



RESEARCH ARTICLE

SCARLESS UMBILICAL CAMERA PORT INCISION IN LAPAROSCOPIC CHOLECYSTECTOMY

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ABSTRACT

Background: Cholecystitis is one the most common disease encountered to general surgeons or G I surgeons in Bihar. Laparoscopic cholecystectomy is the standard treatment of choice in cases of acute/chronic cholecystitis, cholelithiasis, empyema, pyocele, gall bladder polyp etc. Cholecystectomy used to be done early in Bihar region because of high risk of carcinomatous transformation. As the time passes scar less surgery is getting more and more acceptance among surgeons and patients both. Advancement in laparoscopic surgery is very fast in recent years. 1st laparoscopic cholecystectomy was performed on September 12, 1985. Then advances to Single incision laparoscopic cholecystectomy (SILC) and Natural orifice trans-luminal endoscopic surgery (NOTES). With conventional multiport laparoscopic cholecystectomy (MPLC) most of the surgeons feel comfortable as compared to SILC. Our study was conducted on various complications of umbilical camera port incision in laparoscopic cholecystectomy, but main concern was cosmetic outcome.

Materials and Methods: This study was conducted on 92 patient underwent laparoscopic cholecystectomy by a single surgeon ranging from age group 14-70 years. Study was conducted between July 2016 to February 2017. All the patients were prior informed about the study and written consent were taken. All patients underwent multiport laparoscopic cholecystectomy and camera port was created through umbilicus (intra-umbilical camera port incision). Patients were followed for 6 months for complications in camera port like, port site hernia, port site infection scar and intra-operative port site bleed.

Results: Out of 92 patients studied male were 21.7% and rest were females. Youngest patient was a 14 year female and oldest one was also a female of 70 years. Most common age group affected were in between 20-40 years, 65.2% patients lies in this group. All patients underwent conventional four port laparoscopic cholecystectomy with umbilical camera port incision. Some of the complications of umbilical port were studied, finding about visible scar, port site incisional hernia and intra-operative port site bleed were good. Visible scar and hernia were in 0% patient, intra-operative bleed were seen in 3.3% patients. Port site infections were observed in 5.4% patients.

Conclusion: In umbilical port incision scar were not visible, neither port site hernia is seen. Port site infection is not too much (5.4%) and intra-operative bleed is also very less (3.3%), in near future umbilical port is going to replace peri-umbilical port incision mainly because of its cosmetic outcome.

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INTRODUCTION

For last few decades minimal access surgery is fascinating surgeons and patients both. With the technical advancement and more instrumentation in surgery, open surgery is gradually replaced by laparoscopic/endoscopic surgery. Every surgical technique has its own advantages and disadvantages (Katedry i Kliniki et al., 2003). Some of the advantages are better cosmetic outcome, lesser intra and post operative morbidity, decreased duration of hospital stay and post-operative days to

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resume routine day to day activity, low wound related complications etc. all these advantages leads to better patient acceptance. It also has some disadvantages like technical expertise needed, difficult to control bleeding as it obscure the field of vision, difficult to operate malignant tumors etc. laparoscopic cholecystectomy spreading their foot to rural areas also. Cholecystectomy is bread and butter for general surgeon in Bihar both in rural and urban areas. Patients concern in laparoscopic cholecystectomy is mainly for cosmetic purposes, hence in past NOTES (Kurt E Roberts, 2016) (natural orifice trans-luminal endoscopic surgery) were tried but it didn't get much popularity. In MPLC (Pankaj Garg et al., 2012; Ma, Jun et al., 2011) there are various ways of creating

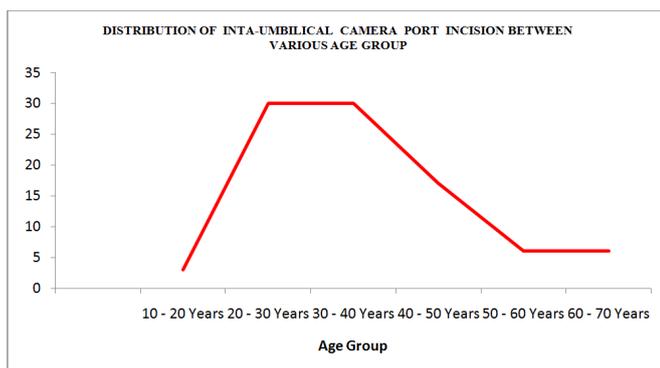
camera port, like supra and infra peri-umbilical transverse port incision, umbilical longitudinal port incisions. This study was mainly conducted in the patients underwent laparoscopic cholecystectomy through umbilical longitudinal camera port incision, intra and post operative complications of this camera port.

