

Comparative Study of Preservation Versus Elective Division of Ilioinguinal Nerve in Open Mesh Repair of Inguinal Hernia

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Abstract

Background and Objectives: Chronic post herniorrhaphy groin pain is defined as pain lasting for more than 3 months after surgery. It is one of the most important complications occurring after inguinal hernia repair and it occurs with greater frequency than previously thought. Majority of chronic pain has been attributed to Ilioinguinal nerve entrapment.

Routine excision of the ilioinguinal nerve is an attempt to decrease the incidence of chronic groin pain caused by nerve entrapment, inflammation and fibrotic reactions around the nerve.

The purpose of the current study is to evaluate the effect of routine ilioinguinal nerve excision compared to nerve preservation on chronic groin pain and other sensory symptoms when performing Lichtenstein tension free inguinal hernia repair.

Method: A total of 60 patients admitted for inguinal hernia at Government Rajaji Hospital Madurai who met with the inclusion criteria underwent open mesh repair of inguinal hernia over the study period from August 2015 to August 2016. The ilioinguinal nerve was identified and preserved in 30 patients (group A) and elective division of the ilioinguinal nerve was done in 30 patients (group-B). Patients were evaluated for pain and other sensory symptoms at PoD-1, at one month, at three months, and at six months after surgery by using 4 point verbal scale.

Results: 50 of 60 patients completed the study protocol fully, 26 patients (25 men and 1 women) with mean age 31 ± 20 belonged to group A, and 24 patients (all men) with mean age of 39 ± 14 belonged to group B. The results of the follow up visits are 24 Vs 19 ($p > 0.05$) at POD-1; 13 Vs 10 ($p > 0.05$) at 1 month; 10 Vs 2 ($p > 0.05$) at 3 months; and 8 Vs 1 ($p < 0.05$) at 6 months in group A and group B respectively. The mean severity score was 1.65 ± 0.79 vs 1.37 ± 0.92 at POD-1; 0.81 ± 0.94 vs 0.42 ± 0.50 at 1 month; 0.58 ± 0.81 vs 0.08 ± 0.28 at 3 months; and 0.39 ± 0.09 vs 0.05 ± 0.20 at 6 months in group A and group B respectively. There was significant difference ($p < 0.05$) at 3 and 6 months.

The results showed no significant difference in the neurosensory disturbances in either Groups, that is, the incidence of hypoesthesia was 57.6% vs 62.%; 26.9% vs 37.5%; 19.2% vs 20.8%; and 11.5% vs 16.6% at POD-1, 1, 3, and 6 months in group A and B respectively. And the incidence of numbness was 19.2% vs 12.5%; 23% vs 25%; 15.3% vs 20.8%; and 11.5% vs 12.5% at POD-1, 1, 3, and 6 months in group A and B respectively.

Conclusion: The prophylactic excision of the ilioinguinal nerve during Lichtenstein mesh hernia repair decreases the incidence of chronic groin pain after surgery. Furthermore the procedure is not significantly associated with additional morbidities in terms of local cutaneous neurosensory disturbances. So when performing Lichtenstein inguinal hernia repair, routine ilioinguinal neurectomy is a reasonable option.

Keywords: Inguinal hernia; Groin; Lichtenstein; Polypropylene mesh; Herniorrhaphy; Ilioinguinal; Neurectomy; Mesh repair.

I. Introduction

Hernias may be generally defined as a "Protrusion of a viscus or part of a viscus through an abnormal opening in the walls of its containing cavity".¹

"A protrusion of any viscus from its proper cavity is denominated a hernia. The protruded parts are generally contained in a bag by a membrane with which the cavity is naturally invested"

– Sir Astley Cooper 1804. Chronic post herniorrhaphy groin pain is defined as pain lasting for more than 3 months after surgery. It is one of the most important complications occurring after inguinal hernia repair

and it occurs with greater frequency than previously thought. A review of studies published between 1987 to 2000 showed an overall incidence of 25% with 10% of patients having pain fitting a definition of moderate or severe.²

Incidence of long term (≥ 1 year) post operative neuralgia reported for Lichtenstein repair of inguinal hernia range from 6 – 29 %, ³ Inguinodynia is the recommended generic term for chronic groin pain after hernia repair and should replace ‘neuralgia or mesh inguinodynia ‘ to promote uniformity and avoid confusion in the literature.⁴ In cases that involves workman`s compensation issue, treating a post surgical patient becomes complicated. Although most legal cases results in out of court settlement, worth noting is the fact that 5 – 7% of patients with post herniorrhaphy neuralgia will sue their surgeons.⁵

