Original Article

A study of management and complications associated with the incisional hernia patients at tertiary health care center

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Abstract

Introduction: The incidence of wound dehiscence /burst abdomen varies from one center to another worldwide. While it is recorded to be 1-3 % in most Centers, some Centers in India recorded incidence of burst abdomen as high as 10-30% **Aims and Objectives:** To Study management and complications associated with the incisional hernia patients at tertiary health care center. **Material and Methods:** This study was carried out at R.C.S.M. Government Medical College and C.P.R. General Hospital, Kolhapur for a period of 2 years i.e. from April 2011 to March 2013. Total 50 cases were studied. The cases had a detailed clinical examination in view of position, size, shape of hernia, previous scar, contents of hernia, reducibility, size of defect. Tone of muscles, cough impulse and skin over swelling. In patients with obvious cause for incisional hernia were treated for the cause first for e.g. incisional hernia with BEP were treated with TURP first. **Result:** 14 patients had surgical site infection, 3 patients had respiratory tract infection and one patients had urinary tract infection in the post-operative period of previous surgery.12 percent of patients had a defect size of less than 3 cm, 78 percent patients had a defect size of 3-5 cm and 4 percent of patients with defect size>5 cm while defect size of 6% patients was clinically not appreciated. 39 (78%) of the patients Mesh repair was done and in 10 (20%) anatomical repair was done and in 1 (2%) patient by Laparoscopy repair. 4 patients had seroma formation and 3 patients had surgical site infection with 2 patients had respiratory tract infection. **Conclusion:** the study reveals post operative wound infection is the most common etiology for incisional hernia. Most incisional hernias require mesh repair. Most common complications after mesh repair are seroma formation and surgical site infection.

Keywords: Incisional hernia, Mesh repair, Seroma formation, Surgical site infection (SSI).

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Received Date: 19/08/2016 Revised Date: 19/08/2016 Accepted Date: 19/08/2016

Access this article online	
Quick Response Code:	Website: www.statperson.com
	DOI: 01 September 2016

INTRODUCTION

The incidence of wound dehiscence /burst abdomen varies from one center to another worldwide. While it is recorded to be 1-3 % in most Centre's, some Centre's in India recorded incidence of burst abdomen as high as 10-30%. Burst abdomen is associated with a mortality rate as high as 45%.[1]Numerous studies have been conducted evaluating a bewildering variety of closure techniques and suture materials. Predicting the outcome of the management of abdominal wound dehiscence will certainly reduce mortality and morbidity in the form of prolonged hospital stay, increased economic burden on health care resources and long term complication of incisional hernia. Good knowledge of the risk factors is mandatory for prophylaxis[2]. Surgeon factor like midline incision, improper suture technique, improper aseptic precaution plays a role[3].Acute wound failure has been discussed under various names i.e. wound dehiscence, burst abdomen, wound disruption and evisceration. It is a very serious complication of abdominal surgery, with very high mortality rate and no single cause being responsible: rather it is a multi-factorial problem[4]. Two

How to site this article: Vasant Anandrao Deshmukh, Suraj Gandhi. A study of management and complications associated with the incisional hernia patients at tertiary health care center. *International Journal of Recent Trends in Science and Technology*. September 2016; 20(2): 159-162. http://www.statperson.com (accessed 03 September 2016).

basic events are seen in wound dehiscence are decreased wound strength and increased collagenolysis, most commonly due to infection. The higher frequency of burst abdomen is, in contrast with many Western studies which showed an incidence of 0.4 to 3.5% but is in accordance with the study done by Mathur *et al* which showed that the problem of wound dehiscence is much more prevalent in South East Asia than the Western world. This may be attributable to poor nutritional state of the patients, delayed presentation to the tertiary care hospitals, poor quality of suture material, disease like tuberculosis of the abdomen which is endemic in the countries of South East Asia and higher load of emergency surgeries[5]. Abdominal wound dehiscence remains a major cause of morbidity following any laparotomy whether elective or emergency. The burst abdomen is associated with high morbidity of up to 40% and mortality of up to 18% in elderly or malnourished patients in whom a burst represents a final additional insult to their already stressed physiology[6].

MATERIAL AND METHODS

This study was carried out at R.C.S.M. Government Medical college and C.P.R. General Hospital, Kolhapur for a period of 2 years i.e. from April 2011 to March 2013. Total 50 cases were studied. Following criteria were applied to the cases-Patient presenting with incisional hernia in surgical OPD and getting admitted in surgical ward during study period were included. Age of patients less than 12 years and patients with recurrent incisional hernias were exclude from the study. A written well informed consent explained to patient in his language regarding participation in study was taken. A through history of each patient in the study was taken regarding the onset and progression of symptoms like pain, vomiting, cough, dysuria, reducibility and association with pregnancy. History regarding the previous operative episode in view of indication, duration of hospital stays, day of suture removal, post-operative complications was taken which helped to clinch the cause behind formation of weak scar. A proper personal history regarding chronic cough, bladder and bowel complaints, addictions was taken which would have contributed to etiology of incisional hernia. The cases had a detailed clinical examination in view of position, size, shape of hernia, previous scar, contents of hernia, reducibility, size of defect. Tone of muscles, cough impulse and skin over swelling. Patients were investigated with routine investigations CBC, BSL, RFT, and LFT. Serum proteins, chest x-ray, E.C.G for fitness.USG abdomen was done whenever necessary. In patients with obvious cause for incisional hernia were treated for the cause first for e.g. incisional hernia with BEP were treated with TURP first. A patients was defined diabetic if patient had been diagnosed as diabetic earlier and was on treatment or if patient‘s BSL was greater than normal. Hypertension was defined as patients who were diagnosed as hypertensives and were on treatment or those patients whose blood pressure was greater than 140/90mm Hg on 3 consecutive days. Obesity was defined as body mass index of more than 30 in both men and women. All patients underwent surgical procedure after preoperative preparations