MATERIALS AND METHODS

This study was conducted in a Department of General Surgery Patna Medical College Patna, Bihar, India, between July 2016 to February 2017. It includes 92 patients of both genders who underwent 10 mm umbilical camera port for MPLC, age ranging between 10-70 years. They were informed regarding study and written consent was taken. Information such as name, age, gender etc was recorded. Detail history about gall bladder disease was taken. Patients were divided into 6 groups with the age difference of 10 years from 10-20 to 60-70 years. Youngest patient was of 14 years female with gall bladder polyp and oldest one was of 70 years female presented with chronic cholelithiasis. Patients with difficult umbilicus (umbilicus which can't be washed and painted properly with povidone-iodine) were excluded from umbilical port incision group. Intra-umbilical port was created in all patients came for multiport laparoscopic cholecystectomy except in difficult umbilicus. Patients were followed in intra-operative period for port site bleed and twice for 6 month post-operatively. 1st within 20-25th post operative days and 2nd within 6 months of post operatively through direct visit or by telephonic conversations. They were followed for umbilical port site infection (immediate and delayed), port site incisional hernia and port site visible scar.

RESULTS

Study on 92 patients for 10mm umbilical port site complications and outcomes, clearly shows that there are very good cosmetic outcome in this type of incision.



Graph 1: Age wise Distribution of Patients Underwent Umbilical Camera Port Incision

Umbilical scar was not visible in any one of the patient. Port site incisional hernia had not been reported in single case. Minimal intra-operative bleed was reported in 3.3% cases, which had been controlled easily. Port site infection was reported in 5.4% patients, out of these 3.3% were in the age group 30-40 and 1.1% were in 20-30 and 60-70 age groups. No surgical interventions or drainage procedure need in any patient, all these infections responded to oral antibiotics. Umbilical camera port incision will be the better choice for

creating camera port in multiport laparoscopic cholecystectomy.

Table 1: Port site infection in camera port

| | | Port site infection in various age group | | | |
|-------|---------------|------------------------------------------|-------|-------|--------|
| | | Infections | | Total | |
| | | N | Y | | |
| A | 10 - 20 Years | Count | 3 | 0 | 3 |
| G | | % of Total | 3.3% | 0.0% | 3.3% |
| E | 20 - 30 Years | Count | 29 | 1 | 30 |
| | | % of Total | 31.5% | 1.1% | 32.6% |
| | 30 - 40 Years | Count | 27 | 3 | 30 |
| | | % of Total | 29.3% | 3.3% | 32.6% |
| | 40 - 50 Years | Count | 17 | 0 | 17 |
| | | % of Total | 18.5% | 0.0% | 18.5% |
| | 50 - 60 Years | Count | 6 | 0 | 6 |
| | | % of Total | 6.5% | 0.0% | 6.5% |
| | 60 - 70 Years | Count | 5 | 1 | 6 |
| | | % of Total | 5.4% | 1.1% | 6.5% |
| Total | | Count | 87 | 5 | 92 |
| | | % of Total | 94.6% | 5.4% | 100.0% |



Fig. 1: Intra-umbilical camera port incision



Fig. 2: Camera port with vicryl to close rectus

DISCUSSION

Gall bladder disease is one of the most common diseases encountered to General surgeons or G I surgeons. It is considered as bread and butter of general surgeons in Bihar. There is gradual decline in acceptance of even a minimal scar following surgery. In this regard camera port in multiport laparoscopic cholecystectomy was created through umbilical

longitudinal incision. Incision is hardly visible, then how can scar be visible in umbilicus. Hence acceptance to this technique drastically increases among patients. Umbilicus is the site of bacterial colonization, meticulous washing and painting with povidone-iodine is needed. Povidone –iodine is left in umbilicus for 4 to 5 minutes and then surgical spirit for 1/2 -1 minute. This drastically reduces the rate of post-operative port site infections (Nupur Gupte *et al.*, 2017; Prakash K Sasmal *et al.*, 2015) to 5.5%. Infections in the age 30-40 years group was maximum i.e. 3.3% and 1.1% in 20-30 and 60-70 age group each. Infection mostly (3.3%) occur in acute cholecystitis patient and in chronic cholecystitis only 2.2% infection occur. Port site incisional hernia (Mohan Venkatesh *et al.*, 2015) reduces to 0% because rectus of the incision sites was closed (Florin Botea *et al.*, 2011) by vicryl. There was no visible scar (Caroline Mary Smith and Thomas Tsang, 2015) in any studied patients, because the scar was hidden into the girth of umbilicus. As the umbilicus doesn't contain any muscle hence chances of intra-operative bleed (Daniel J Deziel, 2017) also reduces, only 3.3% bleed minimally, bleeding only occur through skin. Various complication rates in 10 mm umbilical port incision and peri-umbilical port incision was same but cosmetic outcome is far better for umbilical camera port incision. Umbilical port incision will be the better choice for creating camera port.

Conclusion

There was significantly good cosmetic outcome of umbilical port incision because it leaves no visible scar. Other complications are not significant than in peri-umbilical port incision.

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