

A Prospective Study to Assess the Post Operative Wound Complications between Conventional Lazy 'S' Incision Vs Horizontal Incision in Inguinal Block Dissection

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I. Introduction

Inguinal lymphadenectomy, or groin dissection, has a key role in the management of patients with penile, vulval, anal, and cutaneous malignancy. The venous drainage of the inguinal region occurs mainly through the external pudendal, superficial circumflex iliac and saphena magna veins. The inguinal nodes are one of the major lymphatic blocs of the human body. They are responsible for drainage of the inferior limbs, genitalia, posterior perineum, and inferior extremity of the abdominal wall. The anatomy of the inguinal lymphatics informs a logical approach to the examination of the region that can readily be taught to patients at risk of inguinal metastasis from a range of cancers. Groin dissection is associated with high postoperative morbidity, chiefly related to wound healing and lymphoedema. Meticulous surgical technique is required to reduce postoperative complications. Complications of inguinal lymphadenectomy are common, and trials are currently seeking ways of reducing morbidity associated with the operation.

II. Materials And Methods

Primary Objectives: To compare the post operative wound complications and associated morbidities like Flap necrosis, seroma, wound infection, wound gaping Lymphadema, duration of hospital stay.

Eligibility criteria

A. Inclusion criteria:

All patients who is undergoing unilateral or Bilateral inguinal block dissections for skin cancers of lower limbs, perineal, groin, genital and anorectal malignancies

B. Exclusion criteria Patients who has grossly extracapsular or fungating nodal mass in inguinal region and patients who had preoperative radiotherapy.

III. Methodology:

All patients who underwent unilateral or bilateral inguinal block dissection for malignancy of genital, anorectal region and skin cancer involving lowerlimbs Government Rajaji Hospital attached to Madurai Medical College.

Study design: This is prospective study to assess the post operative wound complications between conventional lazy s incision vs horizontal incision in inguinal block dissection GRH Madurai"

- **Study Place:** Department of Surgery, Government Rajaji Hospital, Madurai Medical College, Madurai.
- DESIGN OF THE STUDY : PROSPECTIVE STUDY
- PERIOD : 6 MONTHS
 - SAMPLE SIZE : 50
 - STUDY PLACE : GRH MADURAI

Procedure

Ethical clearance has been obtained from "Ethical Clearance Committee" of the institution for the study. Based on the selection criteria patients admitted with clinical diagnosis of carcinoma penis, carcimoma vulva, anal canal, scc of foot who underwent primary suyergy with inguinal block dissection under Department of surgery Govt. Rajaji Hospital and medical college, Madurai during the study period were screened. The nature of the study was explained to the patients. The patients were included in this study after getting written informed consent. History and clinical examination was done for all and recorded in the profoma. Follow up was done for upto 6 months.

Statistical analysis

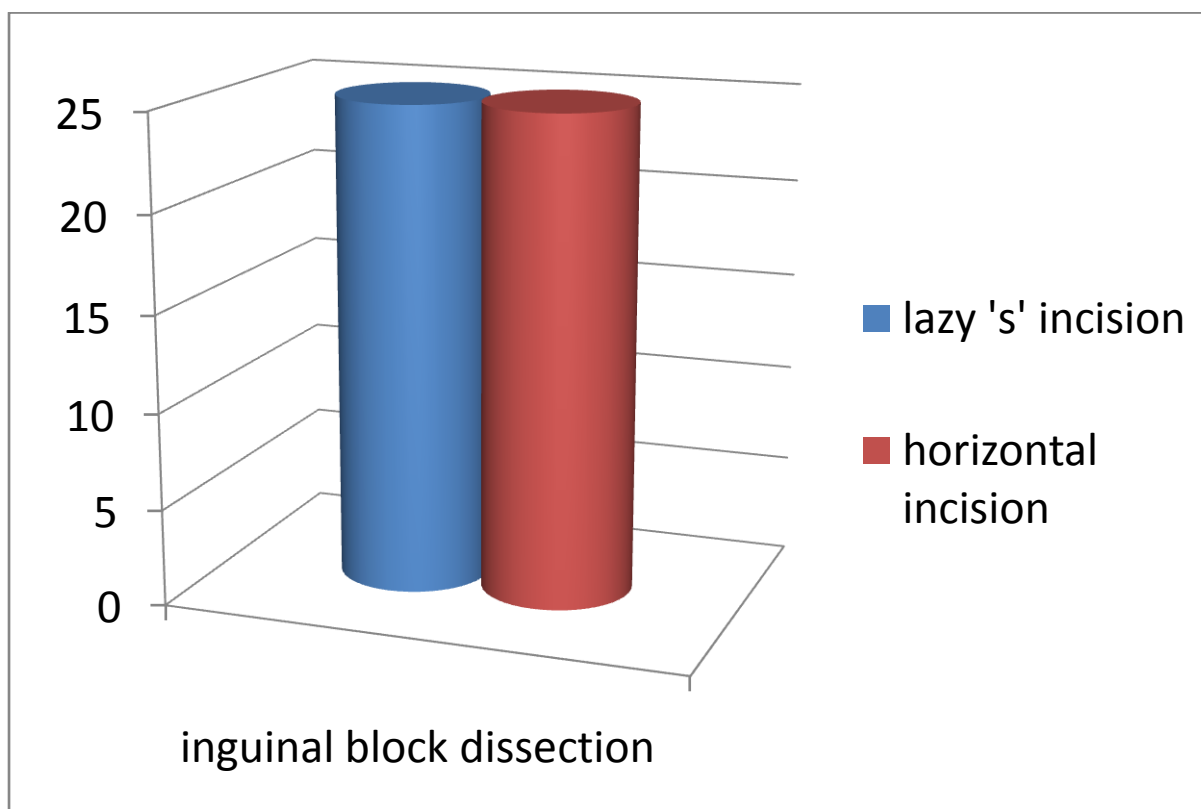
The data obtained was tabulated on Microsoft excel spreadsheet and analysed as below.

