

POST-OPERATIVE COMPLICATIONS FOLLOWING MAJOR GYNAECOLOGICAL OPERATIONS

(A Study of 113 Cases with Various Complications)

by

RAJNI C. MEHTA,* M.B., B.S., D.G.O.

SURENDRA K. JOSHI,* M.D.

and

SHIRISH N. DAFTARY,* M.D., D.G.O.

Introduction

Major operations in gynaecologic surgery are on the increase following the epoch making contributions in the fields like asepsis, blood transfusion, safer anaesthetics with specialised techniques and availability of wide-ranged chemotherapeutic and antibiotic agents. These contributions are undoubtedly very effective in widening the indications for gynaecologic surgery. The surgical procedures which were considered as hazardous in the past have been recognised as realities of today. The pre-operative and post-operative management with respect to above evolutionary changes has greatly reduced the morbidity and mortality following these operations. Gynaecologic surgeon of today has mastered many operative techniques (especially radical surgery for genital malignancy) and is undaunted in performing these operations. Yet

* Registrars, Department of Obstetrics and Gynaecology, K.E.M. Hospital, Parel, Bombay 12.

Paper read at the 12th All-India Obstetric and Gynaecological Congress at Ahmedabad in December 1963.

the morbidity following such operations is a major problem to today. Therefore, a review of these complications from time to time would greatly add to our knowledge. With greater understanding it would not be an exaggeration to state that the incidence of these complications may drop to the minimum.

Material and Method

During the period of 11 months, ranging from June 1961 to April 1962, there were 304 gynaecological laparotomies and 286 vaginal operations performed for various indications in Gynaecologic Department of the K. E. M. Hospital, Bombay. One hundred and thirteen cases amongst these 590 operations showed complications of various types, giving an overall incidence of complications as 19.3 per cent. Sixty-four patients out of 113 had undergone abdominal operations and the remaining 49 patients had vaginal operations performed on them. In subsequent studies, as the nature and incidence of complications in vaginal and abdominal surgery had no significant difference, the complications in 113 cases are not considered

in two separate groups, but are taken together in final evaluation. These cases were followed in the immediate post-operative period. Seventy cases were followed up for a period of 3 to 6 months in the out-patients department. Four cases out of these 113 cases died, during the first 10 days, of various complications.

Analysis

There were 24 cases having undergone hysterectomies for benign conditions, 11 had abdominal hysterectomy and 13 had vaginal hysterectomy. Radical removal of uterus and adnexa for malignant condition was done in 19 cases. In 8 of these 19, radical vaginal hysterectomy (Schauta's) was done and in the remaining cases radical abdominal (Wertheim's) hysterectomy was done.

Adnexal operations were performed in 32 cases. The various conditions for which they were performed are: inflammatory tubo-ovarian masses in 9 cases, benign ovarian cysts in 4 cases, malignant ovarian tumours in 3 cases, salpingectomy for ectopic gestation in 7 cases and salpingolysis in 9 cases.

There were 32 cases operated on for various types of genital prolapse. The frequency of various operative procedures was as follows: Fothergill's repair — 13 cases, Mayo-Ward's hysterectomy — 10 cases, anterior abdominal cervicopexy — 7 cases and anterior colporrhaphy and posterior colpoperineorrhaphy — 2 cases.

Three patients had undergone myomectomies and three had vulvectomy.

The radical operations for malignant conditions have the highest in-

cidence of complications, viz. 52.7 per cent. Vulvectomy has the next highest incidence, i.e. 42.8 per cent. The lowest incidence of complications is noted in cases operated for genital prolapse, i.e. 14.3 per cent.

TABLE I
Post-operative Shock

Nature of the operations	Cases
(A) Severe shock	
1. Operations for malignant lesions of cervix and vagina ..	4
2. Operations on adnexae ..	4
3. Operation for genital prolapse ..	1
	9
(B) Moderate shock	
1. Operations for benign conditions of the uterus ..	4
2. Operations for malignant lesions of the uterus ..	4
3. Operation on adnexae ..	1
4. Operations for prolapse ..	4
	13
Total	22

Table 1 indicates the incidence of *post-operative shock* encountered in the series, viz. 22 cases. This gives a relative incidence as 19.4 per cent. Severe post-operative shock was present in 9 cases with blood pressure reading of 70-60 mm. of Hg. systolic, and diastolic pressure being unrecordable. This feature was predominantly seen in cases where operations were performed for malignant conditions (4 cases) and ruptured tubal gestations (4 cases). The post-operative shock was considered as moderate when the blood pressure reading of systolic pressure was between 90 and 70 mm. of Hg. with a recordable

diastolic pressure. This was present almost equally in various operations like those for benign conditions (4 cases), malignant conditions (4 cases), prolapse (4 cases) and operation on adnexa (1 case). Routine anti-shock measures were employed in treating these cases and all the patients recovered, except a case of ovarian malignancy, who expired 40 hours after operation.

