World Applied Sciences Journal 13 (8): 1817-1820, 2011
ISSN 1818-4952

Surgical Related Morbidity and Mortality in Patients Referred to a Tertiary Level Hospital

Chandra Madhu Das, Farkhunda Khursheed and Tahira Majeed

Department of Obstetrics and Gynecology,
Liaquat University of Medical and Health Sciences, Jamshoro, Sindh, Pakistan

Abstract: This descriptive cases series study was conducted to determine morbidity and mortality in patients referred to tertiary care hospital after surgical intervention at the Obstetrics and Gynecology department, Liaquat University Hospital Hyderabad Sindh. Out of 7450 admissions in Obstetrics and Gynecology Unit-II during the study period, 169 patients with surgical intervention outside the hospital were selected giving a frequency of 2.26%. Mortality rate in these patients was 20%. Common procedures performed were normal vaginal delivery with episiotomy, followed by caesarian section and hysterectomy. 84.63 % of cases were done by qualified persons. Complication with which patients presented were septicemia, hemorrhage and Vesico-vaginal fistula (VVF). Knowledge of the incidence of mortality and morbidity associated with surgery is vital in designing preventive strategies

Key words: Morbidity · Mortality · Surgery

INTRODUCTION

Surgery has become an integral part of global health care throughout world with an estimated 234 million operations performed annually. [1]. Surgery is performed to improve quality of life but at the same time it is associated with marked morbidity and mortality. Level of surgeon, type and technique of surgery, environment in which surgery is performed and availability of emergency facilities influence the surgical out come.

Modern surgery is highly sophisticated under the umbrella of antibiotics, blood transfusion, advanced surgical and anesthetist skills and intensive care facilities. Even then surgery is inherently potentially linked to adverse outcome, some of which are unavoidable in spite of best practice. Though in developed countries, health situation has been improved with passage of time, like in 1948; Weir [2] reported that out of 1711 hysterectomies 40 ended in death (2.34 %). While in 2001, Varal *et al.* [3] reported a ten year review of mortality and morbidity from hysterectomy in an Australian teaching hospital indicating mortality of 0.15%. In 2009, mortality due to surgery in developed countries is 0.4-0.8% and morbidity rate is 3-16% [4].

Complications rate of surgery is high in developing countries [5] and alarming especially in those patients who are operated in small centers by surgeons who are not skill enough to handle every type of emergency or the facilities are lacking to deal the emergency. The study was carried out to determine the frequency, morbidity and mortality in patients referred to Liaquat University Hospital after the surgical intervention outside the tertiary care hospital.

MATERIALS AND METHODS

This study was conducted at the Obstetrics and the Gynecology department, Liaquat University Hospital, a tertiary care hospital which serves as a major referred center for other public and private hospitals within the city of Hyderabad and from all over Sindh. All patients admitted in critical condition after delivery and surgical intervention carried out somewhere else outside Liaquat University Hospital Hyderabad were included in study. Those with minor problems after surgery or those who developed complications after surgery within Liaquat University Hospital were excluded from study. It was a prospective study for data collection, a structured

Corresponding Author: Chandra Madhu Das, Department of Obstetrics and Gynecology, Liaquat University of Medical and Health Sciences Jamshoro,Sindh, Pakistan. E-mail: researchworld2006@live.com.

proforma was developed. Variables analyzed were demographic profile, procedure performed indication for surgery, level of surgeon and type of complications. Data were analyzed in SPSS version 16.

RESULTS

During the reviewed period, Out of 7450 admitted patients, 169 patients presented with major complications after being delivered either at home or hospital or operated in a health care facility outside our hospital were selected. Table 1 shows the demographic char actors. The mean age was 24+1.21 and mean parity was 2.26 ± 0.184. Fifty three (53%) patients belonged to urban areas and 46.74% were from rural areas. Table 2 shows type of surgery performed among the studied cases including 39% elective surgeries. Table 3 shows level of surgeons carried out the operations and displays that 53.25% of cases procedure was performed by MBBS followed by diploma and degree holders. Table 4 shows type of complications.