IV. Results:

A total of 50 patients with clinical diagnosis of carcinoma penis, squamous cell carcinoma of foot, melanoma of foot and carcinoma vulva who underwent inguinal block lymphnode dissection in department of surgery, GRH, Madurai were studied.

As per study, we have taken 50 cases out of which , 25 underwent inguinal block dissection with conventional lazy 's'incision and 25 underwent inguinal block dissection with horizontal infra-inguinal incision.

LAZY 'S' INCISION	25
HORIZONTAL INCISION	25



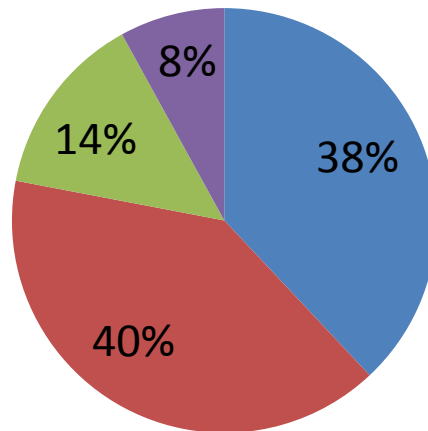
Case distribution:

In our study, majority of case we included was squamous cell carcinoma foot and carcinoma penis

CARCINOMA PENIS	19
SCC OF FOOT	20
MELANOMA OF FOOT	7
CARCINOMA VULVA	4

CASE DISTRIBUTION

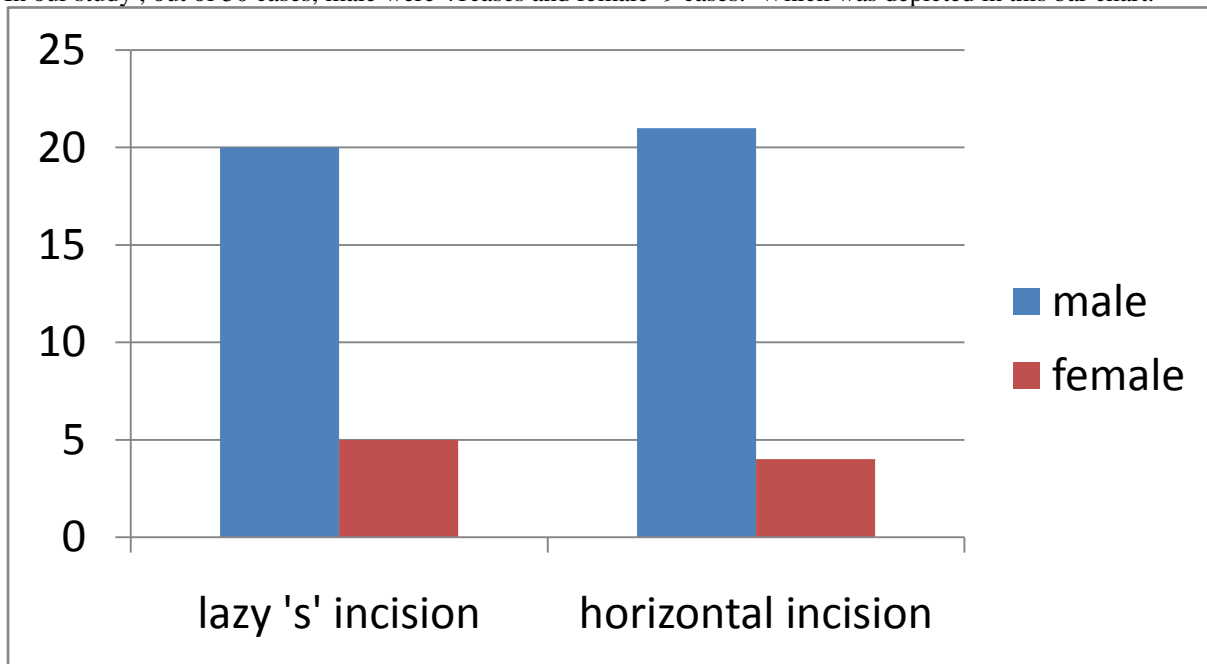
■ ca penis ■ scc foot ■ melanoma foot ■ ca vulva



SEX DISTRIBUTION:

	MALE	FEMALE
LAZY 'S' INCISION	20	5
HORIZONTAL INCISION	21	4

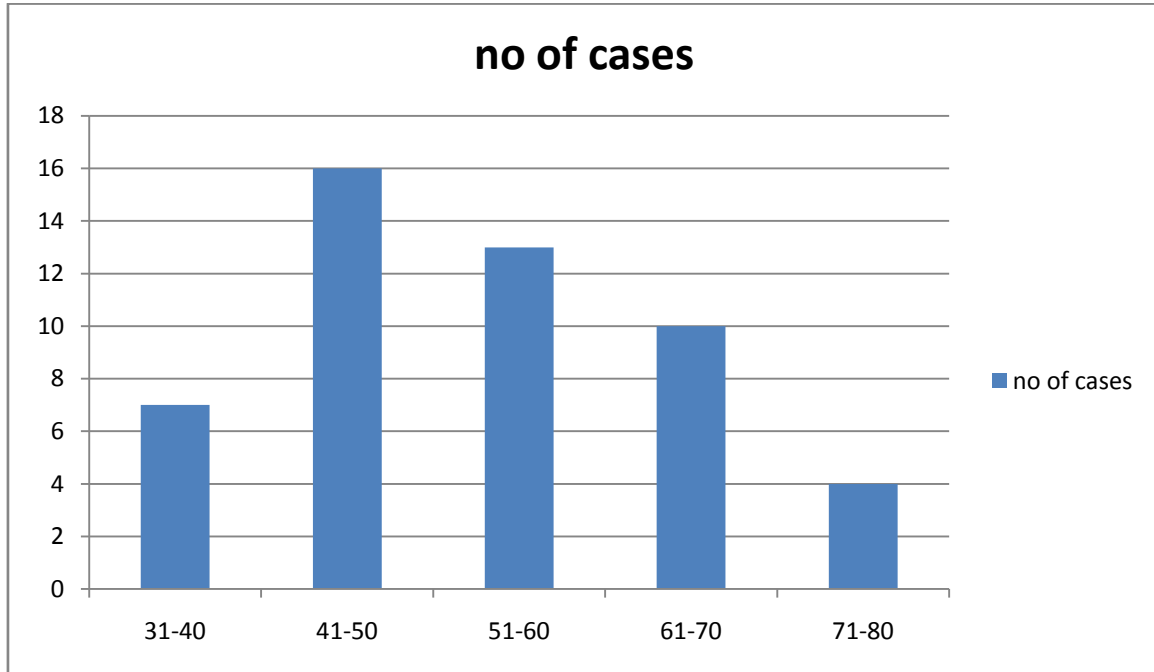
In our study , out of 50 cases, male were 41cases and female 9 cases. Which was depicted in this bar chart.



DISTRIBUTION OF PATIENTS BY AGE:

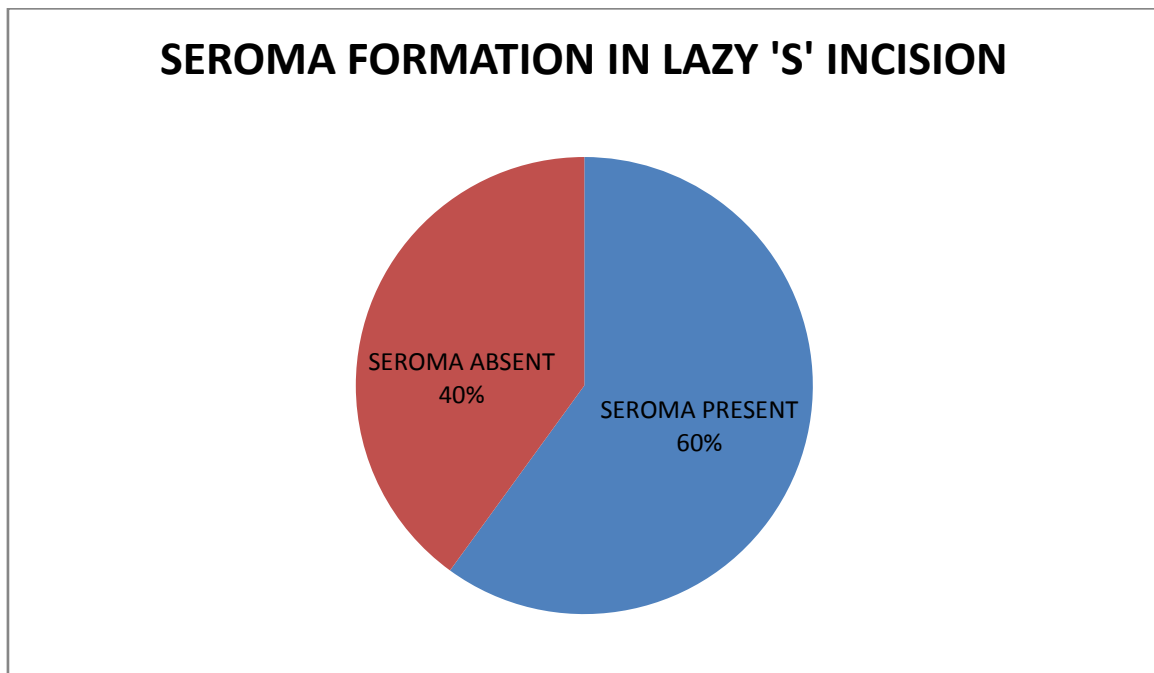
Age Group (years)				
30-40	41-50	51-60	61-70	71-80
7	16	13	10	4

In our study, majority of cases fall under age group 41-50. Least being 71-80 yrs group. The youngest person included in study was 31 yrs and oldest person was 78 yrs.



