LONG TERM OUTCOME AFTER OPEN INGUINAL HERNIA REPAIR BY CONTINOUS SUTURE VERSUS INTERRUPTED SUTURE TO FIX THE MESH

Kuldeep Raj Sarangal[1], R.K. Goel[2], Ranendar Choudhary[3]

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ABSTRACT: BACKGROUND: Meshplasty for hernia repair is a must in adult patient. Prolene mesh is widely used and is fixed with prolene suture as well.The aim of this study was to compare the quality of life and pain felt in postoperative phase for 2 years after open inguinal hernia repair by interrupted sutures versus continuous sutures. **METHODS:** From Jan 2010 – Dec 2010, 15 patients were operated for hernia using prolene mesh and this mesh was fixed with prolene 2'0' in continuous waystarting at pubic tubercle and continued along inguinal ligament beyond deep inguinal ring, then lateral to deep inguinal ring, aboveit along conjoint tendon andending at the pubic tuberclewith only single knot. This type of repair was compared with 15 patients who underwent same procedure using prolene mesh fixed with prolene suture but in interrupted waywhich creates alot of knots (10-12Average).Patients were examined and followed up in OPD for 2 years. **RESULTS:** In the long run the patients treated with continuous suture had comparatively better quality of life with less pain and less foreign body sensation of mesh and knots & knots were not felt percutaneously,where as in routine procedure patients complained of painful sensation due to pressing of knots in subcutaneous space. **CONCLUSION:** In this study the quality of life in open hernia repair with prolene suture using continous suture technique versus interrupted suture technique is definitely better, less painful with feeling of less foreign body sensation.
KEYWORDS:-Meshplasty, inguinal hernia, chronic groin pain.

BACKGROUND: Inguinal hernia repair is commonly performed surgery. Surgery is done due to discomfort and requirement for jobs and in sportspersons as well as aesthetic reasons.Unfortunately post operatively many patients complain of pain at surgical site due to placement of nonabsorbableprolene mesh which is fixed by prolene suture as interrupted sutures and average 10-12 knots are applied to fix the mesh. And these sutures lead to reduced mobility of abdominal wall above mesh which leads to chronic pain. Hence we decided to reduce the no. of knots by fixing the prolene mesh by continous sutures and only knot was applied at pubic tubercle and this leads to reduced pain. The purpose of this study was to assess the quality of life and pain free life after surgery compared to interrupted sutures.

METHODS :23 patients of inguinal hernia were operated with proleneMeshplasty using proleneinterrupted sutures and 18 patients were operated with proleneMeshplasty and prolenecontinoussutures between January 2010 – dec 2010 but unfortunately 15 patients of studygroup could be followed up to 2 yearshence 15 patients of control group were involved. Only inguinal hernia patients were included in the study.

The surgical technique was standard incision, hernia sac resection and facial plication if required and prolene mesh was placed behind spermatic cord and in between inguinal ligament and

conjoint tendon and then fixed by 2 '0' prolene suture starting from pubic tubercle and the inguinal ligament up to beyond deep ring in continuous way and then taking the same thread to the margins of mesh laterally & above deep inguinal ring to conjoint tendon and tying it back at pubic tubercle. The external oblique was closed by prolene in continous way. The patients were asked to follow in OPD in 6 month, 1, 2 year postoperatively and the patients were assessed for quality of life after surgery in both techniques. The follow up was completed in 15 patients of study group hence 15 patients of control group was taken.

LIFE QUALITY: SF 36 multidimensional questionnaire was used which composed of 36 questions to determine quality of life and this consists of 1.Physical functions(10 items)2.Role limitation due to physical functions role (4 items).3.Bodypain (2 items)4 General health (5 items)5.Vitality (4 items) 6.Socialfunction (2 items)7.Role limitation due to emotional function (3 items) 8.Mental health (5 items).The result measure from 0- 100.

		6 MONTHS		1YEAR		2 YEAR	
S No		TEST	CONTROL	TEST	CONTROL	TEST	CONTROL
1	General functioning	65.33	33.33	93.66	67.66	100	81
2	Role limitation to physical health	100	0	95	68.33	100	86.66
3	Role limitation to emotional health	100	0	100	53.33	100	48.8
4	Energy/fatigue	69.6	34.3	94.6	46.46	93.66	69
5	Emotional well being	70.13	33.96	94.13	53.33	92.8	71.2
6	Social functioning	63.3	24.1	90.83	49.16	97.5	75.83
7	Pain	72.3	26.3	89.66	44.5	96.33	47.33
8	General health	65.33	37.33	86.66	51	94	69.66