Table 1:Demographic characters of studied cases no= (169)

Character	Results
Mean± SD age	24± 1.21
Mean± SD parity	2.26±0.184
Marital status	Married 160(94.67%)
	Unmarried 9(5.32)
Residency	Rural 79(46.74%)
	Urban90(53.25)
Education	Illiterate 118(69.82%)
	Literate 51(30.17%)

Table 2: Type of surgical procedures among the studied cases (*n*= 169)

Procedure	Number	Percentage
NVD with Episiotomy	60	35.50 %
Caesarean Section	42	24.85 %
- Emergency	12	7.1 %
- Elective	30	17.75 %
Abdominal Hysterectomy	41	24.26 %
- Obstetric	05	2.95 %
- Elective	36	21.30 %
Vaginal Hysterectomy	02	1.18 %
Induced miscarriage	14	8.28 %
Laparotomy	10	5.91 %

Table 3: Level of Surgeons performed the operations among the studied cases (n = 169)

Qualification	Number	Percentage
Junior Doctor	90	53.25 %
Diploma Holder	26	15.38 %
Male General Surgeon	20	11.83 %
Qualified / Experienced Surgeon	07	4.14 %
Lady Health Visitor (LHV)	22	13.01 %
Dai	4	2.36 %

Table 4: Morbidity and Mortality among the studied cases (n=169)

	Number	Percentage
Septicemia	59	34.91 %
Hemorrhage	43	25.44 %
Vesicovaginal fistula	26	15.38 %
Shock	14	8.28 %
Recto vaginal fistula	8	4.73 %
Wound hematoma	7	4.14 %
Burst abdomen	6	3.55 %
Sub-optimal surgery	6	3.55 %
Death	34	20%

DISCUSSION

The assessment of the quality of surgery in any country is paramount to understand the need of improvement at different levels to obtain the best outcome. In 2002 World Bank reported that an estimated 164 million disability-adjusted life years, representing 11% of entire disease burden, were attributable to surgically treatable conditions [6]. Risk of surgically related complications exist in every region of world but its frequency is less in industrialized countries as compare to unindustrialized countries [7]. Up to now, studies due to surgical related complications in obstetrics and gynecology are conducted only within major hospitals. This study shows that severe acute morbidities occur in considerable percentage of women operated outside the tertiary level hospitals. 169(2.26%) looks to be small number but was stress full for the team working in the emergency. The stress of managing the patients, handle the aggressive attendants and the fair of current culture of media trial. Out of 169 patients, 34 could not be saved giving a mortality rate of 20.11%. Except obstetric emergencies rest of surgeries were elective. To lose precious lives due to elective surgery (39%) is ridiculous. This mortality is either comparable or more than any major direct cause of maternal death [8-10].

As 39% of surgeries were elective, this is in contrast to surgeries in tertiary level hospitals where complications are more in emergency surgeries [11]. So, for the level of surgeon is considered; 84.62% of cases were handled by doctors. 53.25% had simple MBBS while the rest possessed either diploma or degree holders. MBBS doctors are those who have received training in tertiary level hospitals for the period of 6 months to 2 years.

This shows that due to lack of audit and feedback we are not only loosing precious lives but many more are left in misery for rest of their lives.

Leading complications with which patients presented were sepsis, hemorrhage and fistulae. 8.28% patients had septic induced miscarriage. From decades, it is seen that sepsis, hemorrhage and induced miscarriage is leading causes of maternal morbidity and mortality in studies from all over Pakistan [12-19] and from other developing countries [20-21], but in developed countries mortality and mortality due to these reasons secondary to surgery has declined due to adherence of aseptic measures, introduction of antibiotics, improvement in their health system, documentation and accountability [4]. In Pakistan, obstetrics causes 80-90% of vesico-vaginal fistulae but in the current study, 26 patients (15.38%) were admitted with vesico-vaginal fistula as a complication of abdominal hysterectomy. This trend is usually seen in industrialized countries where 50% of bladder injuries are after simple abdominal hysterectomy [22]. While, incidence of bladder injuries in a study from Pakistan in obstetrical and gynecological procedure is 0.7% [23].

During study period, 6 patients were received with sub optimal surgery including 3 patients performed surgery for ovarian malignancies, one for endometriosis and two for placenta praevia. The patients with ovarian malignancies and endometriosis presented with advanced stage disease because of sub optimal surgery carried out at initial Laparotomy. Similarly, two patients received massive postpartum hemorrhage (PPH) after sub total hysterectomy for placenta praevia; as such patients need total hysterectomy with complete removal of placental tissue.

Though surgery is performed to improve quality of life but the results of this study showed that it is risky, devastating to patients and costly to health care system. It looks that there are certain lapses in the training chain of doctors that should be addressed. Complications are often preventable and so prevention of problems requires changes in the system and individual behavior.

CONCLUSION

Knowledge of the incidence of mortality and morbidity associated with surgery is vital in designing preventive strategies. All of us under stand that surgery is associated with some risk even in best hands. As the cause of adverse out come of surgery are multi factorial than the mean by which we minimize harm are many.