The concept of routine neurectomy in surgery is not unique to inguinal hernia repairs. Routine neurectomy is often performed during axillary and neck dissections in which the Intercostobrachial and greater auricular nerves are sacrificed. Routine ilioinguinal nerve excision has been proposed as a means to avoid the troubling complication of long term post herniorrhaphy neuralgia.⁷

Theoretically excision of ilioinguinal nerve would eliminate the possibility of inflammation neuralgia arising from entrapment, neuroma, fibrotic reactions yet controversies persists and the procedure is not widely accepted. The purpose of the current study was to evaluate the effect of routine ilioinguinal nerve excision compared to nerve preservation on chronic groin pain and other sensory symptoms when performing Lichtenstein inguinal hernia repair.

II. Aims And Objectives

1. To evaluate the effect of preservation versus elective division of the ilioinguinal nerve on chronic groin pain and hypoesthesia after Lichtenstein tension free inguinal hernia repair using Polypropylene mesh.

Methodology source of data:

This is a prospective study comprising 60 patients of inguinal hernia over a period of 12 months from August 2015 to August 2016 with 6 months follow-up. In this present study, the clinical material consists of patients admitted with uncomplicated inguinal hernia (both males and females) in the Department of General Surgery, at Government Rajaji Hospital, Madurai.

Method of collection of data:

Sample size:

The size of the sample works to 60 cases.
30 cases with ilioinguinal nerve preservation (group A)
30 cases with elective division of the nerve (group B).

Inclusion criteria:

Patients admitted with uncomplicated inguinal hernia (Direct & Indirect).

Exclusion Criteria:

Patients below 18 and above 60 years. Patients with diabetes mellitus. Patients with complicated inguinal hernias and recurrent hernias. Previous surgery in the inguinal region. Mesh allergy and Subsequent hernia repair in the observation period. Previous history of trauma and pain at the inguinal region. The data will be collected in prescribed Proforma where in it contains, particulars of the patient, Clinical history, clinical examination and diagnosis, Relevant investigations, and details of surgery.

Follow-Up

Period of follow up being 6 months from the day of surgery. Parameters used for **comparison-** Pain (using 4 point verbal scale). Hypoesthesia. Numbness. Ethical clearance has been obtained from ethical committee of Government Rajaji Hospital, Madurai, prior to conducting the study.

Statistical analysis:

In this study the results of the two groups were compared and analyzed by using Chi square test.

III. Results And Observations

In this “Comparative study of preservation versus elective division of ilioinguinal nerve on post operative groin pain , in open mesh repair of inguinal hernia” Conducted in department of Surgery at Government Rajaji Hospital, Madurai. From August 2015 to August 2016 . A Total of 60 Patients of uncomplicated inguinal hernia who underwent Lichtenstein mesh Hernioplasty included for this Prospective comparative study, 4 of 30 patients in Nerve preservation and 6 of 30 patients in nerve excision group were lost to follow –up, leaving 50 patients who completed the study protocol fully. So 26 patients with Nerve preservation (group A) and 24 patients with nerve excision (group B) were considered for the study.

Patients Demography

Table -1 Age at Presentation.

Age group (in years)	No of Patients	Percentage (%)	Group A n=26 (%)	Group B n= (24) (%)
< 20	3	6	2 (7)	1 (4)
21 – 30	16	32	9 (34)	7 (30)
31 - 40	16	32	8 (30)	8 (33)
41 – 50	8	16	4 (15)	4 (16)
51 – 60	7	14	3 (11)	4 (16)

In this study the age of the patients ranged between 18 years to 60 years . The youngest patient included in this study series was 19 years, and eldest was 58 years old . Almost 64% of the patients were in 20 – 40 age group. This includes 34% in group A and 30% in group B.

Sex Distribution

Table -2 Sex distribution

Sex	No of patients	Percentage
Male	49	98
Female	01	2

In this study only 2% of the patients were female, as compared to males who made 98% of the total cases.

Mode Of Presentation

Table -3 Mode of presentation

MOP	No of patients	Percentage
Swelling only	37	74
Swelling with pain	13	26

Without exception all the patients presented with swelling , Of these 74 % of patients presented with swelling only , While 26 % patients presented with both swelling and pain.

