

(a) A Case of Pregnancy with Acute Appendicitis

Case Report:

Reg. No. 2699. N.A.M. Chinese 21 years.
Para 1. Gravida 2. L.M.P. 17.6.1955.
E.D.D. 24.3.1956. Estimated maturity—
36 weeks.
Admitted on 11.2.1956 at 1.50 p.m.

Previous Obstetrical history:

1st child—full term, normal delivery—
2 years old.

Present history:

The patient was admitted on 11.2.1956
with the complaints:—

1. Epigastric pain—persistent in nature
—for past 24 hrs.
2. Lower abdominal discomfort—of
same duration.
3. Occasional vomiting three times—
just before admission.

There was no loss of appetite, malaise,
diarrhoea or constipation. Micturition
habits—normal.

Past history:

Similar attacks of epigastric pain had
been experienced by the patient during
the early months of this pregnancy

Physical Examination:

General—Febrile 100°F. Slightly flushed
appearance.

Pulse 100/min. reg. vol. good. B.P.
120/70.

Heart)

Clinically clear.

Lungs)

Abdomen—Slight tenderness over the
epigastric region only. No mass
felt.

Obstetrical—Fundus of uterus—height
of about 36 weeks pregnancy. Vertex
L.O.A. Floating. Foetal heart sounds
present.

No loss per vaginam seen.

Treatment and management:

1. Rest in bed.
2. Full blood count.
3. C.S.U. for F.B. and M.E.
4. Inj. Penicillin 1 mega stat and ½
mega b.d.
5. For observation.

Laboratory investigations:

12.2.1956:

1. T.R. 3.48 million.
Hb. 67%
2. C.S.U.—Alb. trace. P.C. 4-5; E.C.
2-3; Feg granular casts.

Progress Notes:

12.2.1956:

Still febrile 99°F. Tender all over the
abdomen.

Pulse 120/min, showing only a slight
rise.

Vaginal examination at 9.30 a.m. by
Dr. Salmon—os closed. Cervix—not
effaced.

Vertex presenting—not engaged.

Patient put on hourly pulse chart.

Vaginal examination repeated at 6.00
p.b.—os one finger dilated. Membranes
stripped.

8.00 p.m.—Case seen by Dr. T. K. Chong.

Abdomen found to be more tender on
right side with dullness on percussion
over the right iliac fossa.

A diagnosis of pregnancy with acute
appendicitis was made.

Dr. Sinha consulted — conservative
treatment advised for the present with
a view to a laparotomy the next day.

13.2.1956—General condition — much the

same. Pulse 120/min. Generalised
guarding and tenderness present all
over the abdomen. Membranes

ruptured spontaneously at 10.15 a.m.—
premature infant delivered at 7.15 p.m.

Birth weight—3 lbs. 9 ozs.

T.W. 30,000

D.C. P.88, L.8, M.2, E.2%.

14.2.1956 at 11.30 a.m. Exploratory
laparotomy—Dr. S. T. James. Under
general anaesthesia—Dr. G. Tay.

Found:

1. Multiple adhesion involving
parametrium, loops of large gut and
omentum especially around the
caecum.

2. Appendix was 2½" long, retrocaecal, inflamed and perforated at junction of middle and distal thirds.
3. Free, slightly purulent fluid in peritoneal cavity.

Done:

1. Adhesions separated and an appendicectomy done.
2. Free fluid removed.
3. Streptomycin one gram and Penicillin one mega unit left in peritoneal cavity.

P.O.T.

1. Nothing by mouth for 36 hours.
2. 2 hourly aspiration.
3. I/V drip 5½ dextrose at 40 drops per minute for 24 hours.
4. Inj. Streptomycin 2 grams. b.d. for 7 days.
5. Inj. Penicillin 1 mega unit b.d. for 7 days.

The patient has made an uneventful recovery since the operation.

Discussion.

DR. R. LOH: Presented the case.

DR. A. C. SINHA: Said that when he saw the case, he could not arrive at a definite conclusion as to the exact diagnosis, and advised conservative treatment and observation with appendicitis as the most likely cause. Torsion of an ovarian cyst was the other possibility.

DR. T. K. CHONG: Then gave a short dissertation on the anatomy, symptomatology and diagnosis of appendicitis in pregnancy.

The displacement of the appendix occurs after the 3rd month. At the 6th month, it is at the level of the iliac crest. It reaches its highest point, about 2 fingers-breadths above the iliac crest at the end of the 8th month. In addition, the long axis of the appendix undergoes a counter-clockwise rotation, first becoming horizontal and pointing medially and finally pointing vertically in 60% of cases.

