



Research Article

A NEW METHOD OF NOT HOLDING SKIN OF THE UMBILICUS WITH ALLIS FORCEPS OR TOWEL CLIP AND MAKING AN INCISION WELL BELOW THE UMBILICUS WHILE DOING OPEN LAPAROSCOPY

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ABSTRACT

Objective: To describe the technique of not holding skin of the umbilicus with Allis forceps or towel clip and making an incision well below the umbilicus while doing open laparoscopy and its advantages.

Methods: From 13th October 2015 to 18th December 2019 for a period of 4 years and 1 month, open laparoscopy was done by a new technique of not holding skin of the umbilicus with Allis forceps or towel clip and making an incision well below the umbilicus while doing laparoscopic operations like laparoscopic appendectomy and laparoscopic cholecystectomy.

Results: From 13th October 2015 to 18th December 2019 for a period of 4 years and 1 month, while following the new technique of open laparoscopy of not holding skin of the umbilicus with Allis forceps or towel clip and making an incision well below the umbilicus while doing laparoscopic operations, no patient had umbilical skin necrosis or umbilical wound infection.

Conclusion: Hence the new technique of not holding skin of the umbilicus with Allis forceps or towel clip and making an incision well below the umbilicus while doing open laparoscopy is extremely useful since it avoids the complications of umbilical skin necrosis and umbilical wound infection.

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INTRODUCTION

The technique of not holding skin of the umbilicus with traumatic instruments like Allis forceps or towel clip and making an incision well below the umbilicus while doing open laparoscopy is extremely useful since it avoids the complications of umbilical skin necrosis and umbilical wound infection.

MATERIALS AND METHODS

This study was conducted in the department of General surgery, Indira Gandhi Medical College and Research Institute, Puducherry. From 13th October 2015 to 18th December 2019 for a period of 4 years and 1 month, open laparoscopy was done by a new technique of not holding skin of the umbilicus with Allis forceps or towel clip and making an incision well below the umbilicus while doing laparoscopic operations like laparoscopic appendectomy and laparoscopic cholecystectomy.

RESULTS

From 13th October 2015 to 18th December 2019 for a period of 4 years and 1 month, while following the new technique of open laparoscopy of not holding skin of the umbilicus with Allis forceps or towel clip and making an incision well below

the umbilicus while doing 102 laparoscopic operations which included 42 laparoscopic appendectomies, 28 laparoscopic cholecystectomies, 18 laparoscopic hernia repair(TAPP) and 14 diagnostic laparoscopic procedures no patient had umbilical skin necrosis or umbilical wound infection.

DISCUSSION

Technique of our open laparoscopy

1. Transverse infra-umbilical incision is made well below the umbilicus (Fig 1).
2. Skin of the umbilicus is not held with traumatic instruments like Allis forceps or towel clip (Fig 1).
3. Skin of the upper and lower skin flaps is not held with traumatic instruments like Allis forceps (Fig 2).
4. Instead of using Allis forceps, Langenbeck's retractors are used to retract upper and lower skin flaps to visualise the umbilical stalk (Fig 2,3).
5. Skin of the upper and lower skin flaps is retracted only with retractors and is not held with Allis forceps and Allis forceps is used to only hold the umbilical stalk (Fig 2).
6. Umbilical stalk is given strong upward and backward traction with Allis forceps to expose the underlying linea alba where incision is made(Fig 3).

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7. Incision of 1cm is made into the linea alba starting from the junction of the umbilical stalk with the linea alba (Fig 4).
8. The incised edges of the linea alba are held with straight artery forceps and retracted to expose the underlying peritoneum (Fig 5).
9. Since the skin of the umbilicus and skin around the umbilicus is never injured in our technique with traumatic instruments like Allis forceps or towel clip, none of the patients who underwent open laparoscopy by our technique had umbilical skin necrosis or umbilical wound infection.

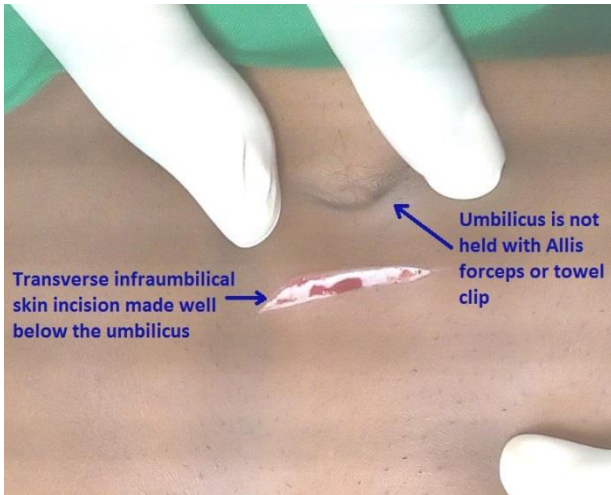


Fig 1 Transverse infra-umbilical incision is made well below the umbilicus and the skin of the umbilicus is not held with Allis forceps or towel clip.

