

Quality of Life in Patients Undergoing Inguinal Hernia Repair: Non-Mesh Suture Repair vs. Lichtenstein Procedure

Inguinal Herni Onarımı Hastalarda Yaşam Kalitesi: Lichtenstein Yöntemi İle Meshsiz Yöntemlerin Karşılaştırılması

Bülent Ünal, Melih Karabeyoğlu, Demet Ünal, Betül Bozkurt, Osman Yıldırım, Belma Koçer, Mete Dolapçı, Ömer Cengiz

Ankara Numune Eğitim ve Hastanesi, 2. Cerrahi Kliniği

Background: Hernia repair is one of the most frequent procedures in surgery. The aim of this study is to compare Lichtenstein procedure and non-mesh suture repair of primary inguinal hernias with respect to quality of life.

Methods: Between August 2000 and December 2003, 70 patients scheduled for repair of a unilateral primary inguinal hernia were prospectively evaluated by Short Form 36 (SF-36) to assess quality of life after 6 months of operation. Registrars under supervision of consultants did all operations.

Results: Among 70 patients, 24 patients (34.2%) had undergone non-mesh suture repair and 46 patients (65.8%) had undergone Lichtenstein procedure. SF-36 questionnaire showed a significant difference in physical function, pain and global health parameters of the test in favour of the Lichtenstein procedure 6 months postoperatively.

Conclusion: We conclude that long-term quality of life following Lichtenstein procedure is superior to non-mesh suture repair in primary inguinal hernias.

Key Words: **Quality of life, hernia.**

Amaç: Fitik onarımı cerrahide en sık uygulanan ameliyatlardan biridir. Bu çalışmanın amacı primer inguinal fitiklarda Lichtenstein yöntemi ile yamasız onarımların yaşam kalitesine yansımaları bakımından karşılaştırılmasıdır.

Metod: Ağustos 2000- Aralık 2003 tarihleri arasında tek taraflı inguinal herni ameliyatı uygulanan 70 hasta, ameliyattan 6 ay sonra, yaşam kalitesini değerlendirebilmek için Short Form 36 (SF-36) formu kullanılarak prospektif olarak incelendi. Tüm ameliyatlar uzman hekimlerin kontrolü altında gerçekleştirildi.

Sonuçlar: 70 hastanın 24'üne (%34,2) yamasız onarım, 46'sına (%65,8) Lichtenstein ameliyatı uygulandı. Ameliyat sonrası 6. ayda, SF-36 skalasında fiziksel fonksiyon, ağrı ve genel sağlık parametreleri bakımından Lichtenstein ameliyatı uygulanan grupta anlamlı farklılıklar gözlemlendi.

Sonuç: Primer inguinal herni onarımları sonrası uzun dönemde, yaşam kalitesi bakımından Lichtenstein ameliyatı yamasız onarımlara oranla daha üstün bir yöntemdir.

Anahtar Kelimeler: **Yaşam kalitesi, fitik.**

Inguinal hernia repair is one of the most frequent procedures in surgery. Elective inguinal hernia repair is widely accepted procedure because it diminishes the risk of incarceration, which leads the higher rates of complications and probability of death (1). However the failure of inguinal hernia repair and chronic pain not only affects individual patients, but also

great impact on society. There are so many studies in the literature, which analyses the recurrence rates of different inguinal repair techniques (2,3,4). The aim of this study is to compare Lichtenstein procedure and non-mesh suture repair of primary inguinal hernias with respect to quality of life.

Received: 11.07.2007 • Accepted: 09.11.2007

Corresponding author

Bülent Ünal
İnönü Üniversitesi Tıp Fakültesi
Genel Cerrahi Kliniği, 44315 Malatya
Mobile : +90 (532) 525 44 55
Fax : +90 (422) 341 07 28
E-mail address : bulentunal2005@yahoo.com.tr

Patients and Methods

Between August 2000 and December 2003, 70 patients scheduled for repair of a unilateral primary inguinal hernia were prospectively evaluated by Short Form 36 (SF-36) to assess quality of life after 6 months of operation. Registrars under supervision of consultants performed all operations. According to the surgeons' choice, non-mesh suture repair (Shouldice procedure) was performed in 24 patients (34.2%) and Lichtenstein tension-free procedure was done in 46 patients (65.8%). Shouldice repair was performed according to the author's protocol, provided that 2/0 polypropylene sutures were used. Mesh repair was performed according to a strict protocol as described by Lichtenstein using a polypropylene prosthetic mesh (5,6). Patients were free to choose between general and local anaesthesia.

The SF-36 is a short questionnaire with 36 items to test eight elements of quality of life; physical function, social role, physical role, emotional role, mental health, vitality, pain and global health (7). All patients were examined for recurrence and SF-36 was administered for self-completion by patients after 6 months of operation.

The statistical analysis was carried out using SPSS 8.0 for Windows and *t* tests were used to compare the means of characteristics. $P < 0.05$ was considered significant.

Results

There were no intraoperative complications. Postoperative complications consisted of seroma in five patients. At the six months' follow-

up, no recurrence was detected.

