ORIGINAL ARTICLE

Infra Umbilical Access Wound Closure Technique Using Tissue Holding Forceps during Laparoscopic Surgery in 120 Consecutive Cases

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ABSTRACT

Aim: How to close fascial sheath following laparoscopic surgery. Different methods and innovations have been devised to tackle this common problem following laparoscopic surgery. Aim of this study is to evaluate the efficacy, safety of this technique and incidence of port site hernia.
Design: Retrospective study on one hundred and twenty patients who underwent laparoscopic surgery.
Setting: Avicenna Medical College & Hospital, and Aadil hospital Defence Lahore.
Method: One hundred and twenty consecutive cases from June 2016-October2017, who underwent Laparoscopic surgery were included in this study. Open access technique was used in all the cases. The wound closure was carried out using back of the tissue holding forceps to lift the rectus sheath using Polypropylene 1. The mean follow up period was 1 year for any wound problems and hernia.
Results: The mean age of the patients was 43.5 years and average time taken for closure was 4 minutes and 30 seconds using Proline 1 on a standard curved needle with a range between 2.30-7.30 minutes. Total of 120 patients were inducted in study, out of which 80 patients were female.
Conclusion: We found this closure technique for umbilical port as very easy, safe and effective.
Keywords: Infra-umbilical incision closure, Port site hernia, Tissue holding forceps, Watson Cheyne dissector.

INTRODUCTION

Once the gall bladder is retrieved, it is normal practice to close the infra-umbilical wound using different methods to prevent hernia and avoid injury to intraabdominal structures etc. But there are few difficulties like lack of ease of closure, extra time taken and incomplete closure of rectus sheath resulting in increased incidence of hernia and other iatrogenic injuries. To minimise the closure related complications different methods have been practised like using purse string sutures, interrupted sutures, use of different curved needles, even no sutures especially for 5mm ports with differing results. Of all these methods, we have studied our technique of facial closure using back of tissue holding forceps for its efficacy, safety and time saving.

METHOD

One hundred and twenty consecutive patients who underwent laparoscopic surgery in our department were included in this study. First port was inserted by open technique in umbilical area. Once umbilical port is removed at completion of procedure and peritoneal cavity deflated, rectus sheath was lifted by back of tissue holding forceps before inserting suture needle to avoid injury to intraperitoneal structures. Standard curved suture needle was used. Interrupted mattress polypropylene 1 sutures were applied while skin and subcutaneous tissues were held apart using Allis forceps or Langenbeck retractors. Infra umbilical wound closure with this technique using back end of a tissue forceps as a guide for the needle exit was carried out in all cases. Tissue holding forceps serves was carried out in all cases. Tissue holding forceps serves ual purpose of avoiding any tissue in between and also lifting and bringing fascial defect close to skin which makes suturing very easy. Evaluation of this technique was done regarding safety, efficiency and time taken to close the sheath.

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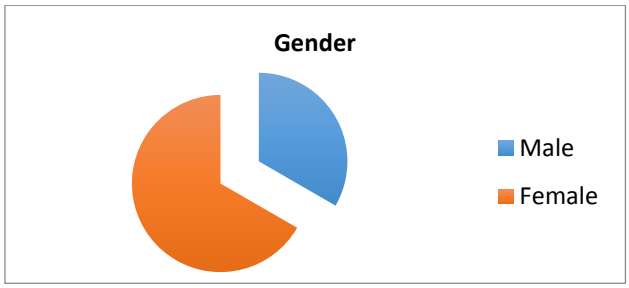
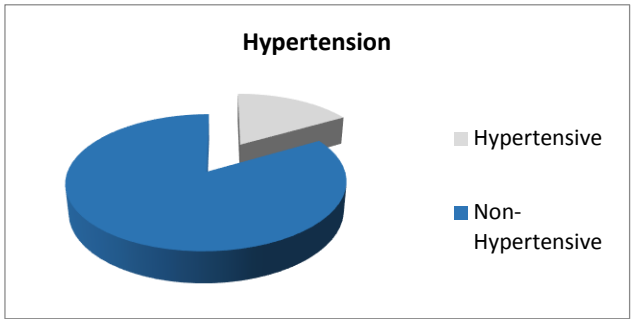
RESULTS

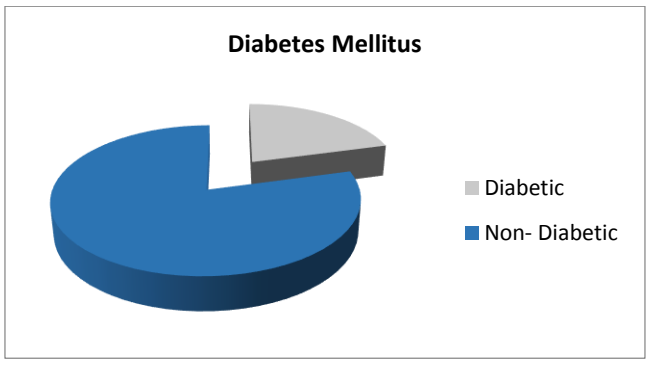
Out of 120 patients, 25 patients had Diabetes Mellitus and 20 patients suffered from hypertension. Eighty patients were female and forty patients were male. Mean age was 43.5 years with a range from 12 years to 68 years. This

wound closure technique was not only found very safe but also quick. There was no incidence of injury to any abdominal viscera. The average time taken for the closure of wound was 4.5 minutes with a time range between two to eight minutes. There were 3 cases of wound site infection which settled satisfactorily with local treatment and antibiotics. Patients were followed up in our outpatient clinic for one year. Main outcome in our study was incidence of umbilical port site hernia during one year follow up and no port site hernia was reported or turned up in our study in a year's follow up.

Variable	Male	Female
Patients	40	80
Age	43.6	43.5
Diabetes Mellitus (n)	13	12
Hypertension (n)	12	8







DISCUSSION

Laparoscopy started initially in gynaecological practice and port site hernia and other trocar site complications were noticed earlier on. An early report in literature mentioned small bowel obstruction immediately following laparoscopic cholecystectomy. Although access related complications are more common and serious but it is not uncommon to have complications related to closure of port or trocar site. Up to 5-9% port site closure related complications have been reported in literature. Commonly reported closure related port site complications are wound infection, wound dehiscence, bleeding, hematoma, protrusion or entrapment of viscera, port site hernia, stitch sinus and port site metastasis in malignant cases. Hiccups in ease of closure especially in obese patients can take a lot of time. Another common including port site hernia and associated morbidity caused by infection and difficulty in closure of wound especially if incision has to be extended to retrieve gall bladder, port sizes more than 10-12mm and obese patients are especially vulnerable for complications if proper closure is not carried out. The complication of port site hernia is more important as it requires further surgery. Every surgeon has his own preference and technique for the closure of wound including curved needles with an eye in the middle, J-shaped needles, purse-string sutures or simple mattress sutures. In our technique of closure the back of tissue holding forceps or Watson Cheyne retractor is used to guide the needle to close the fascial sheath properly and securely. It not only prevents needle causing inadvertent injury to deeper structures but also lifts the rectus sheath bringing it closer to skin and more accessible for suturing. This technique doesn't require any special gadgets or manoeuvres. We use mattress sutures with polypropylene no 1 on standard curved needle to approximate the fascial sheath and found out this technique to be safe, quick, reliable and inexpensive way of port closure without any additional problems.

CONCLUSION

Laparoscopic port closures are not without complications but all the team members involved in this study found this closure technique quick, very safe and effective with no incidence of hernia or intra-abdominal injuries.

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