

Study of Usefulness of Various Incisions in Whipple's Pancreaticoduodenectomy

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Abstract: Whipple procedure is done for various pancreatic neoplasms, periampullary tumors, chronic pancreatitis, etc. Even though mortality had come down over the years, morbidity remains high for Whipple's procedure. We, in our study, compared various incisions and their effect on postoperative pain and pulmonary complications. This is a prospective and retrospective study of twenty patients at Government General Hospital, Kurnool, Andhra Pradesh from June 2017 to July 2019. Ten patients were operated by roof-top incision, five by midline incision and another five by right subcostal incision. Seven patients with roof-top incision had moderate to severe pain. All patients with right subcostal incision had mild pain. Among five patients, who had undergone surgery by midline incision, two developed moderate pain, and others had mild pain. Respiratory complications were seen in four patients with rooftop incision, two patients with midline incision and one patient with subcostal incision. Our results showed less postoperative pain and pulmonary complications in right subcostal incision group.

Keywords: Whipple's pancreaticoduodenectomy, Rooftop incision, Midline incision, Right subcostal incision

1. Introduction

Whipples procedure is done for various periampullary malignancies and pancreatic head masses. Although Laproscopic pancreaticoduodenectomy is being performed in various hospitals, it requires high level of technical expertise. Open pancreaticoduodenectomy is the standard of care in many institutions at present in India. Various factors contribute to the morbidity of Whipples procedure like anastomotic leak, pancreatic fistula, gastroparesis, pulmonary complications, postoperative pain, etc. Various incisions were described like rooftop or chevrons incision, midline incision, right subcostal incision. Rooftop incision is the most common incision given as it provides good exposure. Midline and right subcostal incisions are given in selected patients, and sufficient exposure can be achieved. Rooftop incision is associated with more postoperative pain and pulmonary complications. Incisional hernia is common with midline incisions than transverse incisions. However, incisional hernia associated with transverse incisions present as complicated hernias. These hernias are difficult to repair and has more recurrence.

Objective: To study different incisions for Whipple's pancreaticoduodenectomy and their related morbidity.

2. Methods

This study is both prospective and retrospective. A total number of 20 Whipple's procedures were done for different etiologies from June 2017 to June 2019 in Government General Hospital, Kurnool, Andhra Pradesh were included in this study.

Three different incisions were tried like rooftop or chevron incision, right subcostal incision, and midline incision. Results were compared in terms of postoperative pain and pulmonary complications. Postoperative pain is defined in terms of mild, moderate, and severe, according to the numeric rating scale (NRS-11) (1). Pulmonary complications like atelectasis, pneumonia, pleural effusions, and ARDS were taken into consideration.

3. Results

Rooftop incision was given in 10 patients, midline incision in 5 patients and right subcostal incision in 5 patients. Out of ten, three patients with rooftop incision experienced mild pain, six patients experienced moderate pain, and one patient experienced severe pain. In 5 patients with midline incision, three patients experienced mild pain, and the other two patients experienced moderate pain. Whereas all five patients with right subcostal incision experienced only mild pain. 3 patients with Rooftop, two patients with Midline, and one patient with Right subcostal incision had pulmonary complications. One patient died in the rooftop incision group because of pulmonary complications.

4. Discussion

Whipple's pancreaticoduodenectomy is associated with high morbidity, even in high volume centers. Several attempts with different modifications were made to decrease the incision related morbidity of this procedure. The role of incisions in decreasing the morbidity is still controversial (2). In this study, different incisions were tried to open Whipple's pancreaticoduodenectomy like rooftop or chevron incision, midline incision, right subcostal, or Kocher's incision. In obese individuals, rooftop incision is necessary for sufficient exposure. In our study in thin individuals with narrow subcostal angle, midline incision was preferred whereas in thin individuals with wide subcostal angle right subcostal incision was preferred. Incisional hernia is less common with transverse abdominal incision than with midline incision. However, recurrence is more in incisional hernias of transverse incision compared with midline incision.

5. Conclusion

In the present study, different incisions for pancreaticoduodenectomy were compared. We conclude that rooftop incision is associated with high morbidity in terms of postoperative pain and the incidence of pulmonary complications. Right subcostal incision is associated with lesser postoperative pain. There is no significant difference

in the incidence of pulmonary complications between right subcostal incision group and midline incision group. However, larger studies are required to clearly define the advantages and disadvantages to suggest incisions tailor-made to particular patient.

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