It is widely held that a patient subject to recurrent attacks of appendicitis is more liable to have an exacerbation during a pregnancy due to upward shifting, possibly with stretching of adhesions.

The pain is usually not typical of appendicitis after the 3rd month. It cannot be well localised by the patient who describes it as "right sided" or "lower abdominal" and is continuous in character, simulating that of a small concealed accidental haemorrhage.

Nausea and vomiting are commonly present at or soon after the onset of the pain. In early cases, the temperature is seldom more than 100°F. The tongue is usually coated later on. The pulse is usually over 100 p.m. in patients with more than 24 hours' symptoms.

Abdominal tenderness and rigidity may be present all over but always maximal in the right iliac fossa or in the right para-umbilical area unless the appendix is retrocaecal, when the tenderness is in the lumbar region.

To determine whether the source of the tenderness is uterine or extra-uterine Fahmy (1944) suggested palpating the patient in the left lateral position so that the uterus moved towards the left side as possible. Nicholas Alders (1951) improved on this and introduced "the sign of fixed or shifting tenderness." With the patient lying straight on her back the area of maximum tenderness to pressure on the abdominal wall is determined with the hand. Then the patient turns over to the left side and if the pain is less, this is known as "shifting tenderness" and is present in concealed accidental haemorrhage or degenerated fibroids. But the pain sensation will be unaltered if the lesion is extra-uterine. This is "fixed tenderness" and is present in appendicitis, renal or gall-bladder disease, diverticulitis and twisted ovarian cyst. This sign is significant only if the uterus is large enough to be palpable abdominally. It may be misleading when the uterine lesion has become fixed by adhesions to the anterior abdominal wall.

Vaginal and rectal examinations are usually not helpful in the diagnosis because the depth of the Pouch of Douglas is reduced in late pregnancy and its contents are displaced upwards by the foetal head.

Leucocytosis is helpful to confirm a presumptive diagnosis of appendicitis especially if the polymorph count is high.

Examination of a catheter specimen of urine is invaluable for when there is frank pus in the urine associated with a temperature of 101°F or more, and a history

of rigors, one has to consider pyelitis even though there is right-sided abdominal tenderness.

Most recent writers suggest that acute appendicitis is rarer in the last trimester (Child & Douglas 1944, Krieg 1949) but this is more apparent than real. For, considering the difficulty of diagnosis in a patient near term, an undue number of cases may be diagnosed as degeneration in a fibroid or as accidental haemorrhage and will recover spontaneously with rest in bed. Others diagnosed as having pyelitis, may receive chemotherapy and have their appendicitis cured. But some such patients will develop true appendicitis in hospital with an apparent lower incidence but with a higher mortality rate, because of the inclusion of these late or neglected cases.

MR. T. SALE: Pointed out the disadvantage of a median incision, and touched upon the types of appendicitis, their clinical manifestations and the importance of a high leucocytosis in clinching the diagnosis. He spoke of "clinical intuition" in diagnosis as being very often right.

Regarding treatment, he said there was a tendency to try and put off interference especially in late pregnancy, whereas in early pregnancy he was inclined to take out the appendix even on suspicion; in late pregnancy he advocated the Oschner-Sherran's regime. The particular line of treatment varied with different surgeons e.g. Mr. H. M. MacGladdery advocated heavy doses of antibiotics for those patients with a history of more than 3 days' duration.

DR. A. C. SINHA: Emphasised the fact that a greater risk of perforation and gangrene of the appendix existed in pregnant women, and these might be difficult of diagnosis.

MR. T. SALE: Continuing said that the transverse incision was now in vogue. This was especially so when the transverse diameter of the abdomen was equal to or greater than the vertical diameter. Incision for an appendicectomy in pregnancy should be higher up than usual as the appendix was pulled up in pregnancy.

DR. J. W. F. LUMSDEN: Stressed the importance of not missing a case of appendicitis even though the site of pain was mainly on the left side.

PROF. B. H. SHEARES: Urged that there should be no place for conservatism in the management of appendicitis during pregnancy. The reason was that the uterus was a dynamic organ so that adhesions tended to break down with the growth or emptying of the uterus. This fact was borne out by the high maternal mortality rate, which might be as high as 1 in 20 in a good hospital. The following points might be considered in the differential diagnosis of Right-sided pain in pregnancy:—

- (1) *Pyelitis*: Here the temperature is usually higher and rigors are common; there is less tenderness on rectal examination. Pus cells in the urine may be present in both conditions.
- (2) *Accidental Haemorrhage* causes pain which is confined to the uterus only.
- (3) *Torsion of an ovarian cyst*, especially if it is a small cyst, can be very difficult to differentiate.