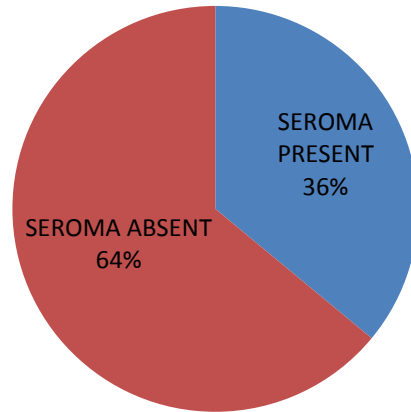
SEROMA FORMATION:

	LAZY 'S' INCISION	HORIZONTAL INCISION
SEROMA PRESENT	15 (60%)	9 (36%)
SEROMA ABSENT	10	16



Patients who under went inguinal block dissection by conventional lazy 's' incision had seroma formation for upto 15 (60 %) of cases

SEROMA FORMATION IN HORIZONTAL INCISION



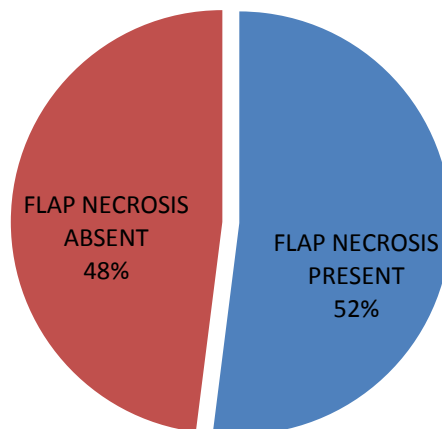
In patients, who underwent inguinal block dissection by horizontal infrainguinal incision , had seroma formation for 9 cases (36 %). By comparing both groups, there is significant lower number of seroma formation postoperatively in horizontal infrainguinal incision for inguinal block dissection.

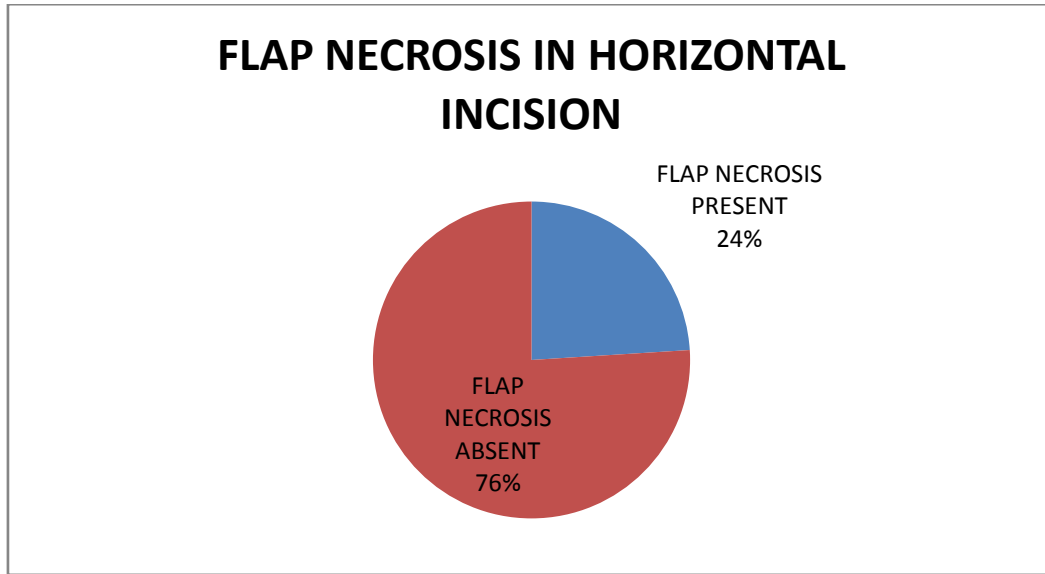
FLAP NECROSIS

	LAZY'S' INCISION	HORIZONTAL INCISION
FLAP NECROSIS +	13(52%)	6 (24%)
FLAP NECROSIS -	12	19

Flap necrosis was one of the most common complication in this procedure. As per study, flap necrosis was observed in 13 (52%) cases who underwent inguinal block dissection by lazy 's' incision comparing to horizontal incision which was lower incidence of 6 (24%) cases.

