Sutureless Hernioplasty Vs. Lichtenstein Hernioplasty Comparative Study

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الخلاصة:

خلال الفترة من شباط ٢٠٠١ إلى تشرين الأول٢٠٠٦ تمت دراسة مئتي مرض شكون من الفتق المغبني غ.ر المباشر في مستشفى بغداد التعلمي ومستشفى الدوانة التعلمي، عن طرق إجراء عملة رتق أو رافة الفتق بدون تثبت الشبكة، لتقم منافع وأضرار هذ الطرقة من معالجة الفتوق المغبنة، تمت مقارنتهم بمئة مرض عواجوا بطرقة رتق أو رافة لكتنشتا ن والتي تتطلب تثبت الشبكة بخوط صناعة غ.ر قابلة للامتصاص أو التحلل، تمت دراسة وتقم عدة مقاس وهي الوقت اللازم لإجراء العملة حث وجد أنه أقل بسبع دقائق ونصف كمعدل من مجموعة المقارنة. وأظهرت الدراسة أ ضا أنّ معدل إلتهاب الجرح بعد العملة أقل بثلاث مرات من مجموعة المقارنة. الشعور بالألم بعد العملة تمت دراسته أ ضنًا، ووجد تحسس الألم هو طفيف في نسبة كبرة ٧٠ % من مرضى الدراسة، مقارنة بـ ٣٠% من المجموعة الأخرى. أظهرت الدراسة أنّ نسبة رجوع الفتق متطابقة في كلتا الطرقتن، ووجد أ ضنًا أنّ نسبة تورم كيس الصفن الشديد بعد العملة هو ٦.٥ %، بالمقارنة مع ٢١% من المجموعة الأخرى. لذلك نجد أن طرقة عدم تثبت الشبكة هي طرقة ملائمة نظرًا لعدم وجود تغير في نسبة رجوع الفتق وانخفاض نسبة بعض المضاعفات.

Summery:

During the period from February 2001 till October 2006 two hundred patients with an indirect inguinal hernia who attend Baghdad teaching hospital and al-Diwaniya teaching hospital were managed by sutureless hernioplasty which entail repair of posterior inguinal wall "Transversalis fascia" using a patch of polypropylene mesh without fixing it to the surrounding ligaments or aponeurotie structures, to evaluate the advantages and disadvantages of this method of repair by comparing it with one hundred patients as a control group who were managed by conventional Lichtenstein repair which entails fixation of the mesh by interrupted synthetic non absorbable suture. Several parameters were evaluated in the study including operative time which is found to be 7.5 min on average less than the control group. Post operative wound infection was individually evaluated and was found to be approximately three times less frequent in suture less method.

Post operative pain was also evaluated and appeared to be mild in the majority " 70% of patients in the study group as compared to 30% in the control group.

The rate of hernia recurrence during 1 year follow up was identical in both methods of repair. Post operative large scrotal swelling was also evaluated which is found in 6.5% of patients which suture less hernioplasty as compared with the control group 15 which the rate was 21%. So sutuerless method is proper method due to it's low recurrence rate and possible less complication rate.

Aim of the study: To asses the efficacy of structure less hernioplasty for indirect inguinal hernia in male patients as compare with the standard Lichtenstein hernioplasty.

Introduction:

Indirect inguinal hernia are common health problems, with accepted estimated incidence of 3-4% in male population.(1) The object of hernia repair is to prevent peritoneal protrusion, through the myopectineal orifice.(1-4) The integrity myopectineal orifice is restored by two different ways: aponeurotic closure or replacement of defective transversal's fascia with synthetic prostheses.(1-3) We are concerning with anterior repair by inguinal incision using the method of anterior prosthetic grain hernioplasty or tension free hernioplasty which was coined by Lichtenstein to describe his prosthetic hernioplasty a technique which consist of a swatch of polypropylene mesh 8-16cm with part way slit on it's upper edge to accumulate the spermatic cord and fashioned for the patient., the mesh is sutured circumferentially to the internal oblique abdominal muscle, the rectus sheat and shelving edge of inguinal ligament with or without mesh plug which is cylindrical and made from 2-2.5cm strip of polypropylene mesh. The plug is fixed firmly and sutured flush in place with non absorbable synthetic sutures.

