

## ENTERO-TUBAL FISTULA

by

PERVIZ HEERA,\* M.B., B.S., M.D.

Communications between the intestines and genital tract occur as a result of infections, commonly adnexal, less frequently intestinal. Most authors agree that the adnexal infection is usually of tubercular origin (Kinnunen 1949, Rozin 1954). The intestinal infection is either diverticulitis of the sigmoid colon or appendicitis.

These infections lead to adhesions between the intestines and the pelvic organs with extension of inflammation. If the wall separating the organs breaks down, internal fistulae develop. After inadequate surgery, specially when drainage is performed, the chance of fistula formation increases (Stalworthy 1952) and the paretics may also be involved leading to genito-entero-cutaneous fistulae.

Cancer of the bowel or uterus with invasion and the subsequent communication of lumens has also been reported (Franco and Clough 1956).

The uterus, possibly due to its fibrous consistency, shows relatively poor response to any inflammatory reaction occurring outside it, and seems to remain free of adhesions, the fistula usually forming between the fallopian tube and intestines (Pickles 1957).

Due to the nonspecific nature of symptoms, entero-tubal fistulae are usually discovered unexpectedly at laparotomy. The extensive use of hysterosalpingography has led to the discovery of an increasing number of cases in the last decade. Rozin (1954) has reported two cases discovered while investigating the sterility problem and two on re-examining previous hysterosalpingograms. In spite of this, Borell *et al* (1961) were able to collect only twelve cases from the literature since 1945, to which they have added three. They have stressed the diagnostic significance of purulent discharge via the intestines from an abscess in the true pelvis, or passage of faeces or flatus per vaginam.

Four cases of entero-tubal fistulae treated over a period of three years are described.

### Case 1

A.D., aged 30 years, para 2, was admitted on 26th December, 1963, with the following history. On 20th July, 1962, she was operated for ectopic pregnancy, followed by wound sepsis in which a sinus, discharging pus and occasionally flatus, developed three months after the operation. She was operated for this on 15th November, 1962, with no relief. Since the operation she complained of indigestion, with passage of three or four stools daily and scanty periods at regular monthly intervals.

**On examination:** She was a well built afebrile woman with no evidence of pulmonary tuberculosis or tubercular lymph-

\*Specialist Dept. of Obst. & Gynec.,  
Safdarjang Hospital, New Delhi.

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adenopathy. A midline subumbilical scar on the abdomen had a pinpoint opening in it two inches below the umbilicus, with a thin purulent discharge from it. On pelvic examination the uterus was anteverted, normal in size and mobile. Both fornices were clear. The cervix appeared healthy. Histological examination of scrapings from the sinus tract showed collections of chronic inflammatory cells, but no tubercles. Endometrial biopsy showed normal secretory phase, no tubercles.

Cultures for acid fast bacilli were negative in both endometrial tissue and granulation tissue from the sinus tract. Cultures of pus from the sinus showed *E. coli* and *staphylococcus pyogenes* sensitive to chloromycetin.

Combined sinogram and hysterosalpingogram (Fig. 1 & 2) showed entry of dye into the sigmoid colon. This provoked a flare-up of infection with fever and appearance of a painful mass, which responded to chloromycetin.

After a preoperative cover of streptomycin 1 g. and isonicotinic acid hydrazide 300 mg. daily for six weeks, a laparotomy was carried out on 25th February, 1964.

The abdomen was opened through a left paramedian incision (away from the previous scar); a loop of sigmoid colon was found to be pulled up towards the original scar with a short half inch long fistulous tract between them. Another limb of the fistula extended to the left uterine cornu where a bunch of silk sutures was seen. The sinus tracts were excised and the opening in the sigmoid closed. On the right side there was a pyosalpinx. This was separated from its bed in the pouch of Douglas which was covered with caseous material, and excised. Histopathology showed no tubercles in any of the excised tissues.

The post operative period was febrile and responded to chloromycetin. The antitubercular treatment was continued. There was marked wound sepsis with superficial gaping of the wound and abscess formation in the region of the previous scar and sinus tract, which was incised and drained.

#### Comment

In this case the entero-tubal fistula

also had a parietal extension due to previous operation for left tubal pregnancy. Presence of unabsorbable suture material might have been a contributory factor. The passage of flatus occasionally and the failure of a local surgical attempt at closure suggested that it was a fistula rather than a sinus. An underlying tubercular pathology was inferred from the appearance of the opposite tube and the caseous tissue in the pouch of Douglas, though there was no histological or bacteriological proof.

Incomplete excision of the parietal portion of the fistula was followed by abscess formation requiring incision and drainage. This could have been avoided if this part had been excised and not just scraped.

