no difficulty in opening the antrum, a mere shell of bone constituting the outer wall. The result was satisfactory; the discharge is rapidly ceasing, the granulation tissue has not returned, and the facial paralysis is slowly recovering.

In the other case of attic suppuration, I washed it out daily through the perforation by means of an intratympanic syringe, after previously removing a polypus. Izal lotion was used as being a comparatively unirritating but powerful antiseptic, after carefully drying out with iodoform wool a few crystals of acetanilide were insufflated. Acetanilide reduces the amount of discharge, keeps the cavity sweet, and does not form an impervious scab like iodoform.

In the remaining two cases, including the bilateral one, the perforation was situated below and behind the handle of the malleus and was of the "pinhole" type. Gentle daily irrigation with izal lotion, and insufflation of acetanilide resulted in a speedy cure.

These cases are, I think, of interest as showing how acute primary inflammation of the middle ear may give rise to grave errors of diagnosis, the case frequently being mistaken for one of acute primary meningitis, acute gastro-enteritis, or teething fits, and much valuable time may be lost whilst the abdomen is being carefully poulticed or the gums lanced.

The early symptoms which should suggest the ear as the cause of the illness are

1. The child constantly endeavours to rub the affected ear.

2. It utters a sharp cry of pain on pressure being made below the meatus.

3. It refuses to rest its head on the affected side.

The onset of convulsions usually indicates severe cerebral hyperæmia, retracted head, followed by coma; actual meningeal inflammation usually by extension. It is during the early stage that the greatest benefit follows from the use of Politzer's bag with warm instillations.

Field states that the bag is not requisite for young children—blowing into the nostrils through a piece of rubber tubing is amply sufficient. Paracentesis is indicated if there is bulging of the membrane. Poultices only tend to increase the suppuration and so promote rupture of the membrane.

The rapid cure which follows on the use of thorough cleanliness and mild antiseptics and astringents suggests that in the majority of these cases the disease is primarily an acute catarrhal inflammation of the mucous membrane of the middle ear, which owing to the tension of retained secretion becomes suppurative. In some no doubt is it primarily tuberculous.

Milligan in the *Medical Annual* for 1896 points out the extreme difficulty of microscopically demonstrating the presence of tubercle bacilli either in the discharge from the ear or in the scrapings removed after opening the mastoid, subcutaneous inoculations being usually required to establish a definite diagnosis.

The clinical signs which would suggest that the lesion had a tuberculous origin are: (1) A slow non-sthenic onset; (2) early glandular enlargement; (3) early facial paralysis; (4) resistance to the ordinary measures of treatment; (5) the presence of other tuberculous disease. These cases require the establishment of a free opening into the middle ear through the mastoid.

TWO CASES OF ABDOMINAL OPERATION IN EARLY CHILDHOOD.

By F. EVE, F.R.C.S.,

Surgeon to the London and to the Evelina Hospitals.

THE two following cases, in one of which I performed laparotomy for suppurating ovarian cyst in an infant, and in the other nephrectomy in a child under 4 years, will, I believe, be read with interest, partly because the first case is an example of an extremely rare condition in an infant, and partly because they show that abdominal operations may be undertaken even in very young children with good prospect of success.

CASE I. Suppurating Ovarian Cyst in an Infant aged 22 months: Removal: Recovery.—A. W., aged 1 year and 10 months, a pale, weakly child, with an enlarged abdomen, had been ill from birth, and for the last fourteen days had suffered from diarrhoea. She came under the care of my colleague Dr. Carpenter at the Evelina Hospital, to whose kindness I was indebted for the case. He noticed a swelling in the right iliac region, and on making a systematic rectal examination under chloroform, found a tumour about the size of a tangerine orange. It lay to the right of the uterus, with which it appeared to be connected, was freely movable, could be carried to the middle line, fluctuated, and no attachment could be detected above it. The right ovary could not be made out, but the left was normal in size and position.

