

Preference of Small or Large Surgical Incision for Laparotomy in a Rural Teaching Institution in North India

Krishan Lal Garg¹, Manju Bala², Aneet³, M.L. Khatri,⁴ Madhu Tiwari,⁵
Pawan Tiwari⁶

¹Professor And Head Anaesthesia, ²Assistant Professor Anaesthesia, ³Senior Resident Anaesthesia, ⁴Associate Professor Anaesthesia, ⁵Associate Professor Anaesthesia, ⁶Associate Professor Surgery.
Faculty Of Medicine And Health Sciences ,SGT University, Budhera ,Gurgaon, Haryana (India)

Abstract: Thirty participants of SGT University Budhera, Gurgaon (Haryana) India including anesthesiologists, surgeons and paramedical staff were surveyed by giving a structured questionnaire regarding their preference for small or large surgical incision for laparotomy and for finding reasons for their preference for a particular incision. Most participants were in favor of small surgical incision. The most common reason for their preference was better cosmetic results.

Keywords: Large Incision, Small Incision, Preference.

I. Introduction

Several types of abdominal incisions are used for gynecological and surgical procedures including midline, paramedian and transverse. The midline incision is the easiest and most versatile vertical incision for laparotomy in adult surgical patients. This incision allows quick entry into the abdominal cavity with little blood loss and it can be easily extended as per requirement. Recent studies have found that little difference exist in dehiscence rates between properly closed midline incision and transverse incision. For laparotomy some surgeons prefer small midline incision while some prefer large midline incision. Both types of incision have their own advantages and disadvantages. Aim of the survey was to know about current preference for a specific incision type (small or large) among surgeons, anesthesiologists and OT staff.

II. Material And Method

This prospective cross sectional survey was conducted among surgeons, anesthesiologist and operation theatre staff of SGT medical college, Budhera (Gurgaon) Haryana. Although participants had prior knowledge about the procedure but for standardization participants were asked to read an information sheet explaining the potential advantages and disadvantages associated with small and large incision. All subjects were given same sheet containing reasons for preference for both type of incision. They were asked to tick their preferred incision and give reasons for their preference. To have an unbiased study, questionnaire was prepared by a separate anesthesiologist and sheet was distributed and survey conducted by different anesthesiologist.

III. Results

Out of thirty participants enrolled for study 18(60%) participant preferred small incision while 12(40%) participants chose large incision. (Table A)

% of subjects preferring a specific incision (total participants-30)

Table A

Incision type	N	%
Small incision	18	60%
Large incision	12	40%

The most common reason for preference for small incision was better postoperative cosmetic results. Other reasons were less blood loss, less postoperative pain and less chances of postoperative incisional hernia.(Table B)

Reasons for preference for small incision

Table B

		N	%
1	Tissue Trauma is less	14	77.78%
2	Post op. pain is less	16	88.89
3	Less blood loss	15	83.33
4	Chances of incisional hernia are less	15	83.33

5	Cosmetically scar looks better	18	100
6	Any other reasons	4	22.22

Better exploration and less chances of missing any finding were the common reasons for preference for large incision. Other reasons were associated operating surgeon's less struggle. (Table C)

Reasons for preference for large incision

Table C

		n	%
1	Exploration is better	10	83.33%
2	Surgeon has not to struggle unnecessarily as in small incision	9	75
3	Chances of missing some finding are less	10	83.33
4	Chances of reexploration are less	9	75
5	Any other reason	4	33.33

IV. Discussion

The success of a surgical procedure performed through an abdominal incision depends on careful selection of incision type and size. The surgeon needs to consider multiple factors before making an abdominal incision. These factors include the disease process, build of patient, exposure required, previous scars, cosmesis and the urgency for exploration.

In our survey maximum no of participants preferred small incision over large incision for laparotomy. Small incision reduces the risk of pain and bleeding where as in large incision patients usually require long term pain relieving medications . This in turn limits quick recovery and resumption of normal daily activities. The smaller incision also leads to the formation of a significantly smaller scar which is cosmetically better than large incision. Further more in cases where surgical wound is larger the scar tissue that forms is more likely to become infected and more vulnerable to hernia formation especially in obese patient. Exposure of internal organs to external contaminants is significantly reduced in smaller incision cases therefore reducing the of post operative infection. Due to these reasons, now a days there is growing trends towards use of smaller incision for surgical procedures. This inclination towards smaller incision caused invention of laparoscopic and minimally invasive procedures. This minimally invasive surgery became the most common method of repairing abdominal aortic aneurysms in 2003 in the United States.^[1]The front-runners of minimally invasive procedures were interventional radiologists. By the use of imaging techniques, interventional instruments could be directed throughout the body by the radiologists by way of catheters instead of large incisions needed in traditional surgery.

A better postoperative cosmetic result was the most common reason for preference of small surgical incision in our survey. Less blood loss, postoperative pain and less chances of incisional hernia were the other reasons for their preference.

Despite these advantages of smaller incision there are few situations where larger incision is more beneficial like in cases of emergency laparotomy where quick entry into the abdominal cavity is needed. Also in cases of extensive malignancy, larger incision allows thorough exploration of abdominal cavity and extraction of larger sized viscera, tissues and mass from the abdominal cavity. Also smaller incision requires more patience, technical skill and experience as compared to larger one. Except for these few scenarios, most surgeons prefer smaller incision over larger one as found in our survey.

Our study has few limiting aspects also, such as the data collection being obtained from surgeons, anesthesiologist and OT staff only. There was no involvement of patients. Also data was collected from limited number of participants. So in future, this type of study should be carried out using larger number of participants including post operative patients.

V. Conclusion

Key factors that influence the choice of surgical incision include safety, side effects, expertise facility resources, medical indication and patient preference. Now a days patient centric treatment is a common practice. Surgeon's preference is an indirect reflection of patient's preference. Patients generally prefer the technique having less pain, better cosmetic results and speedy recovery. Small surgical incision covers most of these aspects hence it is being preferred commonly by surgeons and paramedical staff.

References

- [1]. Guillou, P.J., Hall, T.J., Donaldson, D.R., Broughton, A.C., Brennan, T.G. (1980): Vertical abdominal incisions - a choice? British Journal of Surgery, 67(6): 395-9.
- [2]. Clarke, J.M. (1989): Case for midline incisions. Lancet, Mar 18; 1 (8638): 622.
- [3]. Stone HH, Hoefling SJ, Strom PR, et al. Abdominal incisions: transverse vs vertical placement and continuous vs interrupted closure. South Med J. 1983 Sep. 76(9):1106-8.
- [4]. Makela JT, Kiviniemi H, Juvonen T, Laitinen S. Factors influencing wound dehiscence after midline laparotomy. Am J Surg. 1995 Oct. 170(4):387-90.
- [5]. Weiland DE, Bay RC, Del Sordi S. Choosing the best abdominal closure by meta-analysis. Am JSurg. 1998 Dec. 176(6):666-70.
- [6]. Nyhus, L.M. & Baker, R.J. : Mastery of Surgery In : Abdominal Wall Incisions. 2nd Edn LittleBrown & Co. Boston. : 444-452 (1992).
- [7]. Soper NJ, Barteau JA, Clayman RV, Ashley SW, Dunnegan DL. Comparison of early postoperative results for laproscopic versus standard open cholecystectomy. Surg Gynecol Obstet 1992;174:114-8.
- [8]. Sethi RK, Henry AJ, Hevelone ND, Lipsitz SR, Belkin M, Nguyen LL (September 2013). "Impact of hospital market competition on endovascular aneurysm repair adoption and outcomes.". J. Vasc. Surg. **58** (3): 596–606.