It was important not to ignore any abdominal pain or discomfort during pregnancy, and if the symptoms did not ameliorate with treatment, a thorough examination is called for to exclude a more serious condition of a surgical nature.

DR. A. C. SINHA: Agreed with Professor Sheares' statement on differential diagnosis and management of the condition. In this connection he recalled a case to support the advisability of active treatment. A woman, gravid 4 months, was seen in General Hospital for suspected appendicitis with pregnancy. Conservative treatment was advised. At 8 months gestation the appendicitis recurred and she was admitted to the Youngberg Hospital where she delivered a premature infant. Later on, investigation and examination revealed the presence of a partial intestinal obstruction relieved by enema. She was not seriously ill but was troubled by abdominal pain and discomfort. At laparotomy, partial obstruction of the small intestine was found—caused by a band of adhesion from the appendix to the abdominal wall.

PROF. B. H. SHEARES: Stated that the figure for infant mortality in 1953 from a modern hospital was as high as 40% with conservative treatment.

MR. T. SALE: Emphasised that there was a place for conservative treatment, for instance, in a pregnant woman who came in with a history of appendicitis of more than 48 hours duration. Here he would give antibiotics, as laparotomy might be fatal.

DR. A. C. SINHA: Asked if it was wise to

perform a Lower segment Caesarean Section and appendectomy at the same time especially with modern advances in anti-biotic therapy?

PROF. B. H. SHEARES: Said that he hoped he would never have an occasion to do it. He recollected one such case and fortunately the outcome was successful.

(b) A Case Of Torsion Of Left Ovarian Cyst

Case Report:

Reg. No. 164B. T.A.S. Chinese, Aged 28 years.

Admitted on 20.1.1956 at 11.15 a.m.

Complaint on admission:

Severe intermittent colicky pain in both flanks since 2.30 p.m. 19.1.56, localized and aggravated by movements; has had 6 acute exacerbations during this period. No vomiting, no fever. Bowel opened regularly.

History of present complaint:

1. She had a similar but less severe attack on 30.12.55 lasting only a few hours. It did not recur.
2. She noticed a lump in the left iliac fossa 7 months ago; it has grown steadily to the present size.

Obstetric history:

Para 5, all normally delivered, the first 6 years ago and the last 1½ years ago. No abortion.

Menstrual history:

Menarche at 14.
Menstrual period—always regular.
L.M.P.—27.12.1955.

Clinical examination:

Afebrile. Obviously in agony. PR—92/minute.
B.P.—130/80.
Heart—a soft systolic murmur in the mitral region, otherwise normal.
Lungs—clear.

Abdomen—

1. Evenly distended to the size of 34 weeks pregnancy.
2. Palpation reveals a cystic mass, tender and certain amount of guarding all over.
3. Mass was dull to percussion.

P. V. examination—

1. Uterus normal size, R.V. R.F. mobile, separate from the mass.
2. Cystic mass above uterus extending from the pelvis into the abdomen.

Clinical diagnosis:

Torsion of ovarian cyst.

Treatment:

An emergency operation was done on the same day, following were found at operation:

1. Free serous fluid in abdomen.
2. A large left ovarian cyst size of 36 weeks pregnancy with shining white capsule and some distended superficial veins.
3. The cyst was twisted once round its pedicle.
4. The right ovary and tube were normal.

Histological report:

Macroscopic:

"Cystic ovarian tumour 20 cms. in diameter, multilocular, containing mucinous material. Inside one cyst soft growth."

Microscopic:

"The section shows many cysts lined with columnar epithelium with mucoid material in lumen. No malignancy. Some areas are necrotic."

Diagnosis: "Pseudomucinous cyst."

Discussion:

DR. N. N. LING: Presented the case.

DR. C. S. OON: Next gave a dissertation on the etiology and pathology of twisted ovarian cyst with knowledge based on 53 cases she had collected. She emphasised that the side involved was indicated by the first site of pain.

The exact cause of torsion of an ovarian tumour pedicle is not known. There are, however, a number of mechanical factors involved. The tumour must be mobile, smooth and not too large, with a long pedicle. There are however exceptions, the largest cyst I have seen was 28 cm. in diameter and it had undergone two complete twists. Infection and malignancy produce adhesions early, which immobilise the tumour.

There have been a number of theories advanced in explanation of this condition, but it is difficult to believe that anyone of these theories by itself can account for all several causes may combine to bring about torsion in a single case. It is reasonable to assume that a mobile ovarian cyst with a comparatively long pedicle will twist readily, if extra, or intra abdominal pressure is exerted on it.

Extra abdominal pressure usually results from sudden or frequent contractions of the anterior abdominal muscles. Sudden movements such as falling or slipping, or exertion such as coughing, sneezing, lifting or washing clothes on a washboard, are possible causes.

