BOWEL INJURIES FOLLOWING UNSAFE ABORTION: THE SURGEON'S PERSPECTIVE

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ABSTRACT

OBJECTIVE: To study the pattern of bowel injuries in patient with unsafe abortion, its management and outcome.

METHODOLOGY: This retrospective study was conducted from July 2010 to July 2013, on patients attended by Surgical Unit III, at Department of Gynecology and obstetrics, Civil Hospital, Karachi. Twelve patients with bowel injuries following unsafe abortion were included. Relevant clinical data including demographic details, visceral injury, procedure performed, complications and mortality was collected and analysed on SPSS 17.

RESULTS: Mean age was 27.6±6.1 years and 6 (50%) patients were in age group 21-30 years. All patients presented during 1st trimester of pregnancy. Abdominal pain (91.7%) and fever (91.7%) were the commonest clinical presentations. Exploratory laparotomies were performed in all the patients. In six (50%) patients abdominal cavity was heavily contaminated with purulent discharge, necrotic and feculent material. Recto-sigmoid perforation (41.7%) and ileal perforation (33.3%) were the most common gut injuries. Uterine perforation was posterior in 58.3% cases. Hartmann's procedure (41.7%) and resection & anastomosis (25%) were the common surgical procedures performed for different bowel injuries. Surgical site infections (66.7%) & respiratory tract infection (25%) were the most common postoperative complications. The overall length of hospital stay ranged from 3-28 days. Mortality rate was 8.3% (n=1).

CONCLUSION: Our results show a different pattern of injury to bowel and recto-sigmoid & ileal regions are the most commonly injured segments of bowel in patient with unsafe abortion. Bowel injury in patient with unsafe abortion has significant morbidity and mortality in our set up.

KEY WORDS: Unsafe Abortion, Bowel Injuries, Colostomy, Hartmann's procedure.

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INTRODUCTION

Unsafe abortion is a procedure for terminating an unintended pregnancy carried out either by unskilled person or in an environment not suitable for the procedure. Each year, about 20 million unsafe abortions take place globally, resulting in about 78,000 deaths from unsafe abortion, noticeably in Asian region[1,2].

In Pakistan, law concerning abortion is restrictive where induced abortion can only be allowed in order to save life of women or to provide necessary treatment, early in pregnancy. Since majority of unsafe abortions are conducted without disclosure, it is therefore difficult to determine the precise numbers of unsafe abortions. Information regarding abortion is derived from studies on patients admitted in hospitals due to complications of abortion[3].

In our society, deficiencies in family planning, poverty, social and legal barriers to abortion, compel women to seek abortion by unqualified and inexperienced person under unsterile conditions leading to a range of complications[4]. Hemorrhage, pelvic abscesses, peritonitis, sepsis, uterine and bowel injuries are frequently associated with unsafe abortion. Delay in seeking medical care, associated complications and high gestational age at the time of abortion adversely affect the outcome of these patients.[5-11]

Bowel injury is a grave complication of unsafe abortion and is associated with considerable morbidity and mortality.[9,12,13] It is a frequent reason for on-call surgeon to visit emergency gynecology and obstetrics theatre and poses great challenge to both surgeons and gynecologist practicing in resource limited countries.[14]

In studies from Pakistan, incidence of these bowel injuries secondary to unsafe abortion varies from 6 to 22%.[5-11] However, most of these studies represent the

work of gynecologists and are focused on various other aspects of unsafe abortion. There is paucity of data from Pakistan regarding the details of injuries to bowel following unsafe abortion. The purpose of our study was to elaborate the pattern of bowel injuries, their management, and morbidity and mortality related to bowel injuries, in our region.

METHODOLOGY

This retrospective study was carried out on patients who presented to Department of Gynecology and obstetrics with unsafe abortion and bowel injuries between July 2011 to July 2013 and attended by team of Surgical Unit III, Civil Hospital, and Karachi. Our center receives patients not only from urban and suburban population of Karachi but also from remote areas of Sind and Baluchistan province.

All the Patients who had bowel injuries following unsafe abortion were included in this study; however, patients with gestational age of more than twenty-three weeks at time of induction were excluded form study. Similarly, patients with inadequate information regarding gestational age at parity, distribution of injuries, complications and incomplete operative notes were excluded.

Data was collected, from medical records available in department of gynecology and obstetrics and at our surgical ward. Due to improper record-keeping system at our center, we were only able to retrieve complete data of twelve patients.

Information regarding age, residence , marital status, parity, gestational age at termination of pregnancy, duration of illness (delay in seeking medical care), clinical features, type of bowel injuries, injuries to other viscera, procedure performed, post-operative complications and mortality was retrieved.

All the patients with unsafe abortion were initially resuscitated and managed by gynecological team and surgical team was involved when bowel injury was suspected during the exploratory laparotomy.

- Post-operatively patients were managed in ICU and Surgical ward. All the patients received broad spectrum antibiotic coverage and later these patients were shifted to antibiotic according to culture sensitivity.