FLAP NECROSIS IN LAZY 'S' INCISION

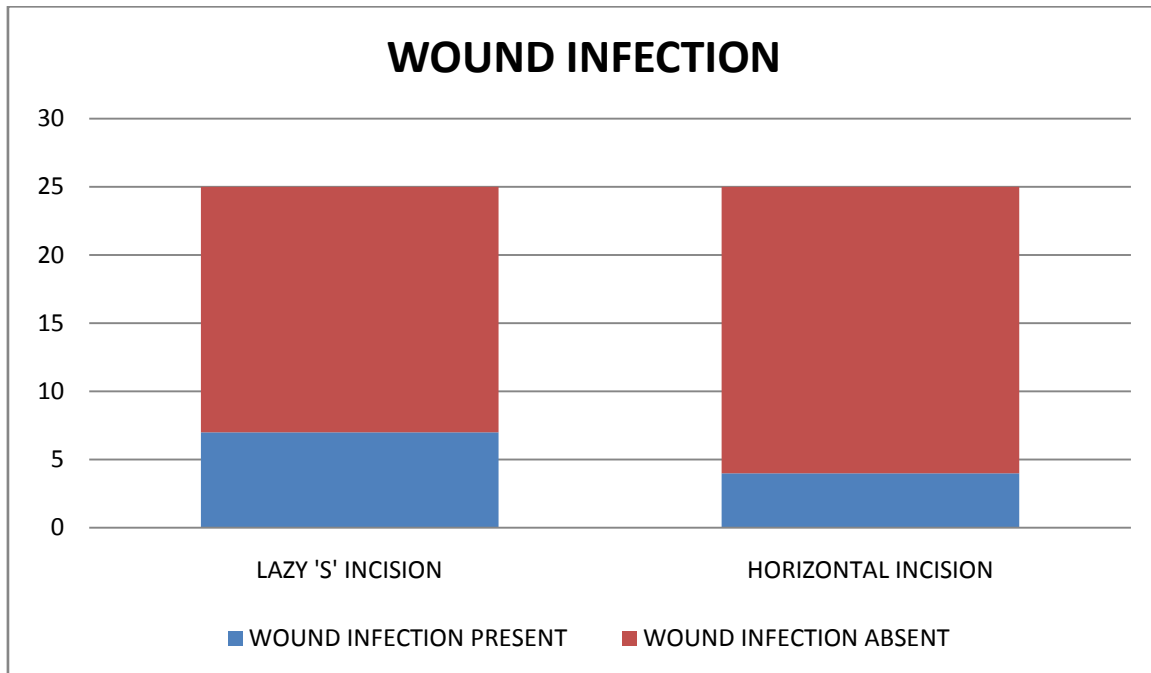




WOUND INFECTION:

	LAZY 'S' INCISION	HORIZONTAL INCISION
WOUND INFECTION PRESENT	7 (24%)	4 (16%)
WOUND INFECTION ABSENT	18	21

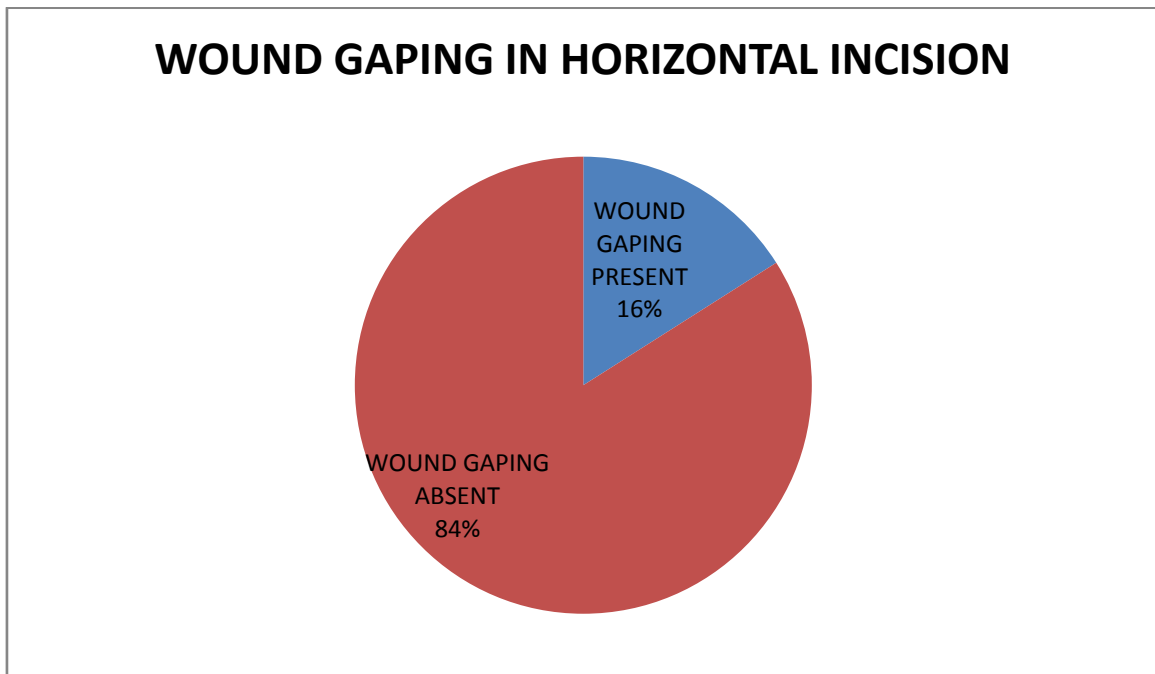
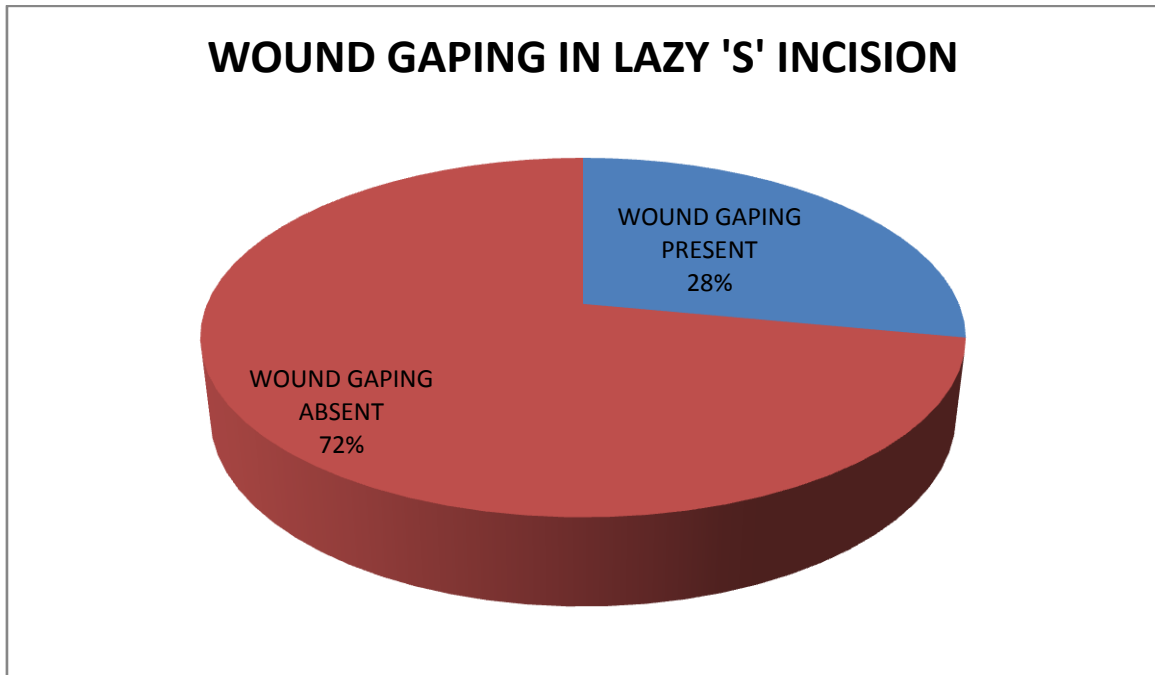
As per study, wound infection was defined by the use of antibiotics for culture-proven infected drainage postoperatively. Wound infection was observed in 7 (28%) cases in lazy 's' incision group and 4 (16%) cases in horizontal incision group. As per our study, wound infection was observed very minimal in horizontal incision group.



