

TORSION OF HYDROSALPINX

by

BIMLA GULATI*

Introduction

Although hydrosalpinx is a common condition, torsion of the affected fallopian tube is very rare (not more than 150 cases are reported in the literature). Due to rarity of this diseased entity the pre-operative diagnosis is usually difficult and the case is usually diagnosed as twisted ovarian cyst, acute salpingitis, acute appendicitis, ectopic gestation or even infection of the urinary tract. Bland Sutton (1890) was the first to describe this condition. Later, Eastman (1927), Shaw (1949), De Seldenoff (1949), Wolff (1951), Jadhav (1958), Achari (1962), Youseff et al., (1962) and Tamasker and Tamasker (1964) reported more cases, and reviewed the literature.

The uncommon nature of the condition has prompted the present author to report this case.

Case Report

Mrs. Z. A. M., aged 46 years, was brought to Sultania Zanana Hospital, Bhopal, on 6-7-64 at 7 p.m. with a history of acute pain in the lower abdomen for 7 hours. The pain was more marked on the right side. She vomited once after admission. There was no history of fever. Micturition was normal. Her bowels had moved the same morning.

Past History: The patient used to get at-

*Reader in Obstetrics & Gynaecology, Gandhi Medical College, Bhopal.

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tacks of pain off and on for the past 3-4 years. The pain used to last for 1-2 days and to pass off without any special treatment. It was never so severe on previous occasions.

Menstrual History. 3/30 days; last period 5 days prior to admission.

Obstetric History: The patient had 2 full-term normal deliveries. Her last delivery was 27 years ago. She also had one abortion 16 years previously, after which the bleeding had persisted for 3 months and intrauterine glycerine had been instilled for some time.

On Examination the findings were:— Patient groaning with pain, pulse 72/min. temp. 98.4°F. B.P. 130/80, respirations 20/min, heart—extrasystoles after 3-4 beats, lungs—nil abnormal.

Abdominal Examination showed marked tenderness in the lower abdomen. Percussion note was dull over the lower abdomen. Peristalsis was detected on auscultation.

Vaginal Examination: A soft cystic and tender mass was felt through the anterior and right fornices, about 4" x 3". The uterus was separate from the mass. Left fornix was clear.

Investigations: haemoglobin 80%, W.B.C. 8,000/c.m.m. d'ff. Polys 70% lymphos 30% urine clear.

Clinical diagnosis: Twisted ovarian cyst?; Salpingitis?

Treatment: The patient was given inj. morphine hydrochloride gr. $\frac{1}{4}$ and inj. strepto-penicillin ($\frac{1}{2}$ grm.) and kept under observation. Laparotomy was done after 12 hours as the mass had increased in size and had become tense. The pulse rate increased from 72/min. to 110/min.

Operation: On opening the abdomen a dark red tumour arising from the pelvis about 4" x 3½" presented in the wound. On exploration it was found to be the right

had two grown up children and moreover, the tube had become gangrenous, hence salpingectomy was done.

Summary

A case of twisted hydrosalpinx is reported and literature is reviewed.

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countered. There were 3 cases of torsion of hydrosalpinx and 2 of torsion of tubo-ovarian cysts. One (sixth) case of twisted hydrosalpinx treated by me at Government General Hospital, Guntur, apart from this series, is also reported with case notes.

Table I shows the type of surgical treatment given. Hysterectomy was done in 8 cases; 2 patients died, one each after hysterectomy and ovariectomy, giving a mortality of 4.5%.

TABLE I

TREATMENT:			
Ovariectomy	..	..	30
Hysterectomy	..	..	8
Partial ovariectomy	..	..	2
Salpingo-oophorectomy	..	..	6
Total			46

Case 1

1 Mrs. A, was admitted on 24-1-64 with complaint of colicky pain in lower abdomen, left side and vomiting since 3 days. A similar attack three months ago was not treated. Her menstrual periods were regular, 3/30 days and her last child was 9 years old.

On examination, the body of uterus was normal in size and a soft cystic mass, tender and oval in shape, was felt in the anterior fornix. A laparotomy (emergency) revealed dark, reddish, elongated oval, size 6"/4". left tubo-ovarian mass with torsion clockwise of 3 circles. Right tube and ovary were normal. Left salpingo-oophorectomy was done.

Case 2

Mrs R, was admitted on 4-9-'64 with complaints of pain in abdomen and vomiting since 4 days. She was a primipara delivered naturally 20 days ago. Examination revealed a tender cystic mass in the lower abdomen on the right side; the uterus was of normal size.

An emergency laparotomy revealed dark haemorrhagic cystic mass, with plenty of

adhesions to bowel and omentum. On releasing them, right tubo-ovarian mass, about 7" diameter, was noticed to have undergone twist in clockwise direction in 3 circles. Right salpingo-oophorectomy was done; and histology showed chronic inflammatory reaction.

Case No. 3

Mrs. K. S. was admitted on 4-12-'64 with complaint of pain in the lower abdomen since two months. She was sterile and was operated one year 4 months ago in this hospital when left ovariectomy and salpingectomy and right salpingostomy were done for treatment of left ovarian cyst and bilateral hydrosalpinx.