#### Case 2

N. J., aged 23 years, nullipara, was admitted on 25th March, 1965, with pain in the lower abdomen, low grade fever and 3-6 loose stools a day, with purulent discharge per rectum for two months. She had no menstrual disturbances.

On admission, she was afebrile with no signs of pulmonary tuberculosis or tubercular lymphadenopathy.

On pelvic examination, the cervix and uterus were pushed to the left by a tender cystic mass, four inches in diameter, in the right fornix. There was thick purulent discharge from the rectum and the rectal mucosa was not fixed to the pelvic mass. A sigmoidoscope passed up to 15 cm. showed healthy mucous membrane with purulent discharge coming from a higher level. Endometrial biopsy showed proliferative endometrium, no tubercles.

**Barium enema:** A little barium had entered a cavity communicating with the sigmoid. (Fig. 3).

Culture of pus showed *E. coli*. No acid fast bacilli.

Laparotomy on 20th April, 1965, revealed the intestines and peritoneum studded with tubercles, and a right tubo-ovarian mass

surrounded by dense adhesions which was adherent to and draining into the sigmoid colon. The left tube and ovary were normal. As the patient had not been given anti-tubercular treatment preoperatively, the abdomen was closed without interfering with the pelvic mass. Peritoneal biopsy showed tubercle formation.

The post-operative period was uneventful. She was asked to return for survey after taking streptomycin 1 g. and isonicotinic acid hydrazide 300 mg. daily for three months.

She was readmitted on 7th June, 1965. There was no change in her symptoms and in the size of the local mass. Laparotomy on 11th July, 1965, revealed very few fine adhesions in the peritoneal cavity. The intestines and peritoneum were absolutely free of tubercles. The left tube and ovary were normal. The right tubo-ovarian mass was surrounded by few adhesions and was separated easily from the rectosigmoid, leaving a small opening, quarter of an inch in diameter, at the rectosigmoid junction which was closed.

Pathological report: Retort-shaped thick walled mass lined with thick granulation tissue. No definite tubal or ovarian structure recognised. On microscopic examination, no tubercles seen in the granulation tissue.

The post-operative period was uneventful and she was discharged on 19-8-65 and advised to continue antitubercular treatment.

### Comment

Here, a large tubo-ovarian abscess on the right side had pushed the uterus to the left and drained into the rectosigmoid. The tubercular peritonitis indicated the basic tubercular pathology. The complete disappearance of tubercles and softening of adhesions after a course of anti-tubercular treatment for three months illustrates the importance of pre-operative treatment, particularly in cases of genito-intestinal fistulae, when adnexal infection is usually of tubercular origin.

### Case 3

P., aged 26 years, para 1, was admitted on 2nd June, 1964, with severe pain in the abdomen and fever for 12 days.

She was toxic with hectic temperature swinging to 104°F. There was tenderness and rigidity over the lower abdomen and on pelvic examination the uterus was pushed forward and up to two inches below the umbilicus.

Posterior colpotomy was done and about 12 ounces of thick pus, which showed staphylococcus pyogenes on culture, was drained.

She was discharged on 25th June, 1964, when on pelvic examination the uterus was anteverted and deflected to the right with thickening in the posterior and right fornix, and a cystic mass, two inches in diameter, in the left fornix.

She was readmitted on 24th September, 1964 with a complaint of pain in the abdomen. She was afebrile but looked ill. There was no change in the pelvic findings.

Under antibiotic cover of procaine penicillin, 400,000 units, and streptomycin, 1 g. daily for six days, laparotomy was done on 6th October, 1964. The pelvic organs were embedded in dense adhesions also involving the sigmoid colon. On separating the adhesions, the mass burst liberating thick caseous material. As it could not be separated from the sigmoid, it was excised leaving a portion of the left tube attached to the sigmoid. Faecal matter escaped through this revealing a tubo-sigmoid fistula. The tubal remnant was excised and the fistula closed. The caecum was thickened with tubercles on the terminal ileum.

The histopathological report was tuberculous salpingo-oophoritis. The post operative period was febrile with wound sepsis. She was discharged on 11th July, 1964, on antitubercular treatment which was continued for 2 years.

### Comment

The case was diagnosed accidentally at laparotomy for residual pelvic inflammatory disease, following colpotomy drainage for a pelvic abscess. She had both genital and ileocaecal

tuberculosis. That the drainage of the pelvic abscess had an aetiological significance in the formation of the enterotubal fistula is doubtful.

#### Case 4

B.K., aged 60 years, para 8, menopause for 9 years, was admitted on 28th January, 1963, with a history of fever for one month, ranging from 100° to 104°F, which had responded to penicillin and streptomycin, dull continuous pain in the lower abdomen and excessive discharge per vaginam for one month.

On admission, she was afebrile but looked ill and toxic. There was an ill-defined tender mass rising from the pelvis, two inches above the pubic symphysis on the right side.