WOUND GAPING:

	LAZY 'S' INCISION	HORIZONTAL INCISION
WOUND GAPING PRESENT	7 (28%)	4 (16%)
WOUND GAPING ABSENT	18	21

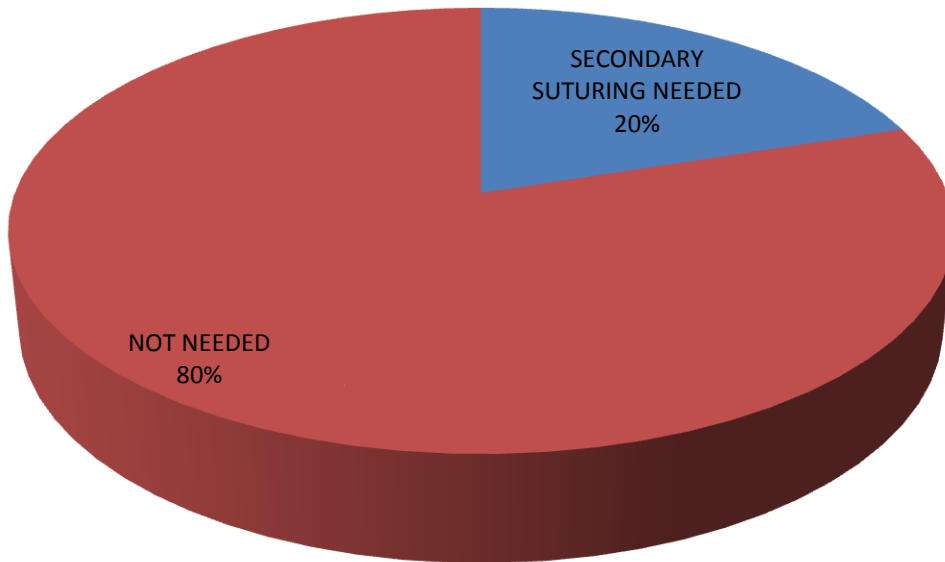
wound dehiscence / gaping was described as wound healing problem with a measured defect of at least 1 cm. As per study wound gaping was observed in 7 (28%) cases who underwent inguinal block dissection using lazy's' incision compared with horizontal incision group have only 4 (16%) of cases.



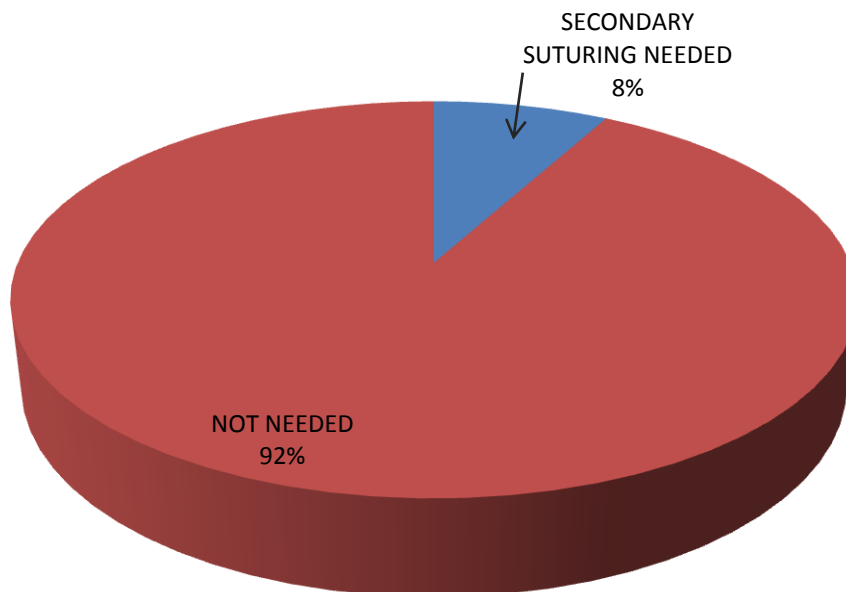
SECONDARY SUTURING:

	LAZY 'S' INCISION	HORIZONTAL INCISION
SECONDARY SUTURING NEED	5(20%)	2 (8%)
NOT NEEDED	20	23

NEED FOR SECONDARY SUTURING IN LAZY 'S' INCISION



NEED FOR SECONDARY SUTURING IN HORIZONTAL INCISION



As per observation in our study, patients who develop wound gaping managed with cleaning and dressing . out of which 5 (20%) cases in Lazy 's'group need secondary suturing compared with horizontal incision group only 2 (8%) cases required secondary suturing.

DURATION OF HOSPITAL STAY:

Duration of stay	N	Mean	Median	SD	t value	p value
Lazy S incision	25	8.28	8	2.951	3.749	0.00047
Horizontal incision	25	5.6	5	2.02		

significant	p value	Duration of stay
0.01	0.000477	significant
0.05	0.000477	significant
0.1	0.000477	significant

As per study, in terms of duration of hospital stay , in lazy’s’ incision group, mean duration of hospital stay was 8.28 days, median was 8.

Standard deviation was 2.951 .

In horizontal incision group, mean duration of hospital stay was 5.6, median was 5 and standard deviation was 2.02.

‘ t ‘test - 3.749301.

The p value is 0.000477

P value is <0.01

P value is < 0.05

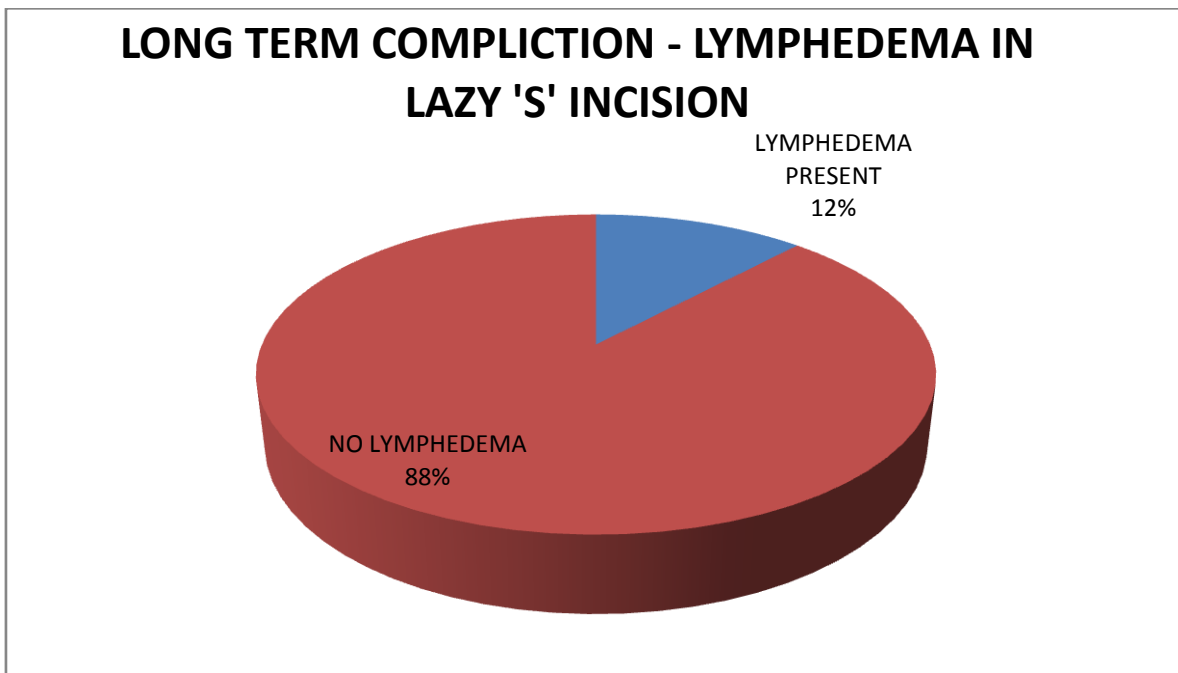
P value is <0.1

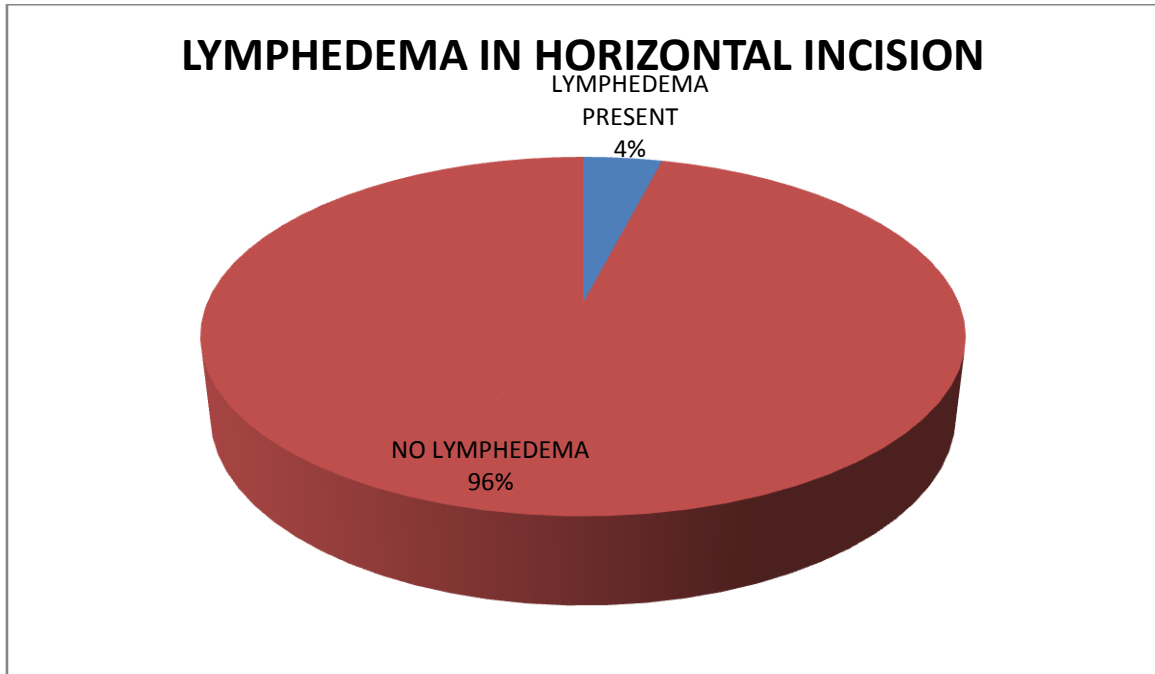
In our observation, there was significant reduction in duration of hospital stay in patients who underwent inguinal block dissection using horizontal incision.

**LONG TERM COMPLICATION
FORMATION OF LYMPHEDEMA**

	LAZY’S’ INCISION	HORIZONTAL INCISION
LYMPHEDEMA PRESENT	3(12%)	1(4%)
NO LYMPHEDEMA	22	24

As per study , patients were followed up for 6 months. 3 (12%) cases develop one of the dreaded complication – lymphedema in lazy’s’ incision group compared with 1 case (4%) in horizontal incision group.





Pictures :



Fig-18
Horizontal incision- inguinal block dissection



Fig-19 Saphenous sparing lymphadenectomy by horizontal incision.



Fig-20

Postoperative picture- horizontal incision



Fig-21

Postoperative picture – 's' shaped incision showing flap necrosis

V. Discussion

Complications following inguinal dissection can be classified into short-term/wound complications and longterm/ lymphedema formation. The most frequent wound complications are wound infections, wound dehiscence, seroma formation, and hematoma formation. Serpell et al.

reported an overall incidence of wound complication rate as high as 71% after inguinal lymph node dissection for melanoma with a 25% incidence of infection, 25% incidence of delayed wound healing, 46% incidence of seroma, and 29% incidence of lymphedema.

In our study, we compared the post operative wound site complications such as formation of seroma, flap necrosis, wound dehiscence, wound infection , secondary suturing, duration of hospital stay and lymphedema formation.