Post-operative pyrexia was seen in 100 out of 113 cases of various complications, giving an incidence of 88.4 per cent. The 13 cases labelled as apyrexial need some explanation. Even though these were apyrexial, they had in addition some other complications for which they were included in the study. Moderate pyrexia (99° — 100° F.) in first 24-48 hours was noted in 37 cases and higher temperature (100.5° — 102° F.) in 31 cases. In 32 cases the pyrexia was present for more than 48 hours with a range of 100° — 104° F.; these are calculated for incidence of post-operative pyrexia (viz. 20.3 per cent).

The *gastrointestinal complications* in the series were retching and vomiting in 10 cases, distension of the abdomen in 6 and diarrhoea in 3 cases. These last 3 cases had been operated for malignant conditions and were on deep x-ray therapy following the surgery.

Post-operative haemorrhage of secondary type was seen in 7 cases between the 3rd and 10th post-operative days, giving a relative incidence of 6.1 per cent. All these cases had evidence of sepsis as they had pyrexia and leucocytosis.

The *urinary complications* noticed are retention of urine and incon-

tinence the latter being shown in Table 2; the relative incidence is 37.1 per cent. Retention of urine preceded the urinary complications of incontinence, strangury, burning micturition and haematuria. The retention of urine was predominantly seen in the first 24 hours in 31 cases out of 42 and in 11 cases it continued for 2-4 days. This also includes cases particularly operated on for genital prolapse, where retention of urine occurred after removal of the self-retaining catheter. Incontinence of

TABLE 2
Incontinence of Urine

Nature of the operation	Cases	Remarks
Operations for malignant lesions of the genital tract ..	5	Vesico-vaginal fistula in two cases and uretero-vaginal fistula in one case
Operation for prolapse ..	1	
	Total	6

urine (Table 2) was present in 6 cases, 5 of which had radical operations for malignancy. The causes of incontinence were vesico-vaginal fistula in 2 cases, uretero-vaginal fistula in one case and in the remaining cases atony of the bladder.

The incidence of *local sepsis* was 22.1 per cent in relation to other complications. The wound complications are more frequently seen in cases operated for malignant conditions (7 cases) and vaginal operations particularly done for prolapse (6 cases). Disruption of the abdominal wound

was noticed in the superficial layers in abdominal operations, with one exception of burst abdomen after anterior exenteration.

The relative incidence of *anaesthetic complications* is 8.7 per cent. All these cases had spinal anaesthesia and cases done under general anaesthesia did not show other than gastrointestinal complications. Spinal anaesthesia was the anaesthesia of choice and was given in 89.8 per cent of the cases. Six cases had headache; paresis of lower limbs was found in 2 cases; purulent meningitis (*B. pyocyneus*) in 1 case and pulmonary sepsis was noticed in 2 cases; one of the two having been previously treated for bronchiectasis.

Post-operative thrombophlebitis was noticed in 13 cases, superficial venous thrombosis in 6 and deep venous thrombosis in 7 cases. The incidence of thrombophlebitis in relation to other complications is 11.5 per cent.

TABLE 3
Comparison of Relative and Absolute Incidence of Various Complications

Complications	Relative incidence in percentage	Absolute incidence in percentage
Post-operative shock ..	19.4	3.7
Post-operative pyrexia	20.3	5.4
Gastrointestinal complications	16.8	3.2
Secondary haemorrhage	6.1	1.1
Urinary complications ..	37.1	7.1
Wound complications ..	22.1	4.2
Anaesthetic complications	8.7	1.8
Post-operative thrombophlebitis	11.5	1.2
Post-operative mortality	3.5	0.67

In Table 3 the relationship between the absolute and relative incidence of these complications is presented. The urinary and wound complications show a predominance over other complications. Post-operative pyrexia and shock are next in descending frequency. The complications of least frequency are anaesthetic, secondary haemorrhage and post-operative thrombosis. The *primary post-operative mortality*, with reference to total number of operations performed (590) is 0.67 per cent and in relative aspect with other complications as 3.5 per cent.

Discussion

The above analysis has revealed that in spite of recent advances in surgery, the complications, though less in number, are seen quite frequently. It is shown by Krishna Menon that, during 1956-58, the incidence of hysterectomy has risen to 32 per cent of gynaecologic operations in contrast to 9.6 per cent between 1928-38 period. It is clear that widening indications with increased safety of operations contribute towards the increased incidence.

The incidence of complications is higher because of inclusion of all minor complications such as moderate pyrexia, superficial thrombophlebitis and urinary complications. It is also noticed that according to the number of operations performed (e.g. 223 for genital prolapse) a proportionately lower incidence of complications is seen, i.e. 14.3 per cent. The less frequently performed vulvectomy has higher incidence of 42.8 per cent.