Duration Of Illness

Table -4 Duration of illness

Duration	No of patients	Percentage
< 6 Months	13	26
6– 12 Months	19	38
>1 year	18	36

Majority of the patients in this study ie, 64 % of patients presented and were operated with in 1 year of the onset of hernia, and 36 % presented

Relation With Occupation

Table -5 Relation with occupation

Occupation	No of patients	Percentage
Heavy work	31	72
Moderate work	15	30
Light work	4	8

The present study shows that 72 % patients were involved in heavy and strenuous work like Agricultural labour, Manual labour, and Coolie. 30 % of patients were involved with moderate work like Cooks, Teachers and Drivers. And 8% of patients involved with light work.

Predisposing Factors

Table- 6 Predisposing factors

Factors	No of patients	Percentage
Bladder outlet obstruction	7	14
Constipation	12	24
Chronic cough	3	6
Smoking	14	28
No obvious factors	24	48

In this study 14% of the patients showed the features of bladder outlet obstruction, 24% had constipation, 6% had chronic cough, 24% of patients work was lifting heavy weight eg, farmers, and 28% were smokers.

Location Of The Hernia

Table- 7. Location of hernia

Side	No of patients	Percentage
Right	31	62
Left	17	34
Bilateral	2	4

The Present study showed that hernia was more common on right side ie, 62% . Left side hernia comprised about 34 % , where as 4% was bilateral.

Type Of Inguinal Hernia

Table -8 Type of Hernia

Type	No of patients	Percentage
Direct	11	22
Indirect	39	78

In this present study 39 cases were belongs to indirect hernia which contributed 78 % . And 11 cases belongs to direct hernia which contributed 22% of the total.

Comparison Of Study Groups

Table -9 Comparison of study groups

Comparison of	Nerve preservation Group A (n=26) (%)	Nerve excision Group B (n=24) (%)
1. Demography		
Male	25 (96)	24 (100)
Female	01 (4)	0 (0)
Mean age	31 ± 20	39 ± 14
2.Mode of presentation		
Swelling only	20 (76)	17 (71)
Swelling with pain	6 (24)	7 (29)
3 .Strain factors		
B O O	4 (16)	6 (25)
Constipation	7 (28)	5 (21)
Chronic cough	1 (4)	2 (8)
4 .Location		
Right	15 (58)	16 (67)
Left	11 (42)	6 (25)
Bilateral	0 (0)	2 (8)
5 . Type		
Direct	5 (19)	6 (25)
Indirect	21 (81)	18 (75)

In the present study Preservation of ilioinguinal nerve during Lichtenstein Inguinal hernia repair was performed in 26 patients mean age of 31 ± 20 years including 25 (96%) men and 1 (4%) women. Of the 26 patients, 20 (76%) presented with swelling in the groin only, where 6 (24%) presented with swelling

associated with pain. Of the 25 male patients, 4(16%) showed features of bladder outlet obstruction, 7 (28%) had constipation, and 1 (4%) had chronic cough. And 1 woman had no obvious predisposing factors. Regarding type, 15 (58%) patients had right sided inguinal hernia and 11(42%) had left side inguinal hernia. Of the 26 patients , 21(81%) cases were indirect inguinal hernia ,and 5 (19%) cases were direct hernia. Routine excision of ilioinguinal nerve during Lichtenstein hernia repair was performed in 24 patients , all are male patients with mean age of 39 ±14 years.Of the 24 patients,17 (71%) patients presented with swelling in the groin only, where as 7 (29%) are presented with swelling associated with pain. 6 (25%) patients showed features of bladderoutlet obstruction, 5(21%) had constipation,2(8%) had chronic cough. Of the 24 patients, 16 (67%) had right sided inguinal hernia, 6 (25%) had left sided inguinal hernia , and 2 (8%) were bilateral. 18 (78%) patients were indirect inguinal hernia, and 6 (25%) were direct hernia.

Follow-Up

Post operative Chronic groin pain, Hypoesthesia, and Numbness has been compared between two groups(A & B), At POD -1, At 1 Month, At 3 Months, At 6 Months and Results are compared with p value using Chi Square test.