The suture less hernioplasty 8 "non fixation" which primarily described by Gilbat who describe a procedure of prosthetic hernioplasty using a cone shaped plug fashioned from polypropylene mesh approximately 6*6cm which passed through the deep incompetent ring. The unfixed plug is reinforced with a patch of mesh with size and shape similar to that of Lichtenstein repair but without fixation.

The Tension free hernioplasties are tolerant of Technical Leeway.(1,2,8,9)

The Tensions free sutureless hernioplasties are especially appropriate for old men.(8)

They are usually not needed in woman with primary indirect inguinal hernias as simple obliteration of the deep ring always produce excellent results.(1,2,3,4,7,9)

Wide spread enthusiasm for tension free hernioplasty has been developed because they are easy to perform.(1) Furthermore suture less hernioplasty with it's added simplicity, durability, quick recovery(8) with comparable results to that of mesh fixation which is the prospect of study.

Patient and method:

From February 2001 till October 2006 two hundred male patients of different age groups attending Baghdad teaching hospital and alDiwaniya teaching hospital whose suffered from primary indirect "oblique" inguinal hernia were managed by sutureless tension free hernioplasty.

Another one hundred patients similarly of different age groups with primary indirect inguinal hernia were managed by the standard Lichtenstein tension free where selected as control group.

Method: Following a preoperative evaluation all patients were subjected to surgery using the conventional inguinal incision used for most inguinal hernia repair exposing the external oblique aponesurosis which is slit along the direction of it's fibers thus exposing the inguinal canal and its content.

The ileoinguinal nerve was always identified are safe guarded. The standard herniotonny done by identifying the sale which is dissected free transfixed. ligated and excised.

Two methods of repair was adopted in the control group (100) patients the classical Lichtenstein tension free hernioplasty was done utilizing a piece of polypropylene mesh 16*8cm which is fixed to strength the transversal's fascia by 8 stitches, to the inguinal conjoined tendon and rectus sheat and pubic tubercle a small slit is made on the upper border so that the two arms encircle the spermatic cord around the internal ring which are fixed by nonabsorbles suture.(9,10)

The internal ring management was tailored to the individual patient ie patulous ring is further reinforced by a mesh plug m, a roll or umbrella of polypropylene mesh in firmly suture to the wide internal ring.(9,10)

In the study group a similar technique was adopted, a mesh of similar size is laid over the transversals fascia, the lower edge in rolled over the shelving edge of inguinal ligament, the two arms of the upper slit in the mesh, was again rolled behind the spermatic cord, the mesh was left in place without adding sutures to fix it to the surroundings. The internal ring was managed by mesh plug in selected patients again with fixation.(1,2,8)

In all patients the operation was completed by repairing the external oblique apaneurosis leaving a new superficial ring.

All patients were followed up for one year post operatively.

Five parameters were assessed including operative time, rate of post operative wound infection, post operative pain, post operative large scrotal edema and rate of hernia recurrence.

Results:

Table (1): Demonstrate the incidence of post operative wound infection in the study group in whom the infection rate was 6% as compared to the control group in whom the rate was 19%.

There is no significant statistical deference in the incidence of post operative wound infection in both groups.

Study groups	Post, op. wound infection					
	Positive		Negative		Total	
Suture less	N	%	N	%	N	%
	12	6	189	94	200	100
Fixation "reference"	19	19	81	81	100	100
OR = P Value	0.2 N.S.					