REFERENCE

1. Alex, B., G. Thomas and R.Williams, 2009. A surgical safety check list to reduce morbidity and mortality in a global population. New England J. Med., 360: 491-99.
2. Weir, W., 1948. A statistical report of 1771 cases of hysterectomy. Am J. Obst. and Gynae. 56: 1151-55.
3. Voral, N., M. Healey, P. Tang, P. Sheehan, P. Moher and D. Hill, 2001. Ten-year review of hysterectomy morbidity and mortality: can we change direction2. Aust. N. Z. J. Obstet. Gynaecol., 41: 295-302.
4. Butler, J. and I. Thomas, 2004. Auditing morbidity and mortality in gynaecological surgery. Current Obstetrics and Gynaecol., 14(6): 426-433.
5. Bickler, S.W. and B. Sanno-Duanda, 2000. Epidemiology of paediatric surgical admissions to a government referral hospital in Gambia. Bull World Health Organ, 78: 1330-1336.
6. Debas, H.T., R. Gosselin, C. MecCord, A. Thind. Surgery, In: Jamison, D.T. J.G. Breman and A.R. Measham, eds, 2006. Disease control priorities in developing countries. 2nd ed. Disease control priorities project. Washington DC: International bank for reconstruction and development/world bank, pp: 1245-60.
7. Yii, M.K. and K.J. Ng, 2002. Risk-adjusted surgical audit with the POSSUM scoring system in a developing country. Br. J. Surg., 89: 110-113.
8. Gessessew, A., 2007. Maternal complications – in a zonal hospital. Ethiop Med. J., 45(1): 47-54.
9. Begum, S., A. Nisa and I. Begum, 2003. Analysis of maternal mortality in a tertiary care hospital to determine causes and preventable factors. JAMC Abbottabad, 15(2): 49-52.
10. Bashir, A., M. Aleem, M. Mustansar and S. Ahmed, 1994. 5 years study of maternal mortality in Faisalabad City. Pakistan J. Obstetrics and Gynaecol., 7: 9-17.
11. Nielsen, T.F. and K.H. Hökegård, 1984. Cesarean Sectiona and Intraoperative surgical complications. Act Obstetricia et Gynacologica Scandinavica, 63(2): 103-108.
12. Begum, I., A. Khan, T. Jadoon and N. Begum, 2000. Analysis of Maternal mortility in an tertiary care hospital Abbottabad, Pakistan. J. Med. Res., 39: 107-110.
13. Farook, S.M., 1993. Maternal mortility at Liaquat Medical College Hospital Hyderabad. Journal of College of Physician and Surgeon Pakistan, 3: 8-11.

14. Sachdev, P.S. and G.U. Memon, 1996.An analysis of maternal deaths in a hospital in Hyderabad. J. College of Physician and Surgeon Pakistan, 6: 313-315.
15. Abdullah, A., H.G. Rind and A.R. Memon, 2010. Puerperal Sepsis: presentation, management and out come; a hospital based study. Pak J. Med. Res., 49(4): 106-8.
16. Sami, S. and S.N. Baloch, 2002. Maternal mortality in Balochistan: a challenge for the obstetricians. JCPSP, 12: 468-471.
17. Shah, N. and H.N. H.N. Khan, 2007. Third delay of maternal mortality in tertiary hospital. RMJ, 32(2): 163-167.
18. Rehana, R., T. Shafquat and R.F. Nasreen, 2006. An analysis of direct causes of maternal mortality. JPMI, 90(1): 86-91.
19. Parkash, A., S. Swain and A. Seth, 1991. Maternal mortality in India: Current status and strategies for reduction. Indian Pediatr, 12: 1395-400.
20. Prual, A., M.H. Bouvier-Colle, L. de Bernis and G. Breart, 2000. Severe maternal mortality from direct obstetric causes in west African case fatality rates. Bull world Health Organ., 78(5): 593-602.
21. Hafeez, M., S. Asif and H. Hanif, 2005. Profile and repair success of vesico-vaginal fistula in Lahore. J. Coll Physicians Surg. Pak., 15(3): 142-4.
22. Symmonds, R.E., 1984. Incontinence vesical and urethral fistulas. Clin Obstet. Gynecol., 27(2): 318-20.
23. Ghazi, A., P. Iqbal and M. Siddique, 2008. Bladder and ureter injuries during obstetrics and Gynaecologist procedure. Pakistan J. Surgery, 24(1): 53-6.