Since 1 year, her periods were 1-2/30 days with scanty flow. On examination a firm tender mass was felt in the right iliac fossa extending to midway between umbilicus and symphysis pubis and closely adherent to the normal-sized uterus. A laparotomy revealed a hydrosalpinx 9" x 4" on the right side with a twist of 1½ circles in clockwise direction and dark red in colour, with haemorrhagic fluid. On 8-12-'64 total abdominal hysterectomy and right salpingo-oophorectomy were done. Histological examination revealed chronic inflammatory reaction of hydrosalpinx.

Case No. 4

Mrs. L. was admitted on 13-3-'63 with complaint of colicky pain in the lower abdomen and fainting since 8 days. She was sterile; her periods were regular 3/30 days. Examination revealed a cystic tender mass in the hypogastrium on the right side extending up to 3" above the pubic symphysis; the uterus was normal, cystic mass was felt in the right fornix.

Laparotomy revealed a dark bluish mass, which was a, left hydrosalpinx with torsion of 2 circles in clockwise direction, displaced to the right side. The right tube was the seat of hydrosalpinx. Left salpingo-oophorectomy and right salpingectomy were done.

Case No. 5

Mrs. V. was admitted on 4-4-'63 with complaints of griping pain in the lower abdomen and vomiting since 1 month and



Fig. 1

Twisted tubo-ovarian mass (left) of case No. 1.



Fig. 2

Twisted tubo-ovarian mass (right) of case No. 2.

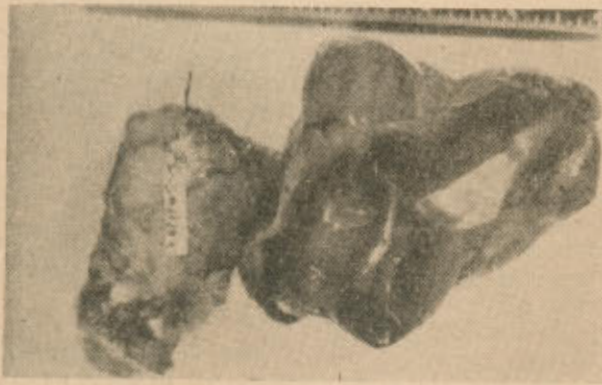


Fig. 3

Twisted hydrosalpinx (right) with uterus of case No. 3.

severe pain since 10 days. She had her last child 7 years ago and her menstrual periods were regular, 5/30 days.

Examination revealed an ill-defined, tender cystic mass, oval-shaped, in the hypogastrium on the right side and normal uterus. Laparotomy on 8-4-'63 revealed a dark and cystic mass, right hydrosalpinx 5" x 3" twisted 1 circle in anti-clockwise direction. Right salpingectomy was done.

Case No. 6

Mrs. H. was admitted in Government General Hospital, Guntur, on 22-3-'61 with complaint of colicky, pain in the right iliac

fossa since 15 days. She was sterile and her menstrual periods were normal 13/30 days. Last period 2 months ago. She was referred to hospital with bleeding per vaginam and a diagnosis of ectopic pregnancy.

Examination revealed tenderness in supra-pubic region, a normal uterus and a soft cystic tender mass, size 4" x 3", oval-shaped in the posterior and right fornices.

With a pre-operative diagnosis of twisted hydrosalpinx, laparotomy was done on 24-3-'61 and a right hydrosalpinx, dark red in colour, was found twisted in clockwise direction upto 3/4 of circle. The left tube

had a blocked fimbrial end with thin adhesions. Right salpingo-oophorectomy and left salpingostomy were done.

Case No. 7

Mrs. R., 25 years, was admitted on 12-10-'61 with complaint of colicky pain in the lower abdomen and vomiting since 3 days. She was sterile, married 8 years ago and her menstrual periods were irregular, 4 days/2-6 months with profuse flow. Her last menstrual period was 2 months ago with bleeding lasting 7 days. On examination, guarding and rigidity of right side of lower abdomen, anteverted and bulky uterus and a tender well-defined mass in pouch of Douglas, were found. Emergency laparotomy showed dark red (left) ovary twisted 4 circles in clockwise direction and both ovaries enlarged thrice the normal size. Left salpingo-oophorectomy and wedge resection of right ovary were done. Microscopy of ovary, showing multiple cysts and hyperplasia of theca cells with atresia of follicles and endometrium in late proliferative phase, (Stein-Leventhal Syndrome) confirmed the diagnosis.

Later she had two full-term deliveries by lower segment caesarean section on 17th April, 1963 and 5th December, 1964, the indication being mid-cavity and outlet contraction.