Table (2): Demonstrate the actual and average operative time in (min) spend during surgery only 7.5 minutes on average has been gained while during the suture less hernioplasty

Type of repair	Time in min.	Average
Suture less	15-25min.	20
Fixation	20-25min	27.5

Table (3): Demonstrate the rate of hernia recurrence during 1 year follow up. No difference was in the rate of reoccurrence since the rate was found to be 1% for both types for repair.

Study group	Recurrence rate					
	Positive		Negative			
	N	%	N	%	N	%
Suture less	2	1	198	99	200	100
Fixation references	1	1	99	99	100	100
OR = 1 P Value N. S						

Table (4): Shows the incidence of large scrotal swelling (edema) in both Types of repair. The rate found to be les in the studying group in whom the rate was 6.5% as compared to 21% in the control group, the difference was not statically significant.

Study group	Recurrence rate					
	Positive		Negative			
	N	%	N	%	N	%
Suture less	13	6.5	187	93.5	200	100
Fixation references	21	21	79	79	100	100
OR = 0. 1 P Value N. S						

Table (5): Demonstrate the pain severity assessment for both types of repair.

70% of patient with futureless method experience mild pain as compared to 30% in the control group.

Only 10% of patient with suture less method suffer from sever pain as compared to 30% 15th control group.

20% of patient in the study group experience moderate pain as compared to 40% in the control group.

Study group	Recurrence rate					
	Positive		Negative			
	N	%	N	%	N	%
Suture less	2	1	198	99	200	100
Fixation references	1	1	99	99	100	100
OR = 1 P Value N. S						

Mild pain: require simple oral analgesics.

Moderate pain: require 1 dose of injectable analgesia diclofence "voltaren".

Sever pain: require 2 doses of injectable analgesia or require narcotic analgesia.

Discussion:

As hernia is a common health problem many surgical repairs has been adopted. Some of these procedures has met with high recurrence rate.[5,11,12]

Depending on the fact that tissue tension during reconstruction of the Posterior inguinal wall "Transversalis fascia" is the major cause of hernia recurrence(5,11) many procedures have been developed to minimize or abolish tissue tension during repair the best of which is by using a synthetic non absorbable graft "mesh" utilized to strength the posterior inguinal wall and myopectineal orifice including the deep inguinal ring when it become incompetent(3,8,9,10) polypropylene mesh is the most popular are widely used synthetic graft.(1,2,8,9) Many surgeons however insist on fixing the mesh by interrupted sutures, using the Lichtenstein hernioplasty.(1,2)

Gilbert who is pioneer the sutureless hernioplasty discard the importance of fixation on the account that the strength posterior wall resulted from fibrotic process lay over the graft which gives the protection against further herination,(6,8) depending on this we designed our study to compare both methods on selected samples of patients with 200 patients where subjected to the study and 100 patients as a control group, only 7.5 minutes on average of operative time was gained by using the sutureless method which add no much difference on using this method. during one year of the post operative follow up.

Post operative wound infection although not statistically significant but still it is about 13% less in the suture less method which may be due to less operative manipulation, less suture material used and to lesser extent shorter operative time.

The incidence of post operative heavy uncomfortable large scrotal swelling was interestingly less in the suture less method 6.5% as compared to the 21% in the control group again it may be due to less operative manipulation although it has no statistically significant.

The post operative pain appeared to be less in the study group a s70% of patients experience mild pain and only 10% suffer from sever pain as compared to the control group in whom 30% have mild pain and 30% have sever pain. The difference may be due to less aggressive wound retraction needed in the suture less method as compared to the wound retraction needed for fixation of the mesh in the control group.

Rate of hernia recurrence was identical in both methods of repair which is 1% in this study thus omitting suturing or fixation of the mesh does not result in an increasing rate of recurrence, which may obviate the necessity for fixation.

Conclusion:

The suture less hernioplasty in a proper method for repair in selected male patients with indirect inguinal hernia with its low recurrence rate, together with its added simplicity and possible lower incidence of post operative pain and scrotal swelling.

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