

Comparative Evaluation Of Cardiff Repair And Mesh Plasty In Incisional Hernias

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Citation

R Godara, P Garg, G Shankar. *Comparative Evaluation Of Cardiff Repair And Mesh Plasty In Incisional Hernias*. The Internet Journal of Surgery. 2006 Volume 9 Number 1.

Abstract

An incisional hernia is the result of failure of the lines of closure of abdominal wall following laparotomy. In search of achieving the goal of radical cure (repair with no recurrence) there has been a rapid evaluation of techniques available. Over the period of times, traditional "Suture based" repair (i.e Mayo, Judd, Keel) have given way to "prosthetic based" repair (i.e Usher, Rives, Stoppa) which are not without complications. To avoid these complications¹ Cardiff (far and near) technique without the use of prosthetic material is an effective alternative.

INTRODUCTION

An incisional hernia is the result of failure of the lines of closure of abdominal wall following laparotomy. In search of achieving the goal of radical cure (repair with no recurrence) there has been a rapid evaluation of techniques available. Over the period of times, traditional "Suture based" repair (i.e Mayo, Judd, Keel) have given way to "prosthetic based" repair (i.e Usher, Rives, Stoppa) which are not without complications. To avoid these complications, Cardiff (far and near) technique without the use of prosthetic material is an effective alternative.

MATERIAL AND METHODS

Sixty prospective patients with incisional hernias (< 4cm defect) were grouped alternatively in study and control groups. All operations were performed by a consultant surgeon. In the study group, incisional hernia was repaired using interrupted sutures of 1/0 polypropylene (prolene) be far and near technique i.e Cardiff repair. If more than two switches were required reinforcement sutures were applied in between. Relaxing incisions were given whenever tension was encountered. In control group the incisional hernia was repaired by placing prolene mesh over the defect and was fixed with prolene 1/0 suture along the margins of defect after closing the peritoneum. Study and control cases were evaluated with respect to duration of operation, duration of hospital stay, postoperative complications like haematoma, wound infection and late complications like recurrence upto 1 yr of follow up. All the findings were tabulated and analysed to draw conclusions using unpaired student t-test.

RESULTS

Mean age in the study group was 43.5 ± 11.65 years whereas in the control group was 43.4 ± 9.18 years ($p > 0.05$). Most common procedure responsible for incisional hernia occurrence was female pelvic organ surgery (55%) followed by emergency laparotomy (30%). The mean total time taken for the surgery in the study group was 46.4 ± 5.77 minutes compared with 52.05 ± 6.78 minutes in control group ($p < 0.01$). 10% patients of study group had seroma formation while this figure increased to 30% in control group. All patients settled with needle aspiration, repeated whenever indicated. Other complication like erythema, cellulitis and wound infection were comparable in both groups (5%). Recurrence was not seen in any patient of either groups on one year follow up. Mean duration of hospital stay in study group was 3.7 days whereas it was 6.8 days in control and was found to be statistically highly significant ($p < 0.001$). Time off work (in weeks) in patients of study group was 2.87 weeks compared to 3.15 weeks in control group. The difference was found to be statically significant ($p < 0.05$).

DISCUSSION

Repair of a symptomatic incisional hernia that is not amenable to simple primary closure is problematic. Analysis of various techniques of incisional hernia repair along multiple outcome variable reveal that mesh based repair offer the best alternative when compared to suture based technique.² Despite excellent results of mesh based repair critics of mesh repair still exist.¹ The main issue is increased risk of infection with a placement of foreign body and cost

factor. Autologous tissue based repair of incisional hernia are associated with less chances of wound infection and gastroentero cutaneous fistula formation.³ This led us to explore the possibility of an alternative repair. Cardiff repair appeared a sound alternative in many parameters specially in Indian context. The observations of present study are quite nearer to the study of Shukla et al.⁴ Post operative complication like seroma formation, haematoma, cellulitis and wound infection have been attributed largely to the extensive dissection and tissue handling during hernia repair. Repair with mesh requires longer operating time and had greater intraoperative blood loss. Both these factors have been reported to be associated with increased wound infection.⁵ Although there are higher recurrence rates for open suture repair than mesh repair in incisional hernia but special techniques like Cardiff repair, reversed rectus sheath repair and sliding door techniques can reduce the recurrence to a much low rate and simultaneously avoids use of foreign body i.e mesh which is not cost effective also.^{3,4,6}

CONCLUSIONS

The present study is an attempt to find an effective alternative technique for incisional hernia. Observations of

present study prove that Cardiff repair is cost effective, less time consuming with rapid return to routine activity compared to meshplasty.

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