Table -10 Incidence of post operative neuralgia

Severity	Nerve Preservation (n=26)	Nerve excision (n= 24)	p' value
POD-1	24	19	0.87 NS
1 month	13	10	0.91 NS
3 months	10	2	0.09 NS
6 months	8	1	0.03 S

In the present study the incidence of post operative neuralgia in group A (ilioinguinal nerve preservation) was compared with group B (ilioinguinal nerve excised) during Lichtenstein hernioplasty. The results of the follow up visits are 24 Vs 19 (p>0.05) at POD-1 ; 13 Vs 10 (p>0.05) at 1 month ; 10 Vs 2 (p>0.05) at 3 months ; and 8 Vs 1 (p<0.05) at 6 months in group A and group B respectively.

Table -11 Mean Severity score

In the present study severity of pain was compared between group A and group B, by using 4- Point verbal scale. The pain was Absent in 2 Vs 5 , Mild in 8 vs 7 , Moderate in 13 vs 10, and Severe in 3 vs 2 at POD-1 ; Absent in 13 vs 14 , Mild in 6 vs 10, Moderate in 6 vs 0 ,and Severe in 1 vs 0 at 1 Month ; Absent in 15 vs 22 , Mild in 7 vs 2 , Moderate in 2 vs 0, and Severe in 1 vs 0 at 3 Months ; Absent in 19 vs 23, Mild in 5 vs 1 , and Moderate in 3 vs 0 ;Severe in 0 Vs 0 Months in group A and group B respectively The mean severity score by using 4-point verbal scale in patients who reported post operative neuralgia was 1.65±0.79 vs 1.37±0.92 at POD-1 ; 0.81±0.94 vs 0.42±0.50 at 1 month ; 0.58±0.81 vs 0.08±0.28 at 3 months ; and 0.39±0.09 vs 0.05±0.20 at 6 months in group A and group B respectively. There was no Statistically Significant difference of post operative neuralgia (p>0.05) at POD-1, at 1 month,and statistical significance at 3 months and at 6 months.

Table -12. Incidence of post operative hypoesthesia

Hypoesthesia	Group A (n=26)(%)	Group B (n=24)(%)	P Value
Follow-up at			
POD-1	15 (57.6)	15 (62.5)	0.75
1 Month	7 (26.9)	9 (37.5)	0.50
3 Months	5 (19.2)	5 (20.8)	0.90
6 Months	3 (11.5)	4 (16.6)	0.75

In the present study the incidence of post operative groin hypoesthesia was compared between group A and group B. The results of the follow up visits are 57.65 vs 62.5% (p>0.05) at POD-1; 26.9% vs 37.5% (p>0.05) at 1 month ; 19.2%vs 20.8% (p>0.05) at three months ; and 11.6%vs 16.6% (p>0.05) at 6 months in group A and B respectively. Here the p value was found to be insignificant (p>0.05).

Table -13 Incidence of post operative numbness

Numbness	Group A (n=26)	Group B (n=24)	P value
Follow-up at			
POD-1	5 ((19.2)	3 (12.5)	0.50

1 Month	6 (23.07)	6 (25)	0.90
3 Months	4 (15.3)	5 (20.8)	0.75
6 Months	3 (11.5)	3 (12.5)	0.90

In the present study the incidence of post operative numbness was compared between group A and B. The results of the follow up visits are 19.2% vs 12.5% (p>0.05) at POD-1 ; 23% vs 25% (p> 0.05) at 1month ; 15,3% vs 20.8 % (p>0.05) at 3 months ; and 11.5% vs 12.5% (p>0.05) at 6 months. The difference was insignificant (p-value >0.05).

IV. Discussion

Chronic groin pain is a significant problem following open hernia repair with mesh, although the pain is often mild in nature, the quality of life studies have shown that chronic pain irrespective of severity can significantly interfere with normal daily activity.¹³ Routine excision of ilioinguinal nerve in an attempt to decrease the incidence of chronic inguinodynia has been proposed by many studies , yet controversies persists. So the present study was undertaken to evaluate the effect of ilioinguinal nerve excision on post operative groin pain, hypoesthesia , and numbness. In the present study No of patients were evaluated for pain, hypoesthesia, and numbness are 50 , in two study groups (group A – 26 patients, and group B – 24 patients). In group A ilioinguinal nerve carefully protected throughout the operation ,extreme care was taken during surgery to avoid inclusion of nerve during suturing and mesh placement. In group B the ilioinguinal nerve was excised as far as lateral to the deep ring. The patients were followed up for assessment of pain, hypoesthesia, and numbness at POD -1 , 1, 3 and 6 months after operation.

