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Research Article

Does inguinal hernia repair have an effect on sexual functions?

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Abstract

Aim: The aim of this study is to evaluate sexual functions which emerge due to inguinal hernia and may change after hernia surgery.

Material and Methods: A total of 47 patients who had Lichtenstein tension-free anterior repair and inguinal hernia surgery were evaluated for erectile function, intercourse function, sexual desire, overall satisfaction, and orgasmic satisfaction condition with International Index of Erectile function questionnaire (IIEF) scoring system before the surgery and in the first and sixth months after surgery. Parameters evaluated with IIEF score before the surgery and in the first and sixth months after surgery were compared statistically using Wilcoxon test.

Results: Average age of 47 patients was measured 46,2±11,2 years (range: 22-67). It was determined that all scores apart from sexual desire (p=0,08) significantly increased in postoperative first and sixth months compared to the preoperative period. It was measured that preoperative sexual desire score increased significantly in postoperative sixth month (p<0.001). A significant score was detected when all scores in postoperative sixth month were compared to postoperative first month.

Conclusion: Inguinal hernia surgery positively effects sexual functions compared to preoperative period. The addition of recovery in sexual parameters to the benefits of removing hernia and presence of no significant postoperative complications shows that this surgery can be made in a safe and useful way.

INTRODUCTION

Inguinal hernia operations are one of the most common surgical operations are performed by surgeons. Inguinal area hernias are five times more common in males. Inguinal and femoral hernia operations are the most common surgical operations in United States of America with nearly 800.000 cases in a year [1-3]. Techniques used in Hernia Surgery started as simple tissue repairs and today open or laparoscopic tension-free mesh repairs are the surgical procedures preferred most commonly [1,4].

Postoperative sexual function is even more impressing because the operation is performed in the inguinal region close to testicular structures and nerves, which are important for sexual function. Furthermore, modern, so called tension free techniques, of hernia repair are based on the implantation of a mesh to reinforce the inguinal floor. The first results of a prospective study of the Department of General Surgery Charité, Campus Mitte, showed no significant influence of the hernia repair with mesh on sexual function for at least 3 months postoperatively. Meanwhile, the implanted mesh can cause long-term tissue induration or even shrink as part of a chronic foreign tissue reaction and affect sexual function in this way. Presence of hernia before surgery may negatively effect sexual activity due to pain and cosmetic concerns too. Although many studies have been made on the efficiency of inguinal hernia surgeries, their effects on quality of life, and the differences between the techniques, there are several studies for evaluating sexual activity [5-8].

The aim of this study is to evaluate sexual functions emerging due to inguinal hernia and which may change after hernia surgery.

MATERIAL AND METHODS

A total of 47 patients who had inguinal hernia surgery with Lichtenstein tension-free anterior repair were included in the study. Patients under 20 years of age who were not sexually

active and had secondary hernia surgery were not included in the study. We didn't include to study lararoscopic repair cause of being different operating tecnique than open tension free repair and also to be limited of our cases . Using International Index of Erectile function questionnaire (IIEF) scoring system (Table 1) consisting of 15 questions before surgery and in the first and sixth months after surgery, erectile function (6 questions), intercourse function (3 questions), sexual desire (2 questions), overall satisfaction (2 questions) and orgasmic satisfaction (2 questions) condition were evaluated.

SURGICAL TECHNIQUE

Anterior Repair (Lichtenstein technique)

Subcutaneous fat tissue, camper and scarpa fascia were opened along the incision line after 5-7 cm incision in inguinal area. External oblique muscle aponeurosis was considered and preserving ilioinguinal nerve, aponeurosis was opened, external ring was damaged and inguinal channel was entered. Preserving the iliohipogastric nerve, external oblique muscle aponeurosis was stripped up to inguinal ligamant below and above. Spermatic cord was suspended with penrose drain together with genitofemoral nerve and spermatic veins. Hernia sac was found by separating creamaster muscle fibres and one of inversion, resection and ligation methods was applied. In seventeen patients posterior wall defect was repaired with polypropilen sutures. Later a 6x11cm polypropylene mesh was located in order to form a new internal ring and was stabilized to the inguinal ligaman in the inferior, pubis in the medial and internal oblique muscle aponeurosis in the superior. After that, the positions of spermatic cord and testicles were controlled and the layers were closed in the anatomical plan.

STATISTICAL ANALYSIS

Parameters evaluated with IIEF score before the surgery and in the first and sixth months after surgery were compared statistically using Wilcoxon test. Values with $p<0.05$ were accepted as statistically meaningful. Statistical evaluation of data was made with SPSS 22 for Windows.