Altered intra-abdominal pressure may be caused by the unequal growth of daughter cysts, by the tendency of the cyst to fall forward after it has grown out of the pelvis or by the pressure of other growing organs within the abdominal cavity.

Wilfred Shaw believed the cause to be *haemodynamic*. Violent movement initiates the twist, which in turn produce torsion of the ovarian artery. The pulsation in the vessel then causes a series of tiny impulses to be transmitted to the pedicle, each of which aggravates the twist.

Payr thought that *increase in venous pressure without increase in arterial pressure* tended to cause torsion.

Jolly suggested that the *expansive force of the growing cyst* was sufficient to cause torsion.

Sneierson and Schlesinger in an intensive study of trauma as a cause of torsion, came to the conclusion that direct trauma injured the ovarian tissue and torsion occurred secondarily after interference with the circulation as a result of injury; this appears to support the theory of Payr.

Bernstein found the *specific weight of the tumour*, a factor favouring torsion.

Other causes of torsion are changes in intra-abdominal pressure as seen in pregnancy and the puerperium. *Kolb* suggested alternate distension and evacuation of the bladder and *Lawson Tait* suggested the passage of faeces as possible causes.

SYMPTOMS:

These vary depending on the rapidity and extent of interference with the blood supply of the cyst or tumour. Torsion may be asymptomatic if the process is slow and gradual or if the twist is only partial or loose. On the other hand, the pain following sudden torsion can be so agonising as to cause shock.

Abdominal pain which is dependent on the degree of interference with the blood supply, is the most common symptom. It is usually described as sharp and agonising and originates on the side of the torsion. *It may persist on that side* or spread to the rest of the lower abdomen. It may be radiated to the back or to the anterior and/or lateral aspect of the thigh of the affected side. The diagnostic value of this last symptom has been stressed *Koucky*.

Vomiting and nausea caused by peritoneal irritation may be present but is not a very constant feature.

Urinary symptoms such as frequency and dysuria may rarely be present.

Bowel symptoms may be present where there is pelvic peritonitis.

PHYSICAL SIGNS:

Abdominal tenderness is usually localised over the site of the lesion.

Muscular rigidity when present is suggestive of an infected cyst.

A swelling palpable abdominally or on vaginal examination is always present.

The temperature may be normal in the non-infected cases, or raised to well up to 103°F in the non-infected.

DR. J. W. F. LUMSDEN: Noted that the direction of twist was usually forwards and outwards.

PROF. B. H. SHEARES: Explained the rationale of the symptomatology and differential diagnosis.

DR. A. C. SINHA: Mentioned that torsion of an ovarian pedicle occasionally interfered with the venous return, and gave rise to uterine endometrial bleeding from endometrial congestion.

PROF. B. H. SHEARES: Said that 15-25% of specimens of ovarian tumours showed malignant changes. 5% (Novak) or 6% (Shaw) of all pseudomucinous cystadenoma are malignant. Because of the peculiarity in blood supply and lymphatic drainage there was a tendency of bilateral involvement, viz:

- 1: 2 opposite ovary involved.
- 1: 3 uterus involved.
- 1: 7 Fallopian tube involved.

It was important to decide whether a case was malignant or not at the time of operation. Sectioning of the cyst then and there helped. Rupture of the capsule was also suggestive of malignancy. Age was a factor in determining the type of treatment. For near menopausal and post-menopausal cases it was better to play safe and do a panhysterectomy. In a young girl it was preferable to open her up twice than risk an early menopause.

Ovarian tumours could be divided into two big groups—the solid and the cystic. Bilateral cysts felt near the menopause should be followed up. If they were retention cysts, they tended to get smaller. Early diagnosis of carcinoma of ovary was

very difficult. The survival rate of this group was less than 20%.

DR. A. C. SINHA: Commented that it was not always easy to decide whether a case was malignant or not. He recalled a case of his, Para I under 30 years of age who in 1952 was operated on for a twisted ovarian cyst. Histological section reported "malignant change in a case of pseudomucinous cyst." In view of her age and discussing it over with the patient and her husband, it was decided to wait and see. Nothing happened so far and last year she had her second child. One must distinguish between pathological malignancy and clinical malignancy. The modern treatment of a case of malignant ovarian tumour is operation followed by Deep X-ray therapy.

PROF. B. H. SHEARES: Disagreed with the latter statement. There was the danger of radiation doing damage to the gut bladder and other abdominal organs. The patient died earlier from the effect of radiation on guts than from recurrence.

DR. C. S. OON: Said that on the Continent it was the practice to operate and remove as much as possible, leaving the uterus for radiation therapy postoperatively. Results have not yet been published.