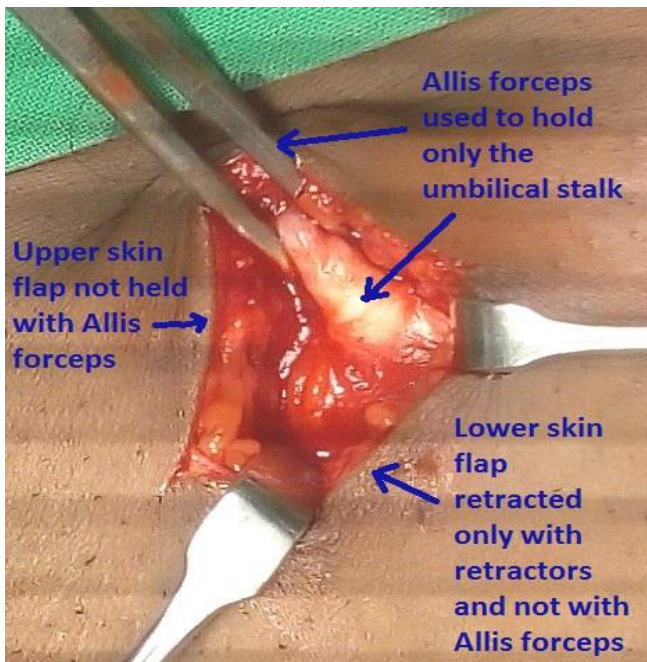


Fig 2 Skin of the upper and lower skin flaps is retracted only with retractors and is not held with Allis forceps and Allis forceps is used to only hold the umbilical stalk.

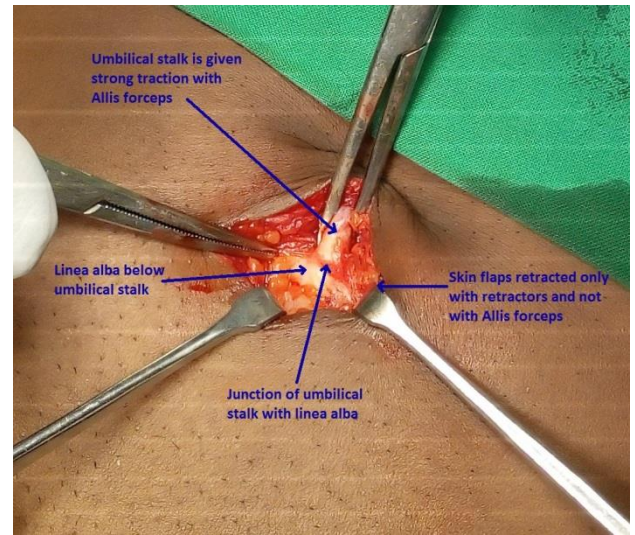


Fig 3 Umbilical stalk is given strong traction with Allis forceps to expose junction of the umbilical stalk with the linea alba. Skin flaps are retracted only with retractors and not held with Allis forceps.

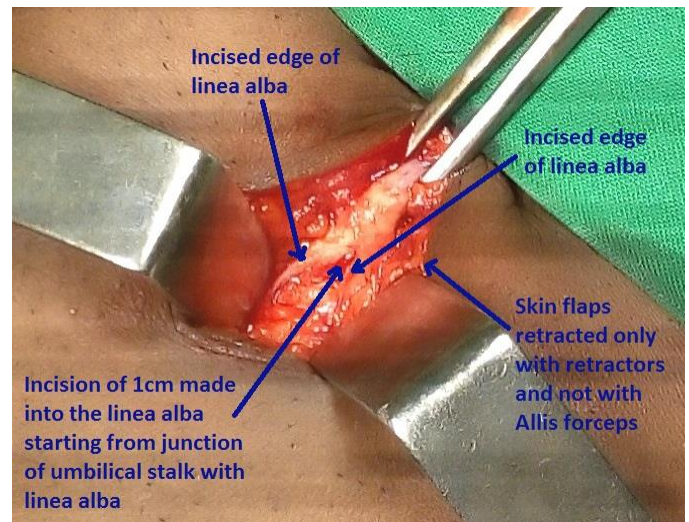


Fig 4 Incision of 1cm is made into the linea alba starting from the junction of the umbilical stalk with the linea alba. Skin flaps are retracted only with retractors and not held with Allis forceps.

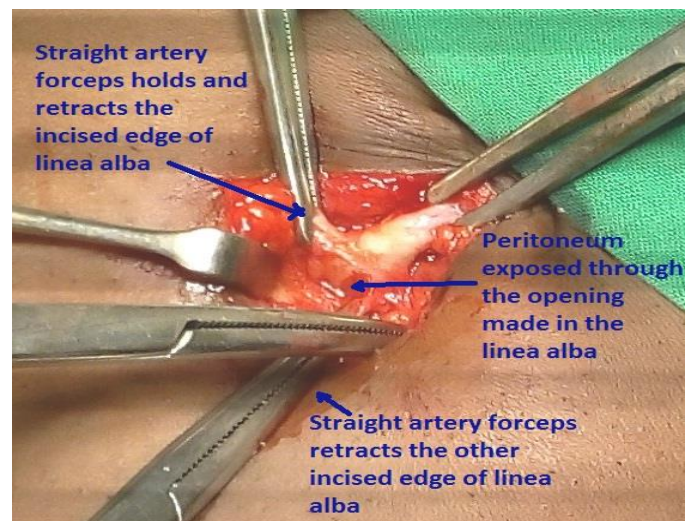


Fig 5 The incised edges of the linea alba are held with straight artery forceps and retracted to expose the underlying peritoneum.