RESULTS

Average age of 47 patients included in the study was 46,2±11,2 years (range: 22-67). Average operation duration was measured 42,23 min (range: 26-71) 30 patients (63.8%) were indirect inguinal hernias (Nyhus type 1-2), 4 (8.5%) direct (Nyhus type 3A) and 13 (27.6%) combined direct and indirect inguinal hernias (Nyhus type 3B). 6 patients had bilateral inguinal hernia, 4 of them were Nyhus type 3B and 2 were type 1-2. No local complications were observed in any patient after operation. 40 patients (85.1%) mentioned preoperative sexual dysfunction related to symptoms of the groin hernia. None of them had severe degree erectile disfunction. 9 of patients had moderate and other 31 patients had low degree erectile disfunction. This six of nine patients had bilateral inguinal hernia. The surgical repair had a positive influence on the sexual function. After hernia repair all patients' sexual function came to well without surgical revision or medical treatment in an average period of 6 months. When erectile function, intercourse function, overall satisfaction, orgasmic satisfaction scores evaluated before inguinal hernia operation were compared to the scores in postoperative first month ($p<0.001$, $p=0.001$, $p<0.001$ and $p<0.001$ respectively) and sixth month ($p<0.001$, $p<0.001$, $p<0.001$ and $p<0.001$ respectively), a statistically significant increase was detected. When sexual desire score in preoperative period was compared to the score in postoperative first month, no statistically significant increase ($p=0.008$) was detected, but there was a significant increase in postoperative sixth month ($p< 0.001$). When compared to postoperative first month and 6th month scores, a statistically significant increase in erectile function, intercourse function, overall satisfaction, sexual desire, orgasmic satisfaction scores was detected. ($p<0.001$, $p<0.001$, $p=0.001$, $p<0.001$ and $p<0.001$ respectively) . Average scores and statistical values on areas related to IIEF scores are available in table 2.

DISCUSSION

Presence of inguinal hernia and application of hernia surgery may change sexual activity. Inguinal hernia related pain and cosmetic concern like scrotal hernia may negatively effect sexual activity. The findings may be observed more commonly in especially chronic and scrotum effecting hernias [7,8]. Since spermatic cord, testicle and scrotal formations may be effected in inguinal hernia surgery, hernia surgery may also change sexual

Table 1: IIEF questionnaire.

Main Domains	Questions	Score Range	Min.-Max. Score
Erectile function	Q1. Frequency of getting erections during sexual activity? Q2. Erections hard enough for penetration after sexual stimulation? Q3. Frequency of penetration? Q4. Frequency of maintaining an erection after penetration? Q5. Ability to maintain an erection until completion of intercourse? Q15. Rate of confidence to get and maintain erections?	0-5 1-5	1-30
Intercourse function	Q6. Frequency of attempts of sexual intercourse? Q7. Intercourse satisfaction for the patient? Q8. Enjoyment of sexual intercourse?	0-5	0-15
Orgasmic satisfaction	Q9. Frequency of ejaculation after sexual intercourse or stimulation? Q10. Frequency of orgasm with intercourse or stimulation?	0-5	0-10
Sexual desire	Q11. Frequency of sexual desire? Q12. Rate of level of sexual desire?	1-5	2-10
Overall satisfaction	Q13. Satisfaction with overall sex life? Q14. Satisfaction with sexual relationship with the partner?	1-5	2-10

Table 2: Average scores and statistical values of areas related to IIEF scores.

Evaluated area	Pre-op average score	Post-operative 1th month average score	Post-operative 6th month average score	Preop-postop 1st month p value	Preop-postop 6th month p value	Post-op. first month-postop 6th month p value
Erectile function	19,87±3,85	21,6±3,76	23,86±4,1	p<0.001	p<0.001	p<0.001
Intercourse function	9,29±2,25	9,59±2,10	11,06±1,5	p=0.001	p<0.001	p<0.001
Orgasmic satisfaction	7,59±1,1	8,17±1,12	8,74±1,13	p<0.001	p<0.001	p<0.001
Sexual desire	7,02±1,24	7,23±1,10	8,14±0,95	p=0.08	p<0.001	p<0.001
Overall satisfaction	7,4±1,05	8,14±1,04	8,6±1,05	p<0.001	p<0.001	p=0.001

activity. A direct injury of the spermatic cord or its components (ductus deferens or pampiniform plexus of veins) can cause reversible (hematoma, seroma or orchitis) or irreversible testicular damage (atrophy or oligospermia). Operative trauma can lead to tissue or nerve injury (ilioinguinal, iliohypogastric nerves or ramus genitalis of genitofemoral nerve) leading to hypoesthesia or other neurological symptoms.