Discussion

The factors concerned in torsion of the pedicle of ovarian tumours are: weight of the tumour, trauma such as jolts, peristaltic movements of intestines (Novak), laxity of abdominal wall, as in pregnancy and puerperium, full bladder and rectum, muscular strain, moderate size of tumour, with fairly long pedicle and mobility to rise above the pelvic brim (MacLeod and Read), contraction of adhesions, asymmetric growth, and movement of sigmoid (Howkins). According to Howkins paraovarian cysts of 6" diameter or less are more

prone to torsion whereas large tumours, chocolate cysts, fixed tumours with adhesions or malignancy, and solid tumours rarely undergo torsion of pedicle. While Sellheim's theory of mechanical factors in the torsion of pedicle plays an initial role in torsion of pedicle, Shaw's haemodynamic theory of the continuation of torsion by pulsation inside the ovarian artery causing series of tiny impulses to the pedicle is satisfactory.

The direction of torsion was stated to be clockwise (Novak), the direction of supination of forearm on the affected side, tumour rotating to the side it belongs (MacLeod and Read) and the anterior surface of the tumour rotating to the patient's right side (Howkins). The number of twists was commonly 3-4 circles (Howkins) several twists (Novak) $\frac{1}{2}$ to 12 turns (MacLeod). In the present series the direction of torsion was often clockwise on the right side and anti-clockwise on the left side, which confirms MacLeod's statement of rotation of pedicle towards the side it belongs. The incidence of torsion was 12% in operated tumours (Howkins) and in this series 27%. The size of the tumour was big, extending to umbilicus, in 13 cases. The incidence of malignant tumours was 22% in the hospital, whereas only 4% of twisted ovarian tumours were malignant. Solid benign tumours underwent torsion in 3 cases only, whereas benign cystadenomata accounted for 71% of twisted tumours.

Torsion of the fallopian tube was first described by Bland Sutton in 1890 and in 1912 Anspach collected 95 cases of which 62 were cases of hydrosalpinx. In 1927, and 1939

Eastman reviewed the cases. M. Jadhav in 1958, K. Achari in 1962, Tamaskar in 1963 and Lygonis in 1960 reported cases of torsion of hydrosalpinx. Kohl in 1956 and Sandler each reported one case of torsion of tube after Pomeroy's sterilisation. Tamaskar stated that about 122 cases were reported in the literature so far, whereas Lygonis traced over 200 cases reported in the World literature.

Hydrosalpinx, undergoing torsion showed an incidence of 68% on the right side; in 62% the twist was in clockwise direction. The correct diagnosis is seldom made preoperatively; in the present series the presumptive diagnosis was twisted ovarian tumour in 3 cases, ectopic

in the present series. The incidence of hydrosalpinges among twisted ovarian tumours was 11%. The torsion was on the right side in 4 cases and on the left side in 2; the degree of twist was from $\frac{3}{4}$ of a circle to 3 circles. The direction of twist was clockwise in 4 cases. The tumours were felt per abdomen in 4 cases, and 2 cases had pelvic tubo-ovarian masses. The duration of symptoms was 3 to 15 days in 3 cases and 1, 2, 3 months in 3 cases. Three patients were sterile, 2 patients were second parae and one a primipara. In the primipara the tumour (big tubo-ovarian mass) gave rise to symptoms during the puerperium, pregnancy having occurred in spite of it. In another case torsion of hydrosalpinx

TABLE II
Torsion of Hydrosalpinx

Age Years	Parity	Duration of symptoms	Preoperative diagnosis	Torsion extent & direction	Pathology
1. 36	2nd	3 months	Torsion. Ovarian cyst.	Clockwise 3 circles.	Left tubo-ovarian mass 6/4".
2. 20	1st Post-natal	3 days	—do—	—do—	Right tubo-ovarian mass 7/4".
3. 44	Sterile	2 months	Tubo-ovarian mass.	Clockwise 1½ circles.	Right hydrosalpinx 9/4".
4. 28	Sterile	1 month	Torsion ovarian cyst.	2 Circles.	Left hydrosalpinx 4/4".
5. 26	2nd	1 month	—do—	Anticlockwise 2 circles.	Right hydrosalpinx 5/3".
6. 30	Sterile	15 days	Ectopic pregnancy; torsion of tube.	Clockwise $\frac{3}{4}$ circle.	Right hydrosalpinx 4/3".

pregnancy in 2 and chronic salpingo-oophoritis in 1 case.

Table II gives a summary of clinical features of twisted hydrosalpinx

occurred one and a half years after a salpingo-oophorectomy on the left side and salpingostomy on the right side for hydrosalpinx in a sterile

woman. During laparotomy no adhesions were noticed in 4 cases and in the two mentioned above only thin adhesions were found.

Summary and Conclusions

Forty-six cases of torsion of uterine adnexae (40 ovarian tumours, 6 hydrosalpinges, 1 Stein-Leventhal ovary) with the study of clinical features, are reported. The incidence of torsion was 27.7% of operated ovarian tumours and of hydrosalpinx 11% of twisted ovarian tumours; 26% of cases were either pregnant or puerperal and 4 were postmenopausal. The size of the tumour was 15 to 24 weeks pregnancy size in 50% and bigger in 29%. In two-thirds of cases the torsion was 1 to 2 circles and it was more often clockwise on the right side and clockwise or anti-clockwise equally on the left side. Rare types, 3 solid benign, 2 malignant (carcinoma) tumours and one ovary of Stein-Leventhal syndrome, were noticed in this series.

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