Observations in my study, there is seroma formation in 60% (15 cases) in lazy's' incision group but (9 cases)36% in horizontal incision group. Seromas were managed with sterile aspirations in outpatient clinic and no additional treatment was needed for these patients Majority of patients are treated conservatively . Flap necrosis was observed in 13 cases (52%) in lazy 's' group comparatively low in hoeizontal incision group 6 cases (24%). Out of 13 flap necrosis in lazy 's' group , 7 patients develop woung infection and wound

dehiscence. Others managed conservatively. Out of 6 flap necrosis in horizontal incision group, 4 develop wound gaping and dehiscence. Other 2 managed conservatively.

Wound infection and wound gaping developed in 7 cases (28%) in lazy 's' incision and Only 4 cases (16%) in horizontal incision group. Out of which, only 5 cases in lazy 's' group and 2 cases in horizontal group required secondary suturing . The mean duration of hospital stay in lazy 's' incision group was 8.28 days and in horizontal incision group was 5.6 days.

The patients was followed up for 6 months . 3 cases develop lymphedema in lazy 's' incision group and only 1 case in horizontal incision group develop lymphedema . Efforts to minimize lower extremity lymphedema include early use of compression stockings and saphenous vein preservation when feasible. The reason for major wound complications is due to compromised vascular supply in skin flaps . because Cutaneous vessels are horizontally oriented and compromised in vertical /lazy 's' incision.Tension line are oriented horizontally in thigh, incision against these line would affect wound healing .Wound complications results in increased duration of stay, delayed starting of postoperative adjuvant treatment. Therefore adequate surgical planning is necessary to avoid potential wound complications and significant morbidity.

VI. Conclusion:

Surgical management of inguinal lymph nodes forms a key element in the treatment algorithm for several malignancies. Clinicians should be aware of the indications for surgery and the high postoperative morbidity. In lazy 's' incision , there was significant wound morbidities because there is horizontal orientation of vessels in thigh and inguinal region which is compromised in vertical / lazy 's' incision. Aseptic surgical technique and removal of the vascular compromised skin during the procedure may further help the low complication rate. Therefore , according to our study, we suggest that horizontal incision for inguinal block dissection help in reducing the wound morbidity.

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