The statistical analysis was performed using SPSS version 17. Quantitative data was represented by mean ± SD and qualitative data was displayed as frequency and percentage . As the study was retrospective observational study hence no statistical test was applied.

RESULTS

During this study, 12 patients were managed for bowel injuries secondary to unsafe abortion. Mean age was 27.6±6.1 years and 6 (50%) of patients were in age group 21-30 years. Data regarding marital status, parity, gestational age at termination of pregnancy, and signs and symptoms at presentation are mentioned in Table I. Abdominal pain (91.7%) and fever (91.7%) were the commonest clinical presentations (Table II).

Two patients were seen within twenty-four hours of termination of pregnancy. One of them presented with intestinal prolapsed from the vagina in department of gynecology and obstetrics. Exploratory laparotomies were performed in all the

TABLE I: DEMOGRAPHIC PROFILE OF PATIENTS WITH BOWEL INJURY FOLLOWING UNSAFE ABORTION

Characteristic		Frequency (n=12)	Percentage
Age (in years)	15- 20	2	16.7
	21-30	6	50
	31 -40	4	33.3
Residence	Urban and Sub-urban	7	58.3
	Rural	5	41.7
Parity	Nulliparous	2	16.7
	Multiparous	10	83.3
Marital status	Unmarried	2	16.7
	Married	10	83.3
Gestational age	First Trimester	12	100
	Second Trimester	0	0
Duration of illness	<1 week	10	83,3
	>1week	2	16.7

TABLE II: CLINICAL PRESENTATION IN PATIENTS WITH BOWEL INJURY FOLLOWING UNSAFE ABORTION

Clinical presentations	Frequency (n=12)	Percentage
Abdominal pain	11	91.7
Fever	11	91.7
Vaginal bleeding and discharge	8	66.7
Signs of peritonitis	8	66.7
Diarrhea	4	33.3
Visible loops of bowel through vagina	1	8.3

TABLE III: DISTRIBUTION OF PATIENTS WITH BOWEL INJURIES FOLLOWING UNSAFE ABORTION

Gut Injury	Frequency (n=12)	Percentage
Recto-sigmoid perforation	5	41.7
Ileal perforation	4	33.3
Jejunal perforation	2	16.7
Descending Colon perforation	1	8.3

TABLE IV: RELATIONSHIP OF SITE OF SITE OF UTERINE PERFORATION TO VISCERAL INJURY

Site of uterine perforation		Frequency (n=12)	Percentage
Anterior		**2**	**16.7**
	Injuries to small bowel	1	8.3
	Injuries to colon	0	0
	Injuries to Recto-sigmoid	0	0
	Injury to bladder	1	8.3
Posterior		**7**	**58.3**
	Injuries to small bowel	2	16.7
	Injuries to colon	0	0
	Injuries to Recto-sigmoid	5	41.7
Fundus		**3**	**25**
	Injuries to small bowel	2	16.7
	Injuries to colon	1	8.3
	Injuries to Recto-sigmoid	0	0

TABLE V: TYPE OF PROCEDURE PERFORMED

Procedure	Frequency (n=12)	Percentage
Hartmann's procedure	5	41.7
Resection and anastomosis	3	25
Ileostomy	2	16.7
Primary repair	1	8.3
Transverse colostomy	1	8.3

TABLE VI: DISTRIBUTION OF PATIENTS ACCORDING TO COMPLICATION

Postoperative complications	Frequency (n=12)	Percentage
Surgical site infections	8	66.7
Respiratory Tract Infection	3	25
Wound dehiscence	2	16.7
Septic shock	2	16.7
Pelvic abscess	2	16.7

patients. In six (50%) patients abdominal cavity was heavily contaminated with purulent discharge, necrotic and feculent material. Recto-sigmoid perforation (41.7%) and ileal perforation (33.3%) were the most common gut injuries. Details of distribution and pattern of injuries to abdominal viscera is represented in Table III.

Uterine perforation was posterior in 58.3% cases. Relationship between uterine perforation and visceral injury is shown in Table IV.

Hartmann's procedure (41.7%) and resection & anastomosis (25%) were the common surgical procedures performed for different bowel injuries (table V).

Surgical site infections (66.7%) was the most common postoperative complication (Table VI).

The overall length of hospital stay ranged from 3 days to 28 days with a mean stay of 12 days.

Mortality was 8.3% in this study and only one patient died on third day post-operatively due to intra-abdominal collection and septicaemic shock.

DISCUSSION

The incidence of bowel related injuries secondary to unsafe abortion is much higher in developing countries[12-19]. Although various researcher from Pakistan have mentioned the incidence of bowel injuries following unsafe abortion, most of these studies are deficient in detail of these injuries.[5-11] Our study elaborates detail of twelve patients with unsafe abortion attended by our unit over a duration of two years, their pattern of injuries to bowel following unsafe abortion, their management, and their outcome.