Comparison of means between test & control

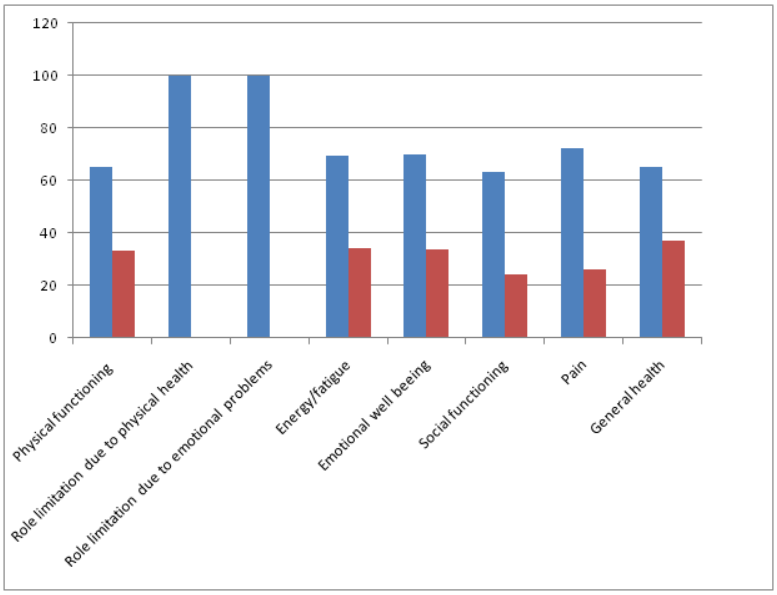

FIGURE 1: SIX MONTHS AFTER SURGERY

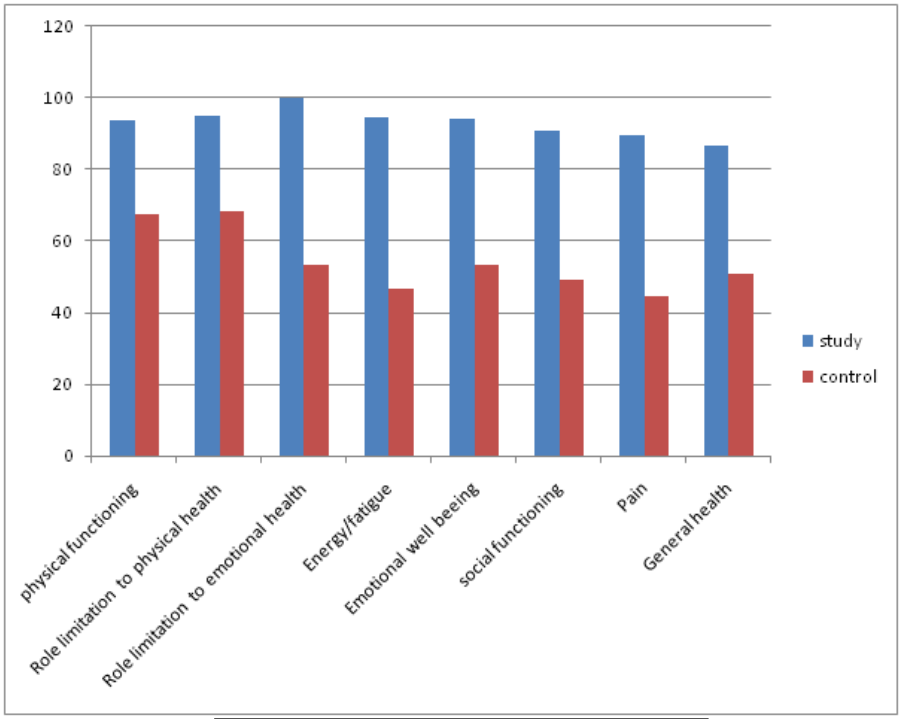

FIGURE 2: 1 YEAR AFTER SURGERY

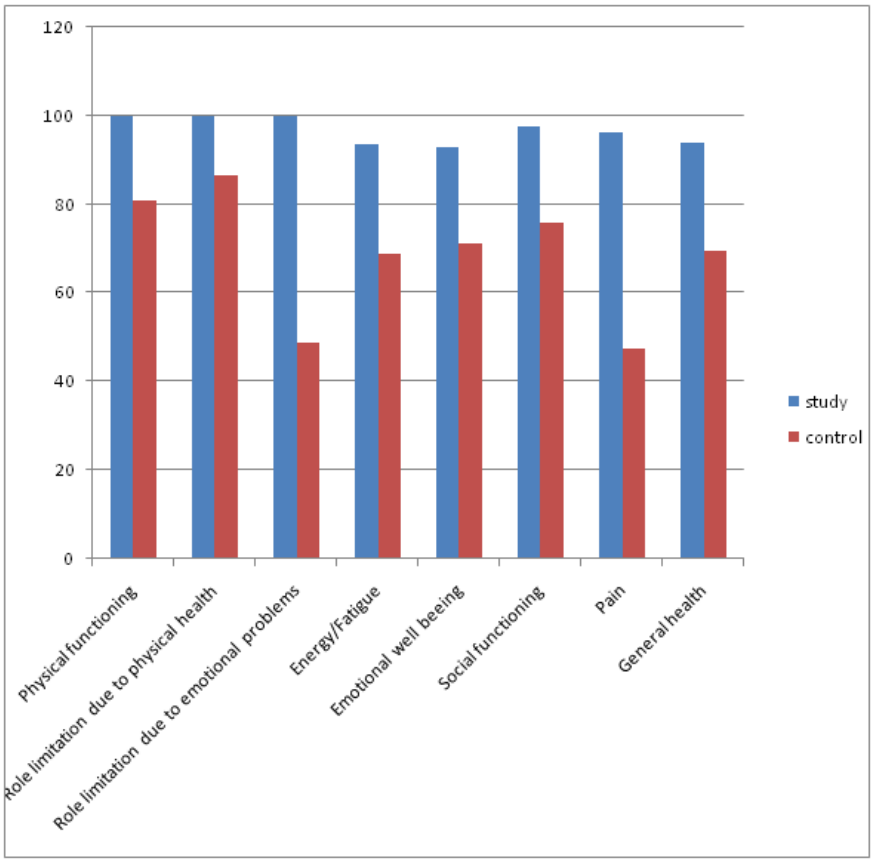

FIGURE 3: 2 YEAR AFTER SURGERY

STATISTICALANALYSIS:calculated as means.

RESULTS:15 patients in study(with mean age 46 years,Range 20-65years) were operated with continuous suture fixation of prolene mesh from Jan 2010 – Dec 2010.15 patients were operated in interrupted suture by prolene 2 '0' (with mean age of 44 years, Range 20-65 years).

	Study Group	control Group
O Ttime	49+/-8	60+/-7
Hospital stay	3+/-.75	4.6+/-1

Data is presented as mean +/- standard deviation

The physical health & emotional status of study group improved within 6 months after surgery whereas control group took more than 2 years. General functioning of study group comes to normal in 1-2 years whereas control group took more than 2 years. The study group patients were feeling energetic & less fatigue within 1 year whereas control group took longer than 2 years. Emotionally study group was strong at around 1 year but control group took more than 2 years.

The biggest factor in study group was feeling less pain in almost 96% patients whereas in control group even after 2 years only 47% patients were pain free & rest were suffering of pain at surgical site.

Overall general health of study group was good in 86% patients at 1 year whereas in control group it was 51% only.After 2 years 94% patients of study group were in good general health in comparison to 69% patients of control group.

LONG TERM FOLLOW UP: The follow up was done completely in 30 patients up to 2 years. Only 2 patients of study group presented with pain at incision site with feeling of foreign body sensation while movement and walking at (2 and 4 months) whereasout of control group 11 patients presented with postoperative pain, foreign body sensation and feeling under the skin due to mesh as well as knots of prolene suture especially in low BMI patients. 3 patients developed stiff abdomen at 8 months. USG of these patients were done to see any collection, abscess.