Post-operative shock was noted in 22 cases. The etiological factors in

this complication are as quoted by Bonney such as excessive blood loss, tissue traumatising operation, pre-operative anaemia, presence of sepsis, long duration of anaesthesia, advanced age and debility and nociceptive impulses. The patients who had radical surgery for genital malignancy have a peculiar predisposition to this complication and about 8 cases have shown severe and moderate degrees of shock.

Post-operative pyrexia is of varied etiology and various investigations are necessary so that proper treatment can be instituted. The prevention of urinary infection, the commonest cause of post-operative pyrexia, would be achieved by proper sterilisation and preparation of these cases before submitting them to various operations. The urine cultures in these cases of pyrexia have revealed the growth of *B. proteus* and *B. coli* and *B. pyocyaneus* in 11, 9 and 2 cases respectively.

Secondary haemorrhage in the post-operative period was noted in 7 cases. All had vaginal operations done for various indications. One of the cases who had Fothergill's operation required 1500 ml. of blood transfusion, vaginal packing (twice) and suturing to control the haemorrhage. It is clear that complete eradication of vaginal sepsis before any surgery would greatly contribute towards avoidance of this complication.

Urinary incontinence as a result of extended hysterectomies for malignancy is seen in 3 cases. No vesicovaginal or ureteric fistulae were seen in cases of hysterectomy done for benign conditions. Krishna Menon, in 1,516 hysterectomies for benign

conditions, reports no ureteral injury. The cases in this study showing ureteral and bladder injury were of cancer cervix.

Pre-operative irradiation and extensive dissection in periureteric region are the precipitating factors in the causation of ureteric fistulae. The study of Welch et al has shown that the incidence of post-operative fistula was 11.9 per cent in cases treated with pre-operative irradiation. The non-irradiated group showed the incidence as 3.2 per cent.

Eight cases out of 25 who had wound complications, had undergone operations for malignant conditions of the genital tract. The presence of anaemia, lower nutritional status, failure of complete asepsis in these contribute largely towards this complication. Local pelvic sepsis largely responsible for rupture of major pelvic vessels, has been described by Brunschwig et al in 12 cases of their 1500 radical pelvic operations for uterine cancer. The prophylaxis as suggested by above authors lies in prevention of development of pelvic abscess in the post-operative period.

The anaesthetic complications of the series are noted in 8.7 per cent of cases and were of minor type except *B. pyocyaneus* meningitis in one case following spinal anaesthesia.

Post-operative thrombosis forms 11.5 per cent of these complications 5.4 per cent of these cases had superficial thrombophlebitis. If these cases are excluded the incidence of deep venous thrombosis comes to 6.1 per cent. The factors responsible for this complication in this series are difficult to assess. One of these patients died instantaneously of pulmonary em-

bolism. Due to unavailability of autopsy study in this case no further comments could be made.

In spite of significant morbidity of the series the overall mortality with reference to 590 operations in the same period is 0.67% and in relation to morbidity 3.5% as shown in Table 3.

It is evident from the above analysis and discussion that the use of modern drugs in treating shock, use of wide-ranged antibiotics, safety of anaesthesia and blood transfusion, as mentioned in the introductory remarks of this paper, have facilitated the treatment of encountered complications more satisfactorily than in the past. Krishna Menon, in his study of hysterectomies from 1929 to 1958, states that the mortality has fallen to 0.9 per cent from 12.5% in 1929. It should be the aim of the gynaecologists of today and tomorrow to further reduce the morbidity associated with these various gynaecological operations.

Summary

One hundred and thirteen cases of complications following major gynaecological operations from the Department of Gynaecology, K. E. M. Hospital, Bombay, are analysed during the period of 11 months from June 1961 to April 1962. The incidence of complications with respect to all the

operations performed in the same period is 19.3 per cent. Post-operative complications like shock, pyrexia, gastrointestinal disturbances, haemorrhage, disturbances of urinary tract, local wound complications, anaesthetic complications and thrombophlebitis are analysed with respect to specific operations. These are further discussed to establish further progress in their management. The primary operative mortality in immediate post-operative period is 0.67 per cent.

Acknowledgements

We thank the Dean, K. E. M. Hospital, Bombay, for allowing the use of hospital records in the preparation of this paper. We are also grateful to Dr. V. N. Purandare, M.D., F.R.C.S. for his valuable suggestions in carrying out this work.

References

1. Bonney, A. Victor: A Text Book of Gynaecological Surgery. ed. 6, London, 1952, Cassell & Co., Ltd.
2. Brunshwig, A. and Brockunier: Am. J. Obst. & Gynec. 80: 485, 1960.
3. Krishna Menon, M. K.: J. Obst. & Gynec. Brit. Comm. 67: 585, 1960.
4. Welch, J. S., Pratt, J. H. and Symmonds, R. E.: Am. J. Obst. & Gynec. 81: 978, 1961.