Unsafe abortion in unmarried, nulliparous patients and in advanced pregnancy is associated with adverse outcome.[12] In studies from underdeveloped countries majority of patients with complication of unsafe abortion are unmarried and nulliparous, secondary school children or dependant member of family.[12,14,17,19,20] Furthermore due to financial constraints, cultural and legal restrictions majority of patient have advanced pregnancy at time of induction.[12,14,17]

However, in contrast to these studies, most of patients in our study were young, married, multipara, and were in their first trimesters at the time of induction. These observations are in consistent with findings of other studies from Pakistan.[5-11,15] Deficiencies in family planning and financial constraints are important factors that compel married women in our society to undergo abortion in order to limit the size of their family.[11,15]

Another factor associated with adverse outcome in patients with unsafe abortion is delay in seeking medical care. Due to sensitivities associated with unsafe abortion, patient defer medical attention even in the presence of complications.[12,14,17] In present study majority of patients presented late to tertiary health care facilities which is in consistent to the observations of finding of other researchers. Our tertiary care centre receive patients, referred from remote areas of Sind and Baluchistan and these patients have to travel long distance to obtain medical attention in event of complications. This is another reason in our study for delay in seeking medical care by these patients.

In present study, the most frequently injured bowel segment is recto-sigmoid area, followed by terminal ileum. This finding is in contrast to the earlier studies which have demonstrated that distal ileum is the most frequently injured bowel segment due to its relative fixity, followed by recto-sigmoid region[6,12-14,18-20] This contrast in our study can be explained by the fact that all the patients in our study were in their first trimester, at time of unsafe abortion (Table I). During first trimester uterus is placed in pelvis in proximity to sigmoid colon and rectum, making them more susceptible to injury during first trimesters.[19] With increase in size of uterus small bowel becomes more prone to injury during unsafe abortion.[21]

While cases of prolapsed bowel segment through uterine perforateon are uncommon,[18,21-27] this complication was observed in a nulliparous patient in present study. In nulliparous, cervical os is difficult to dilate and use of excessive force to dilate results in uterine perforation and bowel segment is inadvertently pulled outside through vagina.[19] Prolapse of bowel through uterine perforation rapidly compromise blood supply of affected segment resulting in gangrene,[19] a complication that is also present in our patient.

Injury to bowel after unsafe abortion demands aggressive resuscitation and surgical intervention. Early and appropriate intervention improves the outcome of these patient.[17] Simple closure after refreshening of margins is recommended in solitary perforations and intestinal resection and anastomosis for multiple perforations in small bowel, stoma formation is suggested in patients patient with gangrene and purulent peritonitis[12,14,17,18].

On the other hand, injuries to colon and rectum are difficult to manage and may be associated with rapid bacterial dissemination, fecal contamination, and septicemic shock.[16] Primary repair in injuries to left colon and rectum is associated with adverse outcome while formation of stoma is easier to accomplish, reduces duration of surgery and is without the danger of leakage.[12,14,17,18] In present study, patients with injuries to left colon and rectum were managed by stoma formation and Hartmann's procedure (Table IV).

Surprisingly though, in a study by Mabula et al[12] most of patienst with injuries to left colon and rectum were managed by primary repair and primary resection and anastomosis and colostomy was only reserved for management of gangrenous large bowel segment. This strategy was adapted to avoid need for second surgery in patients with bowel injury and to reduce the cost of care.[12] However this study depicted higher morbidity and mortality rates as compared studies conducted by other authors.[14,17,18]

Most common complication in our study is surgical site infection which is similar to observations made by other studies. Most patient in our study had purulent or fecal peritonitis and presented late for intervention. These factors may account for contamination of the laparotomy wound during the surgical procedure and SSI[6,12,18].

We had one mortality in this study, with injuries to sigmoid and descending colon, along with fecal contamination and septicemic shock. Patient was resuscitated primary repair of descending colon and sigmoid colon done along with diverging transverse colostomy. Post-operatively patient developed intra-abdominal collection, septicemic shock and died on third post-operative day.

CONCLUSION

In summary, our results give a different pattern of injuries to bowel after unsafe abortion then the pattern observed by earlier studies. Recto-sigmoid region is the most common injured segment of bowel in our study, followed by ileum .This finding correlates with the finding that all the patients in our study were in their first trimester. Bowel injury in patient with unsafe abortion has significant morbidity and mortality in our set up. Our results, however, support the findings of earlier studies[12-15] that early diagnosis, aggressive resuscitation improve the outcome of patients with bowel injuries following induced abortion and patients with delayed presentation, with fecal peritonitis , gangrenous bowel segment and injuries to left colon and rectum require stoma formation. This study is an attempt to provide the details of patients related to bowel injuries following unsafe abortion and their outcome nonetheless, a multicentre study including centres across the country would provide greater insight to patterns

bowel injuries following unsafe abortion, their management and their outcome.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

FZ: Study design, analysis and interpretation of data, drafting the manuscript, final approval of the version to be published

KAM: Conception, critical revision, final approval of the version to be published

MTU, RAK & AUZ: acquisition of data, drafting the manuscript, final approval of the version to be published

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

Authors declare no conflict of interest

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