V. Results Are Compared With Other Studies

Incidence Of Chronic Groin Pain

Table -14 Comparison of incidence of groin pain with other studies

Studies	Dittrick M. D et al		Mui et al		FatemeH et al		Present study	
Group	NP n=24 (%)	NE n=66 (%)	NP n=50 (%)	NE n=50 (%)	NP n=50 (%)	NE n=50 (%)	NP n=26 (%)	NE n=24 (%)
Pod-1							24	19
At 1 m	5 (21)	3 (5)	37 (78)	37(78)			13	10
At 3 m					10 (21)	3 (6)	10	2
At 6m	6 (26)	2 (3)	14 (28)	4 (8)			8	1

The above table shows the number of patients and percentage of incidence of post operative chronic groin pain in three previous studies and the present study. The incidence of post operative groin pain in the present study compared ilioinguinal nerve preservation versus routine excision of ilioinguinal nerve showing the results 24 vs 19 at POD-1 ;13 vs 10 at 1month comparable with study conducted by Dittrick (Dittrick M.D et al, 2004).⁷ ; 26.9% vs 12.5% at 3 months correlates well with the study done by fatemeH (FatemeH M.D et al, 2008).¹⁶ ; 19.2% vs 8.2% at 6 months correlates well with studies done by (Mui M.B et al, 2006)¹³ and Dittrick (Dittrick M.D et al,2004). Here the incidence of pain at POD-1 is not considered for post operative chronic groin pain.

Incidence Of Hypoesthesia

Table-15. Comparison of incidence of hypoesthesia

Studies	Mui et al 2006		FatemeH et al 2008		Present study	
Group	n=50 (%)	NE n=50 (%)	NP n=50 (%)	NE n=50 (%)	NP n=26 (%)	NE n=24 (%)
At POD-1			45 (90)	39 (78)	15 (57.6)	15 (62.5)
At 1 m	31 (66)	26 (55)	12 (24)	9 (18)	7 (26.9)	9 (37.5)
At 3 m					5 (19.2)	5 (20.8)
At 6 m	21 (42)	21 (42)	1 (2)	1 (2)	3 (11.5)	4 (16.6)

The above table shows the incidence of hypoesthesia in the present study compared with two other studies. In the present study the incidence of post operative hypoesthesia at groin between ilioinguinal nerve preservation and nerve excision during surgery, The results obtained are 57.6% vs 62.5% at POD-1; 26.9% vs 37.5% at 1 month; and 11.5% vs 16.6% at 6 months are comparable with studies conducted by Fatemeh (Fatemeh M.D et al, 2008).¹⁶ and Mui (Mui M.B et al, 2006).¹³

Incidence Of Numbness

Table – 16. Comparison of incidence of numbness

Study Group	Mui et al. 2006		Picchio et al. 2004		Present study	
	N P n=50 (%)	NE n=50 (%)	N P n=391 (%)	NE n=380 (%)	N P n=26 (%)	NE n=24 (%)
At POD-1	-	-	-	-	5 (19.2)	3 (12.5)
At 1m	16 (34)	9 (19.1)	46 (12)	54 (14)	6 (23)	6 (25)
At 3 m	-	-	-	-	4 (15.3)	5 (20.8)
At 6 m	9 (18)	13 (26)	12 (3)	18 (5)	3 (11.5)	3 (12.5)

In the present study the incidence of post operative numbness compared ilioinguinal nerve preservation versus nerve excision, results showing 23% vs 25% at 1 month, and 11.5% vs 12.5% are comparable with results of studies conducted by Picchio (Picchio et al, 2004)¹⁰ and Mui (Mui M.B et al, 2006).¹³

Comments

after the publication of several retrospective and prospective studies that showed an incidence of 6% to 29% for post herniorrhaphy inguinal pain.^{12,16} Many investigators and pioneers started to establish algorithm for management of these chronic pain syndrome, others tried to define a method to prevent this complications rather than treat it. A proposed mechanism for the development of post operative chronic groin pain is inflammation and fibrosis induced by the mesh, which is in close proximity to the ilioinguinal nerve.^{16,17} In addition unintentional injury or strangulation of the nerve during suturing may also contribute to the phenomenon. There is increasing evidence to suggest that prophylactic excision of ilioinguinal nerve during open hernia repair can potentially decreases the incidence of chronic groin pain following operation.⁷ Some studies have failed to show any relationship between the division or preservation of ilioinguinal nerve and risk of developing chronic groin pain.¹⁰

Ravichandran et al in 2000⁸

One of the early studies in the fields of elective neurectomy in inguinal hernia repair was a pilot study conducted by Ravichandran et al at 2000, in which 20 patients with bilateral inguinal hernia underwent surgery with the ilioinguinal nerve being preserved on one side and divided on the other side, all of the differences in the post surgical pain and numbness between the two sides were insignificant.

