Research Article
AMERICAN JOURNAL OF PHARMACY AND HEALTH RESEARCH
www.ajphr.com
2017, Volume 5, Issue 11
ISSN: 2321–3647(online)

A Prospective Randomized Study of Diathermy versus Scalpel Skin Incision.

Anju Nagar[1], Mahesh kumar bagriya[2], RS Meena[3]
1. Senior Professor and head of department., (Department of Surgery, Govt. Medical College, Kota, Rajasthan, India.) 324001

ABSTRACT

Diathermy is widely used for underlying tissue dissection, cutting, and hemostasis even though a fear of excessive scarring and poor wound healing have curtailed its widespread use for skin incision. Only few surgeons employ diathermy in making a skin incision with fear of producing deep burns and resultant scarring.

Keywords: Diathermy, incision, scalpel

*Corresponding Author Email: anjunagar75@gmail.com
Received 20 September 2017, Accepted 09 October 2017

Please cite this article as: Nagar A *et al*., A Prospective Randomized Study of Diathermy versus Scalpel Skin Incision . American Journal of Pharmacy & Health Research 2017.

INTRODUCTION

Traditionally, surgical incisions are made with surgical blade. Electrosurgical unit were introduced to facilitate hemostasis and/or the cutting of tissue during surgical procedure. This is due to the observation that use of electrocautery is associated with less blood loss, decreased incision time and similar wound complication rates. This is achieved by passing normal electrical current via the diathermy machine and converting it into a high frequency alternating current (HFAC). This HFAC produces heat within body tissues to coagulate bleeding vessels and cut through tissue. There are 2 different types of electrosurgery; Monopolar and Bipolar. Monopolar electrocautery is the emittance of the HFAC from the diathermy via an active electrode through the patient's body tissues and then returned back to the diathermy machine via a dispersive electrode (patient return pad). Bipolar electrocautery passes the current between two tips of forceps like tool. It has the advantage of not disturbing the neighbouring tissue.

Aims and Objectives

This prospective study was done to compare the outcome of diathermy incisions versus scalpel incisions in general surgery with regard to blood loss, incision time, wound assessment and scar assessment.

MATERIALS AND METHOD

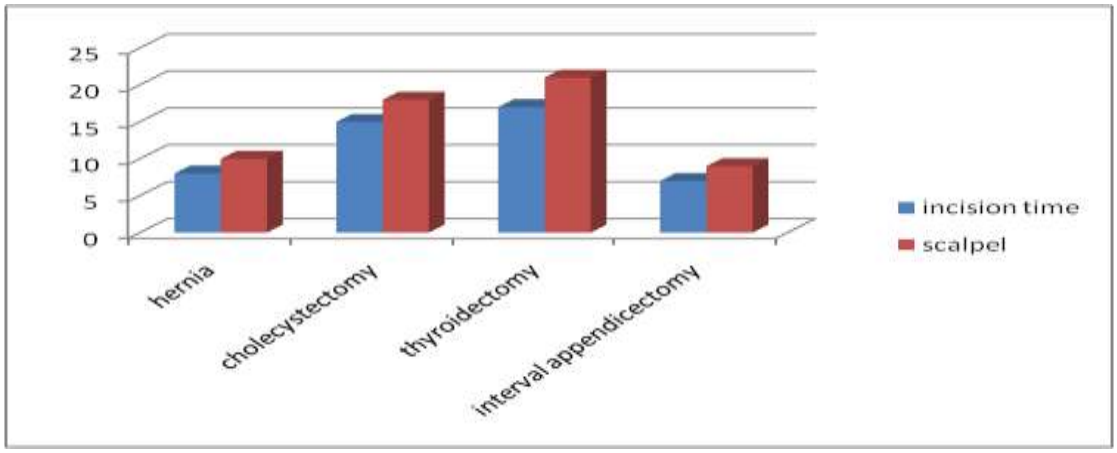
This study was conducted at Department of General Surgery, GMC Kota. A total of 100 patients who underwent diathermy incision (group A: 50 patients) and scalpel incision (group B: 50 patients) were analyzed. Variables analyzed were blood loss, incision time, wound assessment and scar assessment were analyzed. All patients who underwent elective surgery in the age group > 18 years were included in the study. The exclusion criteria were (1) All patients < 18 years, (2) patients with comorbidities such as diabetes, HIV infection, immunosuppression, patients on neoadjuvant chemotherapy/ radiotherapy etc.(3) patients having peritonitis, (4) patients with anemia and hypoproteinemia, (5) incision over previous scar, (6) previous history of hypertrophic scar/keloid, (7) patients not willing to be included in the study.(8)infection at the incision site.(8)patients with pacemaker device. Standard antiseptic protocol was followed for both the groups.