There were well-marked Parrot's nodes around the bregma, and the spleen was distinctly enlarged. No other evidences of congenital syphilis existed. The child was admitted under my care on July 1st, 1895. A few days later Dr. Carpenter and myself made another examination under chloroform. When the abdominal muscles were relaxed by the anæsthetic, a tumour could be distinctly felt through the abdominal parietes. From its position, its relation to the uterus (which could be clearly made out through the rectum), and from the presence of fluctuation and some pyrexia a diagnosis of pyosalpinx was made. The child had slight bronchitis, and, as some suspicions of tuberculosis were entertained, it was decided to watch the case. Within the next few weeks she continued to suffer from cough, and had occasional rises of temperature. The highest point reached was 102.5° F. Later, her general condition having improved and the tumour being distinctly larger, it was decided to operate.

On August 13th, the child being under A.C.E., I opened the abdomen in the middle line and came down on a smooth elastic rounded swelling occupying the right side of the pelvis, and attached by many firm adhesions to the surrounding structures. Adhesions connecting it with the cæcum, the bladder, and the rectum were separated by tearing and by the use of the scalpel. After detaching the cyst it was drawn into the wound and punctured with a trocar, which let out some foul-smelling pus. After closing the puncture with forceps the pedicle was secured with silk in the usual manner close to the uterus, and the cyst removed. A glass drainage tube was inserted and the wound closed. There was little shock, no sickness, and no rise of temperature after the operation.

The tube was removed on the third day, and the sutures on the seventh day. Subsequently the general condition of the child improved; she was sent to a convalescent home on October 3rd, and at the present time (January, 1897) continues quite well.

The cyst (which is shown in the accompanying drawing) is

Suppurating ovarian cyst, removed from an infant. Above is the Fallopian tube with a bristle passing through it.

unilocular, of the form of a flattened sphere, $1\frac{1}{2}$ inch in diameter; its inner surface is somewhat rugose and furrowed, but is not beset with papillæ. Above it runs the Fallopian tube, which is slightly thickened but patent. Microscopically the cyst wall was composed of fibronuclear tissue with an inner lining of granulation tissue. No remains of true ovarian tissue could be observed either with 'the naked eye or with the microscope. It is therefore impossible to say whether the cyst originated in the oöphoron or paroöphoron, but probably in the former.

Dr. Carpenter has kindly placed at my disposal a list which he has collected of 35 cases of ovarian tumour removed from infants and children under 12 years of age. From this it appears that in 15 the tumours were dermoids, in 10 simple cystic growths, in 9 malignant, and 1 was a fibromyoma. The youngest patient was 1 year and 9 months old. This was a case of dermoid cyst successfully removed by Roemer.¹

My own patient at the date of the operation was 1 year and 11 months old, so that as far as I have been able to ascertain this is the youngest recorded case but one in which an ovarian tumour has been successfully removed.

The presence of pus within the cyst, evidently due to the intimate adhesions to the bowel, fully explains the pyrexia and constitutional disturbance, which completely disappeared after the operation. It was the existence of these symptoms which, in the first instance, gave rise to the suspicion that the tumour was a pyosalpinx, possibly of tuberculous origin. Had the nature of the swelling not been carefully ascertained by rectal bimanual examination, it is probable that the case would have drifted on until the child was attacked with suppurative peritonitis.

CASE II. Tuberculous Disease of Kidney in a Child under 4 years: Nephrectomy: Recovery.—A. F., aged 3 years and 9 months, a patient at the Evelina Hospital, was transferred to my care by my colleague, Dr. Carpenter. Three months before admission the mother noticed that the child was wasting, micturated frequently, passing very little urine at a time, and that the water contained slime. For two months she had complained of pain in the abdomen. When admitted the child was emaciated, the abdomen enlarged by a tumour, evidently renal, which occupied the left lumbar region; it extended from beneath the costal cartilages, downwards below the level of the anterior superior spine, and forwards to within 2 inches of the umbilicus. The colon was pressed forwards towards the middle line; the liver was slightly enlarged; the lower edge of the right kidney could just be felt; the urine, specific gravity 1012, contained a faint trace of albumen; the temperature was typically hectic, reaching at 9 P.M. on the day of admission 105.5° F.

On June 15th, 1895, under anaesthesia, an incision was made into the kidney through the loin, a considerable quantity of pus let out, and a drainage tube inserted. After the operation the child was greatly collapsed.