Discussion of How Our Technique Differ from Many Other Techniques of Open Laparoscopy is

1. In the study of open laparoscopy conducted by Sangrasi AK, Memon AI, Memon MM, Abbasi MR, Laghari AA, Qureshi JN (1), umbilicus was held with towel clip. In this study, port-site infection occurred in 6 (0.48%) cases and port-site hematoma in 4 (0.32%) cases. Postoperative port-site hernia was recorded in 2 (0.16%) cases(1).
2. In another study of open laparoscopy conducted by Yogendra D Shah in 50 patients(2), umbilicus is grasped with towel clip. There were 4 cases (8%) of port site infection. Wound infection was superficial and involved only skin and subcutaneous tissue. They resolved by antibiotics and anti inflammatory agent. It didn't require any surgical intervention. There was one case of port site hernia(2%)(2).
3. In the study of open laparoscopy conducted by Bathla V *et al* (3) in 50 patients in December 2014, umbilical cicatrix is grasped with towel clip. In this study, 5 out of 50 patients had port site wound infection(3).
4. In the study conducted by Sangrasi AK, Shaikh AR, Muneer A in 223 patients subjected to open technique, port site wound infection was seen in 4 patients (1.79 %) and port-site hematoma was seen in 1 patient (0.45 %)(4).
5. In the study of open laparoscopy conducted by Lal P, Vindal A, Sharma R, Chander J, Ramteke VK(5) in January 2012, supraumbilical route was used in 348 patients and lateral entry in 90 patients. Port-site hernias were seen in 25 cases (0.4%) and wound infections in 56 cases (0.9%) (5).
6. In the study of open laparoscopy conducted by Bathla V *et al* (3) in January 2016, umbilical cicatrix is grasped with towel clip. In this study, 4 out of 100 patients had port site wound infection. Port site hematoma was seen in 1 out of 100 patients. (6).
7. In another study of open laparoscopy conducted by Lal P, Singh L, Agarwal PN, Kant R in 755 patients, a small transverse or semicircular incision was made in the inferior umbilical fold. Fortynine out of 755 patients (6.49%) had minor umbilical sepsis, 22 patients out of 755 patients (2.91%) had periumbilical hematoma, but none had umbilical hernia during 3 months of follow-up after surgery (7).
In this study the wound infection was higher than that of the international figure of 0.6%. The reasons attributed to this could be either an improper sterilization technique or inability to completely clean the umbilicus before the surgery(7).
8. In the study of open laparoscopy conducted by Pring CM, a curvilinear supra-umbilical skin incision was made(8). During laparoscopy it was apparent that retroperitoneal haematoma was forming.Hence midline laparotomy was done. Exposure of the anterior abdominal aorta demonstrated some bruising of the anterior aortic wall but no laceration or puncture of the aorta(8).
9. In another study of open laparoscopy conducted by Long JB, Giles DL, Cornella JL *et al*,the umbilicus is held and everted with 2 Allis forceps. A vertical skin

incision, 10-mm to 15-mm long, is created at the deepest portion of the umbilicus (9).

51 patients (2.5 %) had umbilical infection and 1 patient had periumbilical hematoma. (9). A significant association was noted between umbilical infection and previous abdominal surgery.

10. In the study of open laparoscopy conducted by Sadhu S, Jahangir TA, Sarkar S, Dubey SK, Roy MK the umbilical cicatrix is grasped at its pit by a towel clip (10).
11. In another study of open laparoscopy conducted by Mulayim B, the upper skin flap is retracted with Allis forceps(11).
12. In another study conducted by Gemici K *et al*, a 15 mm infraumbilical transverse incision is made (12). 7 patients (0.92%) developed wound infection at the port site. Five of them were treated with antibiotics; the other two were treated with drainage and antibiotics(12).

But in our technique skin of the umbilicus is never held with traumatic instruments like Allis forceps or towel clip and skin of the upper and lower skin flaps is also not held with traumatic instruments like Allis forceps.

CONCLUSION

1. Since the skin of the umbilicus and skin around the umbilicus is never injured in our technique with traumatic instruments like Allis forceps or towel clip, none of the patients who underwent open laparoscopy by our technique had umbilical skin necrosis or umbilical wound infection.
2. Hence the new technique of not holding skin of the umbilicus with traumatic instruments like Allis forceps or towel clip and making an incision well below the umbilicus while doing open laparoscopy is extremely useful since it avoids the complications of umbilical skin necrosis and umbilical wound infection.

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