Dittrick et al 2004⁷

Retrospective chart review performed by Dittrick et al 2004, on 90 patients who underwent Lichtenstein inguinal hernia repair. The ilioinguinal nerve was excised in 66 patients and preserved in 24 patients. These investigators concluded that the incidence of neuralgia was significantly lower in the neurectomy group versus the nerve preservation group (3% vs 26% P<0.001). At one year post operatively the neurectomy patient continued to have a significantly lower incidence of neuralgia (3% vs 25% p=0.003). The incidence of paraesthesia in the distribution of the ilioinguinal nerve was not significantly higher in the neurectomy group (13% vs 5% , p= 0.32) at 1 year.

Mui M.D et al 2006^{15,13}

Conducted a double blinded randomized controlled trail to investigate the short to mid-term neurosensory effect of prophylactic ilioinguinal neurectomy during Lichtenstein repair of inguinal hernia. 100 male patients were randomized into two groups. Ilioinguinal neurectomy (group A).

ilioinguinal nerve preserved (group B) during operation. Results concluded that the incidence of chronic groin pain at 6 months was significantly lower in the group A than group B. (8% vs 28.6%) $p=0.008$. No significant inter group differences were found regarding the incidence of groin numbness. Post operative sensory loss or changes at the groin region. And they postulated that the sensory loss caused by the neurectomy might be compensated by cross innervations from the collateral cutaneous nerves.

Fatemeh malekpour et al 2008 ¹⁶

Double blinded randomized controlled clinical trial was performed on 121 patients undergoing open anterior mesh repair of inguinal hernia. Of the 121 patients, 61 were nerve excision group and 60 were nerve preserving group. The chronic post surgical inguinodynia was seen in 6% in nerve excision group and 21% in nerve preserved group ($p=0.033$). Results were concluded that the neurectomy decreases the post surgical pain after elective inguinal hernia repair.

Picchio Marcello M.D et al, 2004 ¹⁰,

Conducted a double blinded randomized controlled trial on 813 patients, One year after surgery pain was absent in 231 (76.5) of nerve preserved and 213 (73%) of nerve transected patients. (difference 3.30% ; 95% confidence interval – 3.68% to 10.28%), mild pain in 55(18%) and moderate in 11 (4%) and 9 (3%), and severe in 5(2%) and 9 (3%). respectively $p=55$ Pearson test.

They suggested that post surgical pain after hernia repair is not affected by elective inguinal nerve division, yet sensory disturbances in the area are significantly increased. These controversial result, as well an article by Madura et al ¹⁴ - reporting the effectiveness of inguinal neurectomy for inguinal nerve entrapment to relieve pain in post surgical patients motivated us to study the comparison between elective ilio-inguinal nerve excision versus preservation on chronic groin pain and other symptoms.

In the present study –Results.

A Prospective comparative study conducted at Department of General Surgery at Government Rajaji Hospital, Madurai from August 2015 to August 2016 with 6 months follow up. 50 of 60 patients who completed the study protocol fully, this includes 26 of 30 patients in group A (ilioinguinal nerve preservation) and 24 of 30 patients in group B (ilioinguinal nerve divided). The results of the follow up visits are 24 Vs 19 ($p>0.05$) at POD-1 ; 13 Vs 10 ($p>0.05$) at 1 month ; 10 Vs 2 ($p>0.05$) at 3 months ; and 8 Vs 1 ($p<0.05$) at 6 months in group A and group B respectively. The mean severity score was 1.65 ± 0.79 vs 1.37 ± 0.92 at POD-1 ; 0.81 ± 0.94 vs 0.42 ± 0.50 at 1 month ; 0.58 ± 0.81 vs 0.08 ± 0.28 at 3 months ; and 0.39 ± 0.09 vs 0.05 ± 0.20 at 6 months in group A and group B respectively. The incidence of hypoesthesia was 57.6% vs 62.% ; 26.9% vs 37.5% ; 19.2% vs 20.8% ; and 11.5% vs 16.6% at POD-1, 1, 3, and 6 months in group A and B respectively, ($p>0.05$)