DISCUSSION: The prolene mesh and prolene suture material is widely used in hernia repair. This material elicits desmaplastic reaction in tissue, with initial serous exudation and formation of a sheet of scar in which mesh and suture is used as a scaffold for its formation. This process of mesh integration process and extent of scar tissue are regulated by amount and size of incorporation due to high amount of foreign material can increase up to 90%.

The use of prolene mesh with interrupted sutures leads to impairmentof abdominal wall mobility and majority patients develop reduced flexibility of abdominal wall and chronic pain impacts most of daily activitiesand quality of life. The aim of this study was to assess whether reducing the no. of knots has an impact on chronic pain and quality of life in long term.

The study has some limitations, first of all the study group is small and due to long term follow-up dropout rate was high. Secondly2 year follow up is very short period as patient's symptoms do not change significantly within 2 years postoperatively.

CONCLUSION: It is advisable to start using continous way of fixing the prolene mesh instead of interrupted sutures to reduce the no. of knots for pain free life after surgery.

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ORIGINAL ARTICLE

AUTHORS:

1. Kuldeep Raj Sarangal
2. R.K. Goel
3. RanendarChoudhary

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of General Surgery, S.G.T. Medical College, Budhera, Gurgaon, Haryana, India.
2. Assistant Professor, Department of General Surgery, S.G.T. Medical College, Budhera, Gurgaon, Haryana, India.
3. Professor, Department of General Surgery, S.G.T. Medical College, Budhera, Gurgaon, Haryana, India.

NAME ADRRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Kuldeep Raj Sarangal,
47, Second Floor, Harsh Vihar,
Pitampura, New Delhi.
Email –drkuldeepraj@yahoo.com

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