On June 25th the urine contained albumen and pus. The child complained of pain in the left shoulder. The temperature, although improved by the first operation, was still hectic in type, and on the evening of July 1st it reached 105° .

On July 2nd, as the child was evidently dying of hectic, it was decided to remove the kidney as a last resource, although her condition appeared most unfavourable. Under A.C.E. the wound in the loin was pro-

longed obliquely downwards as far as the crest of the ileum and the kidney exposed, but was found to be so large that any attempt to remove it by the ordinary incision was evidently impossible. The lower end of the incision was, therefore, prolonged horizontally forward through the abdominal parietes as far as the outer edge of the rectus, the peritoneum being detached and pressed forward. This gave ample room for the kidney to be drawn out and the pedicle secure. The ureter was tied separately and pure carbolic acid was applied to the stump. The wound was closed and a drainage tube inserted in the upper angle, which had already been infected as a result of the previous operation. The operation had to be performed as rapidly as possible owing to the collapsed condition of the child, but reaction subsequently took place.

Great improvement followed the operation. On July 10th the temperature had not been above 99.8° since July 5th, when it was 100° . The wound healed by first intention except where the old incision was. Subsequently an abscess formed beneath the pectoral muscle just below the acromial end of the left clavicle. This was incised and a considerable quantity of pus let out. Later the child was sent to a convalescent home and returned quite fat, but with a sinus still existing in the shoulder; this ultimately closed.

The kidney measured $4\frac{1}{2}$ inches in length, $2\frac{1}{2}$ inches in breadth, and had a circumference of 9 inches. Its surface was lobulated. A section showed calyces extending into the lobules, but they were not dilated as is usual, but formed slit-like spaces containing caseous matter and pus. The pelvis was not materially dilated, hence there was no common cavity which could be opened up and drained by nephrotomy.

With a knowledge of the high mortality following removal of the kidney for tumour in infants, and in consideration of the exhausted condition of the child, I should not have undertaken nephrectomy in this case had not improvement under existing conditions been impossible. After exposing the kidney by the ordinary incision, and freely opening it, I had expected that its bulk would have diminished sufficiently to allow of its delivery through an ordinary incision, and was not a little surprised when I found the size of the mass which had to be removed.

The prolongation of the lower part of the incision horizontally forward, as described, allowed of the tumour being extracted with the greatest ease and rapidity. It was necessarily of the highest importance that the peritoneum should not be opened, seeing that the original opening into the kidney was, from the nature of the case, highly septic. The child was so collapsed that no time could be spared to refresh the edges or otherwise effectually cleanse this part of the wound.

The child is now (January, 1897) seemingly in perfect health, and has grown quite fat.

REFERENCE.

¹ *Deut. med. Woch.*, 1883, p. 762.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

THE FIGURE-OF-EIGHT SUTURE IN THE RADICAL CURE OF INGUINAL HERNIA.

THE reappearance of the buried sutures, which close the canal in operating for the cure of inguinal hernia, forms one of the minor drawbacks of the operation. Two theories have been propounded to account for this reappearance. One considers the suture to be septic when inserted; the other that the suture, instead of being absorbed or encapsuled, acts as a foreign body, possibly aseptic, lying among tissues more or less constantly moving, and so cause a local lesion, in which any bacteria passing through the tissues find a home. Whatever the true explanation may be, the fact remains that in a certain percentage of cases of radical cure, either a small sinus with sentinel granulations remains, or, after healing by first intention has taken place, the patient, at an interval varying from a few days to a few months, has some tenderness and swelling in the scar, followed by the formation of a sinus which declines to heal till one or more of the buried sutures is shed. The suture on the neck of the sac hardly ever reappears if the stump of the sac is allowed to retract well within the internal ring. With the exception of this suture, buried stitches may be dispensed with by employing a figure-of-eight stitch, the lower loop of which includes the edges of the canal. The superficial loop may be used to approximate the edges of the skin incision, but the following modification is better, and allows inspection of the canal as each stitch is tightened.

Starting at the internal ring, the suture (silkworm gut for choice) is passed through the sides of the canal, superficial