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# ABDOMINAL WALL INCISION WITH ELECTROSURGERY VERSUS COLD KNIFE

General Surgery

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## ABSTRACT

**BACKGROUND:** Abdominal incision with cold knife or cautery are commonly used to access the abdominal cavity. Conventionally, cold knife is used routinely. Although over the years; with the easy availability, minimal bleeding and reduced risk of superficial infections, electro surgery is gaining popularity.

**AIM**: To compare the use of electro surgery and cold knife in abdominal wall incision to evaluate blood loss and incision time.

**MATERIAL AND METHOD:** This is an observational study, done in surgical department at Dhiraj general Hospital during period may 2019 to may 2020. Alternate patients were selected by convenient sampling method taken for cold knife and electrocautery. All patients were observed for incision time and blood loss in both groups.

**RESULT:** There was no statistical significant diffrence found in abdominal wall incision time by cold knife or electrocautery (p value-0.052). Whereas blood loss during incision was less in incision by electrocautery compared to cold knife which is statistically highly significant (p value <0.001).

## KEYWORDS

COLD KNIFE, ELECTRO CAUTERY.

## INTRODUCTION:

The electrocautery has been used as a alternate method to scalpel in abdominal wall incision since beginning of 20th century.[1] Recent advances and studies have shown that electro surgery can be used for abdominal wall incision without any postoperative complications like wound infection, scarring and less post-operative pain.[2,3] This study is undertaken to compare incision time and blood loss in abdominal wall incision between cold knife and electrocautery.

## MATERIALS AND METHODS:

This is an observational study, done in surgical department at Dhiraj general Hospital during period may 2019 to may 2020.

### Sample Size:

Patient were selected by convenient sampling method as per selection criteria. Total 200 patients were chosen alternatively in each group as follows :

Group 1 : Abdominal wall incision by cold knife.
Group 2 : Abdominal wall incision by electrocautery.

### Selection Criteria :

### Inclusion Criteria:

All patients fit for elective abdominal surgery for benign disease attending Surgery OPD at Dhiraj Hospital.

### Exclusion Criteria:

Patient with anemia, diabetes mellitus, concurrent anticoagulant or corticosteroid therapy and history of previous laparotomy.

### Statistical Analysis:

The data collected were tabulated using Microsoft Excel worksheet and the computer based analysis was performed using the SPSS version 21 (IBN corp., Chicago, IL,USA). Chi-square test was applied for statistical analysis of qualitative data. In some tables , when cell value was <5, YATES corrections was applied. P value <0.05 – statically significant. Statistical analysis was performed by using Analytical tool pack of Microsoft excel – 2007 and online on www.quantpsy.org The continuous variables were summarized as mean and standard deviation. The statistical test used for continuous variable was independent t-test. The level of significance was set at p < 0.05 and 95% Confidence Interval.

## RESULTS

Among the 200 patients included in the study, 100 in electrocautery group and 100 in scalpel group who underwent elective laparotomy. There was no significant difference in age between the two Groups.

The mean incision time of cold knife was 108.6 ± 4.91 seconds and electrocautery was 106.6 ± 5.20 seconds. there was no statistical significant difference in incision time ( p value - 0.052).

The Mean blood loss during abdominal wall incision was 78 ± 4.43 in cold knife and 48.3 ± 5.26 ml in electrocautery. there was statistically significant difference in mean blood loss during abdominal wall incision.

## DISCUSSION

Demographic variable were comparable to other studies and there were no significant difference in age between two groups.

| PARAMETERS | Kerns et al.[4] | | | Prakash et al.[5] | | | Present study | | |
|---|---|---|---|---|---|---|---|---|---|
| | Electro cautery | Cold knife | P value | Electro cautery | Cold knife | P value | Electro cautery | Cold knife | P value |
| Mean incision time of abdominal wall incision (seconds) | 509 ± 25 | 469 ± 21 | 0.36 | 351.79 ± 126.63 | 356.20 ± 112.29 | 0.87 | 106.6 ± 5.20 | 108.6 ± 4.91 | 0.0520 |
| Mean blood loss during abdominal wall incision (ml) | 915 ± 88 | 927± 110 | <0.001 | 6.46 ± 3.94 | 23.40 ± 15.28 | <0.001 | 48.3 ± 5.26 | 78 ± 4.43 | <0.001 |

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