The implanted mesh can also cause long-term tissue induration or even shrink as part of a chronic foreign tissue reaction and affect sexual function. This local tissue enduration can affect nerves and other anatomical structures of importance (ductus deferens) [6-9]. Presence of resistive orchialgia cases emerging secondary to inguinal hernia was reported in [10]. It is obvious that sexual activity would be effected negatively in especially these patients.

Ertan et al prospectively investigated 34 patients with scrotal hernia in terms of sexual function before and 3 months after hernia repair by using the International Index of Erectile Function (IIEF They reported that there was a significant recovery in IIEF scores after scrotal tension free hernia repair and sexual activity was positively affected after the operation [11]. In contrast to our patients they had huge scrotal hernia conversely. But their sexual activity was influenced positively. In another study, it was reported that pain and quality of life parameters improved in the third month after inguinal hernia operation too [12]. Mathur et al evaluated quality of life in patients with hernia waiting for operation and defined that deterioration in hernia-related quality of life was more than the control group and the deterioration was more in the quality of life in people working in unsedentary jobs [13]. Zieren et al. made a study including two hundred twenty four patients and investigated the effect of operation on sexual functions after inguinal hernia operation and evaluated patients in preoperative and postoperative third and sixth months. hey showed that in patients who had sexual function disorder, there was recovery in sexual functions after the operation and on the contrary, the operation had no significant effect on the patients with preoperative normal sexual life [14]. El-Awady et al. evaluated sexual functions of 40 patients who had tension-free inguinal hernioplasty in postoperative third and ninth months with IIEF and stated that there was recovery in all sexual function parameters after the operation apart from orgasm [5]. Jangjoo et al. evaluated 50 patients before inguinal hernia operation and in the first and six months after the operation and a significant decrease was detected in IIEF scores in the first month compared to preoperative and 6th month values. It was reported that this was due to using a wider incision and a bigger mesh in hernioplasty technique and lengthening of pain due to secondary inflammation increase and the situation improved in the sixth month [7]. The results of these studies except the study by Aasvang et al were all indicated improvement of sexual function after hernioplasty which was different from our results. Aasvang et al reported that after recurrent hernia operations, sexual activity secondary to testicular pain increasing with sexual activity and ejaculation was affected negatively. This condition was connected to the increase in reoperation related pain level [15]. Bulus et all investigated the effects of perimesh fibrosis and edema on testicular arterial flow and sexual function following lichtenstein tension-free mesh repair. They found that hernia repair didn't have any negative effects on sexual activity [16].

In line with literature, in our study; it was detected that there was recovery on sexual parameters after hernia rapair too. The reason for having no increase in sexual desire in postoperative first month is connected to the presence of surgery related symptoms in postoperative period. Lack of postoperative symptomatic findings in 6th month describes the increase in scores in the sixth month compared to the first month. Since our patient profile consisted of sexually active patients, there were no post-operative complications in the patients, and patients who had second inguinal operations were not included in the study, we think that the results were positively effected. Improvement on the sexual activity is markedly significant in 6 of patients who have bilateral inguinal hernia and middle degree erectil disfunction in the preoperative term evaluation. When patients were asked about the reason for the recovery in sexual functions in the postoperative 6th month, 36,1% stated that this was due to the disappeareance of cosmetic concerns (such as hernia related bloating and operation scar) and 75% pain. We think that this finding is important since it shows that patients substantially care about cosmetic concerns and doesn't have a statistical meaning since it is a subjective comment. We also think that pain is more important. Due to having pain during sexual activity can affect satisfying. Also, unlike we think existence of hernia is more effective than surgery on the sexual activity. The patients with no preoperative complaints were not negatively influenced by the surgery as far as their sexual life was concerned. This may be evidence of benefit of surgery. But we think that studies including more patients who have complication after operation and in which different hernia types are compared are needed.

CONCLUSION

Symptoms specifically associated with inguinal hernias,

such as groin bulge or pain, can lead to limitations of a patient's sexual life. Inguinal hernia surgery positively effects sexual functions compared to preoperative period. This effect is more significant in the late period. This study shows that there may be post operation recovery in patients who have a decrease in sexual performance related to especially inguinal hernia. The implantation of the mesh for groin hernia repair did not affect sexual function. The addition of recovery in sexual parameters to the benefits of removing hernia and presence of no significant postoperative complications shows that this surgery can be made with safely. However, other studies taking into account the role of the partner in a balanced sexual life, as well as the different surgical approaches of surgical inguinal hernia repair, have to be conducted in order to gain more complete information on the several aspects of this subject.

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