Table 1 presents the median scores for all eight elements of SF-36. Six months after operation statistically significant differences were noted between the mean scores in the Lichtenstein and non-mesh suture repair groups in the elements of physical function (91.5 vs 76.0 $P=0.00$), pain (91.7 vs 73.7 $P=0.041$) and global health (87.8 vs 64.6 $P=0.00$). These results show that Lichtenstein procedure in primary inguinal hernia improved patient-perceived health status in the areas of physical function, pain and global health.

Discussion

Inguinal hernia repair performed by suturing may lead to excessive tension on the suture line and surrounding tissue. The use of prosthetic mesh allows tension-free repair of inguinal hernia. There are many studies in the literature which compare the recurrence rates of the two major techniques but little quantitative data exist comparing the quality of life of patients operated on using different techniques (8, 9, 10).

Lichtenstein procedure was proven to provide low recurrence rates in primary inguinal hernia repair (11). Shouldice technique is a well-known procedure with low recurrence rates among classical non-mesh suture repair techniques. We aimed to compare both techniques to assess their effects on patient-perceived health status. We have chosen SF-36 questionnaire to compare quality of life outcomes because it is a well validated and widely used generic health-status instrument. It's showed that the SF-36 score is a good measure of quality of life in patients with inguinal hernia (10).

Horzic and colleagues (12) demonstrated that using anterior rectus sheath for inguinal hernia repair, significantly better than traditional mesh repair in postoperative scores for physical function and role physical scores. But there was no group that consist of use non-mesh techniques in this study. As a similar there was no significant difference in quality of life between laparoscopic transabdominal preperitoneal hernioplasty, Shouldice and Bassini in the a multicenter trial by Pokorny and colleagues (9). Postoperative pain was less short-time in mesh reaire group in this study.

Table 1- The scores of SF-36 for primary inguinal hernia operations using Lichtenstein and non-mesh repair techniques

| | Lichtenstein | Shouldice | P value |
|-------------------|--------------|-----------|---------|
| Physical function | 91.5 | 76.0 | 0.00 |
| Pain | 91.7 | 73.7 | 0.04 |
| Vitality | 77.8 | 58.8 | 0.42 |
| Social role | 86.9 | 66.1 | 0.41 |
| Physical role | 89.1 | 83.3 | 0.25 |
| Emotional role | 84.8 | 58.0 | 0.37 |
| Global health | 87.8 | 64.6 | 0.00 |
| Mental health | 81.1 | 62.2 | 0.68 |

Although in a study by Vrijland and colleagues (13), quality of life evaluation showed no differences between the non-mesh and mesh repair of primary inguinal hernia groups, our results indicate that

primary hernia repair by the Lichtenstein procedure to inguinal hernia does lead to health status outcomes that tend to be superior to the Shouldice technique in the areas of physical function, pain

and global health. Therefore, we think that mesh repair is still the best method for inguinal hernia repair.

REFERENCES

- Gallegos NC, Davson J, Jarvis M, *et al.* Risk of strangulation in groin hernias. *Br J Surg* 1991; 78: 1171-3.
- Barth RJ Jr, Burchard KW, Tosteson A, Sutton JE Jr, *et al.* Short-term outcome after mesh or Shouldice herniorrhaphy: a randomized, prospective study. *Surgery* 1998; 123: 121-6.
- McGillicuddy JE. Prospective randomized comparison of the Shouldice and Lichtenstein hernia repair procedures. *Arch Surg* 1998; 133: 974-8.
- Beets GL, Oosterhuis KJ, Go PM, *et al.* Longterm followup (12-15 years) of a randomized controlled trial comparing Bassini-Stetten, Shouldice, and high ligation with narrowing of the internal ring for primary inguinal hernia repair. *J Am Coll Surg* 1997; 185: 352-7.
- Lichtenstein IL, Shulman AG. Ambulatory outpatient hernia surgery. Including a new concept: introducing tension-free repair. *Int Surg* 1986; 71: 1-4.
- Lichtenstein IL, Shulman AG, Amid PK, *et al.* The tension-free hernioplasty. *Am J Surg* 1989; 157: 188-193.
- Brazier JE, Harper R, Jones NMB, *et al.* Validating the SF-36 health survey questionnaire: new outcome measure for primary care. *BMJ* 1992; 305: 160-4.
- Koc M, Aslar AK, Yoldas O, Ertan T, Kilic M, *et al.* Comparison of quality of life outcomes of Stoppa vs bilateral Lichtenstein procedure. *Hernia* 2004; 8(1): 53-55.
- Pokorny H, Klingler A, Scheyer M, *Fet al.* Postoperatif pain and quality of life after laoaroscopik and open inguinal hernia repair: results of a prospective randomized trial. *Hernia* 2006; 10(4): 331-7.
- Marthur S, Bartlett AS, Gilkison W, *et al.* Quality of life assessment in patients with inguinal hernia. *ANZ J Surg* 2006; 76 (6): 491-3.
- Janu PG, Sellers KD, Mangiante EC. Mesh inguinal herniorrhaphy: a ten-year review. *Am Surg* 1997; 63: 1065-9.
- Horzic M, Kopljar M, Cupurdija K, *et al.* Quality of life changes after inguinal hernia repair, using anterior rectus sheath- a preliminary study. *Coll Antropol* 2006; 30 (2): 349-53.
- Vrijland WW, van del Tol MP, Luijendijk RW, *et al.* Randomized clinical trial of non-mesh versus mesh repair of primary inguinal hernia. *Br J Surg* 2002; 89: 293-7.