The incidence of numbness was 19.2% vs 12.5% ; 23% vs 25% ; 15.3% vs 20.8% ; and 11.5% vs 12.5% at POD-1, 1, 3, and 6 months in group A and B respectively, ($p>0.05$) Thus showed the incidence of chronic groin pain is lower in ilioinguinal nerve excision (group B) compared to nerve preservation (group A). But Statistically insignificant ($p>0.05$). No significant difference noted in Neurosensory disturbances in either group.

VI. Conclusion

In the present study 50 of 60 patients who have completed the study protocol fully, this includes 26 of 30 patients in group A (ilioinguinal nerve preservation) and 24 of 30 patients in group B (ilioinguinal nerve divided) who underwent Lichtenstein mesh hernioplasty at Government Rajaji Hospital, Madurai.

After analyzing the data and observations.

The present prospective comparative study demonstrated that the prophylactic excision of ilioinguinal nerve during Lichtenstein mesh hernia repair decreases the incidence of chronic groin pain after surgery. Furthermore the procedure is not significantly associated with additional morbidities in terms of local cutaneous neurosensory disturbances. However the sample size and the follow up period in the current study is relatively short, A larger study sample and longer follow-up may be needed before any further conclusion can be made. Although the study sample and follow period is short in this present study than reported by many previous studies it is still wise to recommend ilioinguinal neurectomy in patients

undergoing anterior inguinal hernia mesh repair. So when performing Lichtenstein inguinal hernia repair, routine ilioinguinal neurectomy is a reasonable option.

VII. Summary

“Comparative study of preservation versus elective division of ilioinguinal nerve on post operative groin pain in open mesh repair of inguinal hernia” Conducted in department of Surgery at GRH, Madurai from August 2015 to August 2016.

¾ Data collected in a prescribed proforma, analyzed and evaluated for the Pain, Hypoesthesia and Numbness at POD-1, 1, 3, and 6 months after surgery. ¾ Sample size was 60 patients in two groups, group A- 30 (ilioinguinal nerve preserved) and group B- 30 (ilioinguinal nerve divided) . 50 of 60 patients were completed the study protocol with 6 months follow-up. ¾ Of the 50 Patients, 26 patients (25 men and 1 women) with mean age 31 ± 20 belongs to group A, and 24 patients (all are men) with mean age of 39 ± 14 belongs to group B. ¾ 76% in the group A and 71% in the group B presented with only swelling in the groin, rest associated with pain. ¾ 15% in group A showed bladder outlet obstruction compared to 25% in group B, and also 27% in group B had constipation compared to 21% in group B, and 4% (group A) compared to 8% (group B) had chronic cough.

¾ 57% in the group A compared to 67% in group B had right sided inguinal hernia, rest had left sided hernia. ¾ 81% in the group A compared to 78% in group B had indirect inguinal hernia right sided indirect inguinal hernia is the common type .

¾ The results of the follow up visits are 24 Vs 19 ($p > 0.05$) at POD-1 ; 13 Vs 10 ($p > 0.05$) at 1 month; 10 Vs 2 ($p > 0.05$) at 3 months; and 8 Vs 1 ($p < 0.05$) at 6 months in group A and group B respectively. ¾ The incidence of hypoesthesia was 57.6% vs 62.%; 26.9% vs 37.5% ;

19.2% vs 20.8%; and 11.5% vs 16.6% at POD-1, 1,3, and 6 months in group A and B respectively, ($p > 0.05$)

¾ The incidence of numbness was 19.2% vs 12.5 ; 23% vs 25% ; 15.3% vs 20.8% ; and 11.5% vs 12.5% at POD-1,1,3, and 6 months in group A and B respectively, ($p > 0.05$) ¾ Thus showed the incidence of chronic groin pain is lower in ilioinguinal nerve excision (group B) compared to nerve preservation (group A). And no significant difference noted in neurosensory disturbances in either group. ¾ However the sample size and the follow up period in the current study is relatively short, A larger study sample and longer follow-up may be needed before any further conclusion can be made.

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