Procedure

Depending upon the size of hernia defect. Intra-operative findings, and surgeon’s choice, incisional hernia was treated by following modalities: Anatomical repair, Prolene mesh repair: Open surgery, Laparoscopy. In small defects size (<3 cm), anatomical repair was done in which after reduction of the sac, the musculo-aponeurotic sheath was closed with non-absorbable suture material and above layers closed thereafter. In one of the case, decision of mesh repair was taken. However, peritoneum could not be approximated due to tension and hence decision changed and anatomical repair was done in this case.In laparoscopic technique, the defects are repaired posteriorly and no dissection within the scarred layer of anterior fascia is required. The laparoscopic approach may also allow for identification of additional hernia defects in the anterior abdominal wall during the repair.

RESULT

Table 1: Post-operative complications of previous surgery

Complication	No. of cases
SSI	14
RTI	3
UTI	1

This study showed that 14 patients had surgical site infection, 3 patients had respiratory tract infection and one patients had urinary tract infection in the post-operative period of previous surgery.

Table 2: Size of hernia defect

Size of defect	No. of cases	Percentages (%)
Not appreciated clinically	3	6
1-3 cms.	6	12
3-5 cms.	39	78
>5 cms.	2	4

12 percent of patients had a defect size of less than 3 cm, 78 percent patients had a defect size of 3-5 cm and 4 percent of patients with defect size>5 cm while defect size of 6% patients was clinically not appreciated.

Table 3: Type of repair of incisional hernia

Repair	No. of cases	Percentages
Mesh repair	39	78
Anatomical repair	10	20
Laparoscopy repair	1	2

In 39 (78%) of the patients Mesh repair was done and in 10 (20%) anatomical repair was done and in 1 (2%) patient by Laparoscopy repair was done.

Table 4: Post-operative complications

Complications	No. of cases
Seroma formation	4
Surgical site infection	3
Respiratory tract infections	2

In the study 4 patients had seroma formation, 3 patients had surgical site infection and 2 patients had respiratory tract infection.

DISCUSSION

In our institute we have repaired depending upon the size of hernia defect, intra-operative findings, and surgeon's choice. I Many techniques have been introduced to help reduce recurrences and complications of incisional hernias, including simple suture repair, prosthetic mesh repair, component separation, laparoscopic repair, and recently, biological dermal substitutes for hernia repair.7,8 Simple primary repair of fascia has been associated with recurrence rates as high as 49%.9- 10 When permanent mesh gained widespread use after 1963,11 recurrence rates of incisional hernias decreased, with some series reporting recurrence rates closer to 10% for open mesh repair of ventral hernias.12- 13 Other methods for more complex hernias and recurrences have included component separation14 and combinations of mesh repair plus component separation.15 Recently, various biological mesh products such as collagen matrix (Alloderm; LifeCell Corporation, Branchburg, New Jersey) have added to the numerous ways of incisional ventral hernias are being repaired.16 However, no clear consensus has been reached about which procedure yields the best results. Even within a single institution, individual surgeons repair incisional hernias differently. onal hernia was treated by following modalities: Anatomical repair, Prolene mesh repair: Open surgery, Laparoscopy. In small defects size (<3 cm), anatomical repair was done in which after reduction of the sac, the musculo-aponeurotic sheath was closed with non-absorbable suture material and above layers closed thereafter. In one of the case, decision of mesh repair was taken. However, peritoneum could not be approximated due to tension and hence decision changed and anatomical repair was done in this case. In laparoscopic technique, the defects are repaired posteriorly and no dissection within the scarred layer of anterior fascia is required. The laparoscopic approach may also allow for identification of additional hernia defects in the anterior abdominal wall during the repair**.** Form our study we have observed that the study showed 14 patients had surgical site infection, 3 patients had respiratory tract infection and one patients had urinary tract infection in the post-operative period of previous surgery. 12 percent of patients had a defect size of less than 3 cm, 78 percent patients had a defect size of 3-5 cm and 4 percent of patients with defect size>5 cm while defect size of 6% patients was clinically not appreciated. In 39 (78%) of the patients Mesh repair was done and in 10 (20%) anatomical repair was done and in 1 (2%) patient by Laparoscopy repair. In the study 4 patients had seroma formation, 3 patients had surgical site infection and 2 patients had respiratory tract infection.

CONCLUSION

The study reveals post operative wound infection is the most common etiology for incisional hernia. Most incisional hernias require mesh repair. Most common complications after mesh repair are seroma formation and surgical site infection.

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Source of Support: None Declared
Conflict of Interest: None Declared