RESULTS AND DISCUSSION

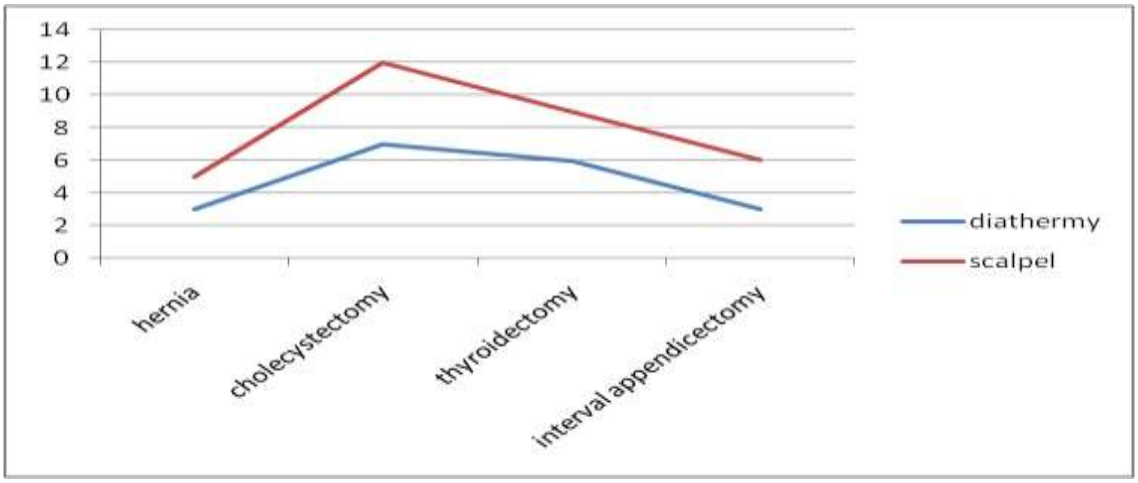
With the advent of modern electrosurgical units capable of delivering pure sinusoidal current, this technique is now becoming extremely popular because of rapid hemostasis, faster dissection and reduced overall operative blood loss. In our study, we found that diathermy use is associated

with lesser blood loss and incision time. No significant difference were found in postoperative wound complication rates between the two groups. Pearlman et al compared the two methods and found that diathermy incision was associated with significantly less incision time and less incision-related blood loss. Wound related complications were same. Telfer et al compared two methods and concluded that diathermy was associated with significantly less blood loss and better cosmesis.

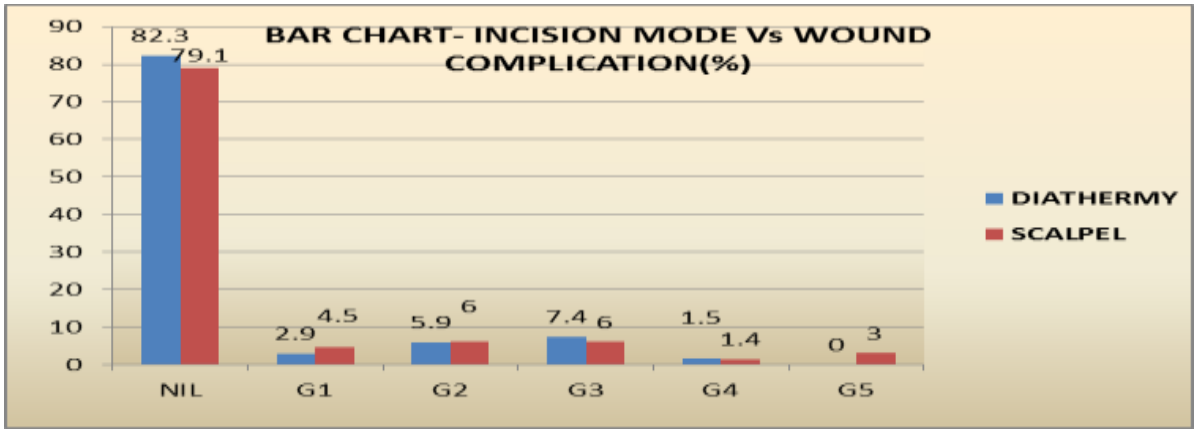
Time Comparison



Comparison of Blood Loss



Wound Complication Rates



RESULTS AND DISCUSSION

The results showed significantly less blood loss associated with diathermy incisions over scalpel incisions. Incision time was significantly lower for patients in the diathermy group ($P < 0.001$). . Postoperative wound assessment in terms of healing and infection rate of both groups was almost

the same and was statistically insignificant (P > 0.05). No difference in cosmetic outcome was noted between cutting diathermy and scalpel group.

CONCLUSION

The final conclusion in my study is that diathermy use is associated with less incision time with swift technique, and reduced blood loss are encouraging facts supported by previous studies and thus recommend routine use of cutting diathermy for skin incisions. There is no change in wound complication rates and scar formation with use of surgical diathermy. In elective surgery Diathermy skin incision has significant advantages over scalpel use as it because of in less incision time, less blood loss.

REFERNCES

1. A comparative study of Diathermy Vs Scalpel skin incision in abdominal in abdominal surgeries. Dr. S. Sujith Kumar M.S., Dr. R. Diana Grace .M.D., Dr. K. Dinesh Babu M.S., IOSR Journal of Dental and Medical Sciences (IOSR-JDMS). 2015; 14(12): 48-49
2. Kearns SR, Connolly EM, McNally S. Randomized clinical trial of diathermy versus scalpel incision in elective midline laparotomy. Br J Surgery 2001; 88: 41–44
3. Dixon AR, Watkin DF. Electrosurgical skin incision versus conventional scalpel: a prospective trial. J R College of Surgery Edinburg 1990;35:299–301
4. Sebben JE. Electrosurgery principles: cutting current and cutaneous surgery–part I. J Dermatol Surg Oncol 1988; 14: 29–31
5. Ozgun H, Tuncyurek P, Boylu S .The right method for midline laparotomy: what is the best choice for wound healing. Acta Chirurgica Belgica 2007;107: 682–686
6. Garcia A, Nascimento JE, Darold EM. Healing of abdominal wall aponeurosis of rats after incision with either cold scalpel or electrocautery. Acta Cir Bras 2007; 22(Suppl 1):12–15