Per vaginam, the uterus could not be defined separately from a partly cystic and partly solid mass, about five inches in diameter, on the right side. The cervix appeared healthy. A provisional diagnosis of uterine carcinoma with pyometra was made.

On dilatation of the cervix, five ml. of mucopurulent fluid was drained. The uterine cavity was only three inches long.

At laparotomy on 12th February, 1963, the omentum and loops of ileum were adherent to the uterus. On separating these, an abscess cavity was opened up on the right side with escape of thick pus. A gangrenous appendix was found adherent to the middle of the right tube. Medial to this attachment, the tube was thick and inflamed while the distal portion was comparatively healthy and the fimbrial end patent. The uterus, left tube and ovary were normal. Appendicectomy and panhysterectomy were done.

On cutting open the uterus, the interstitial part of the right tube was hypertrophied and oedematous, projecting into the uterine cavity with a dilated tubal opening. A probe passed through this emerged through the tubal wall at the point of attachment of the appendix.

Histopathological report was adenomyosis of uterus and follicular salpingitis.

The post operative period was uneventful.

#### Comment

In this case there was spontaneous drainage of an appendicular abscess into the uterus, through a fistulous communication between the gangrenous appendix and the right tube. Cox (1952), in reporting a similar case in which the basic pathology was diverticulitis, comments that it is unusual for entero-tubal fistulae to be associated with purulent discharge as the tube rarely remains patent in the presence of gross infection.

The essential features of the four cases in the present series are given below:

#### Discussion

These four cases of entero-tubal fistulae, seen and treated over a period of three years, show that this condition is more frequently met with than the reports in the literature suggest.

In cases 1, 2 and 3 there was evidence of an underlying tubercular pathology, though histological confirmation was present in only one case. Rozin (1954) states that demonstration of tuberculous origin may be quite difficult. The use of pre-operative antituberculous therapy in cases 1 and 2 may have accounted for the absence of tubercles on histological examination of the tubes.

Three of the four cases had gastrointestinal symptoms, like loose stools and pain in the abdomen related to meals, suggesting an association of intestinal pathology with the pelvic mass. A clinical diagnosis on the basis of signs and symptoms alone is difficult, and hysterosalpingography and barium enema are required to confirm the diagnosis, unless the con-

Case	Age	Parity	Diagnosis	Type	Symptoms	Basic Pathology	Treatment
1	30 yrs.	2	Sino-hystero-gram & symptoms.	Left tube and sigmoid.	Abdominal sinus after operation for ectopic & diarrhoea.	Tuberculous salpingitis.	Excision of fistula, repair of sigmoid and Rt. salpingectomy.
2	23 yrs.	0	Ba. enema	Right tube & rectosigmoid.	Pelvic mass & pus discharge per rectum.	Tuberculous salpingitis.	Right salpingo oophorectomy, and repair. of sigmoid.
3	26 yrs.	1	Laparotomy	Left tube & sigmoid.	Dyspepsia & pelvic mass.	Tuberculous salpingitis.	Left salpingectomy & repair of sigmoid.
4	60 yrs.	8	Laparotomy	Right tube & appendix mass.	Fever, pelvic mass	Appendicitis	Appendicectomy and panhysterectomy.

dition is discovered unexpectedly at laparotomy. Rozin (1954) describes the following radiological findings.

(i) The involved tube is in an abnormal position. The lumen is enlarged and peristalsis is absent.

(ii) There is an abrupt enlargement into an uneven space;

(iii) A control film shows dye in the intestines.

One of his four cases had a flare up of infection after hysterosalpingogram, as was also noted in Case 1.

The recorded cases show that fistulae between the left tube and rectosigmoid are the commonest, 66%, the commonest basic pathology being tuberculous salpingitis, 60%, the others being diverticulitis, appendicitis, lymphogranuloma venereum and endometriosis. With the exception of two cases of diverticulitis all the others were in young women in the reproductive age (Borell 1961).

Treatment is usually surgical though spontaneous healing following conservative treatment in a tubosigmoid fistula with tuberculous salpingitis as the underlying pathology has been reported by Vessell (1948).

It is important to excise the whole length of the fistulous tract, specially if it extends to the parietes. Failure to comply with this principle leads to prolonged post-operative morbidity with wound sepsis (Case 1).

Conservative pelvic surgery was carried out in Cases 1, 2 and 3 with tuberculous pathology, as with their young age and low parity, they were not prepared for the loss of menstua-

tion. After surgery, it is advisable to follow up with prolonged anti-tubercular treatment, when associated with intestinal tuberculosis and when the uterus and contralateral tube are left behind.

#### Summary

Four cases of enterotubal fistulae, three due to tuberculous salpingitis and one following appendicitis, are described with a review of the literature on the subject.

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