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A COMPARATIVE STUDY OF QUALITY OF LIFE AFTER TAPP AND OPEN INGUINAL HERNIA REPAIR

General Surgery

Dr. Neeraj Kumar Banoria Associate Professor, Department of Surgery, Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh.

Dr. Satyendra Kumar Assistant Professor, Department of Surgery, Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh.

Dr. Paras Deep Singh* Junior Resident, Department of Surgery, Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh.*Corresponding Author

Dr. Amit Mohan Varshney Assistant Professor, Department of SPM, Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh.

ABSTRACT

Aim: The aim of this study will be to compare between post operative HRQOL data of patients undergoing TAPP and OPEN inguinal hernia repair on basis of short form 36 (SF-36) questionnaire.

Material and Method: The study will be conducted on 30 cases of TAPP repair for inguinal hernia compare with 30 cases of OPEN hernia repair in Maharani Laxmi Bai Medical College, Jhansi between November 2018 to June 2020.

Results: In our study mean age of patient undergoing TAPP hernia repair is 38.67±15.546 maximum number belong to age 18-30 years 13 patients (43.33%). Quality of life for whole group improved significantly in five out of eight scales of SF-36 questionnaire in TAPP technique in comparison to OPEN technique physical functioning (p value=0.0001), role physical (p value=0.0183), bodily pain (p value=0.0026), vitality (p value=0.0001), general health (p value=0.0016). No significant difference in social functioning, mental health and role emotion.

Conclusion: No significant difference in Social functioning, Role emotional, Mental health after TAPP or hernia repair.

KEYWORDS

Laparoscopic hernia repair, TEP, TAPP, inguinal hernia

INTRODUCTION

Minimal access surgery has rapidly become established in many areas of general surgery. The laparoscopic approach to herniorrhaphy was first reported by Ger in 1991. After that, inguinal hernia surgery continued to evolve, with laparoscopic repair now becoming an alternative to OPEN surgery. The two most commonly performed laparoscopic techniques in herniorrhaphy are transabdominal preperitoneal (TAPP) and the total extraperitoneal approach . The advantages for TAPP repair are that the technique is simpler, with a large working space and good diagnostic tools; another advantage is that the learning curve is shorter in TAPP repair. Potential benefits of laparoscopic repair include a reduction in postoperative pain and a shortened recovery period. Although most studies of hernia repair include postoperative pain as an outcome measure, assessment of pain tends to be limited to the acute postoperative period. Pain after hernia surgery is significantly more common with the OPEN approach to the groin by Shouldice and Lichtenstein methods. Up to 11% of patients are claimed to be functionally impaired in work or leisure activities due to pain . The SF-36 questionnaire is considered an attractive method for assessing health-related quality of life because of its brevity, rigorous psychometric development, and patient acceptance.

Many surgical trials have focused on comparison of early postoperative outcome and the recurrence rate of laparoscopic and OPEN procedures. However, the priority of health care to assess and compare the outcomes of surgical interventions should be focused beyond traditional clinical outcomes to include the patient's perception of health-related quality of life. Possible benefits in terms of quality-of-life outcomes following TAPP repair are still in need of more evaluation and more study.

AIMS AND OBJECTIVES

- The aim of this study will be to compare between post operative HRQOL data of patients undergoing TAPP and OPEN inguinal hernia repair on basis of short form 36 (SF-36) questionnaire.
- The basement of the HRQOL is important in order to calculate treatment option and to improve the possibility of treatment the health care system and the public health system.

MATERIALS AND METHODS

1. Source of data:

The study will be conducted on 30 cases of TAPP repair for inguinal hernia compare with 30 cases of OPEN hernia repair in Maharani Laxmi Bai Medical College, Jhansi between November 2018 to June 2020.

2. Method of collection of data (including sampling procedure if any):

INCLUSION CRITERIA:

- Age >18 years and <70years.
- All patient who will be underwent TAPP and OPEN hernia repair.

EXCLUSION CRITERIA:

- Age <18 years and >70 years.
- All patient operated for other that TAPP and OPEN technique.

Study design: Prospective study

Study methods:

- The study will consists of patients fitting under my inclusion criteria.
- Patients will be administered the same antibiotics, analgesics during the hospital stay and postoperative period. All patients will be advised similar wound dressings.
- On discharge from the hospital, all patients will be on the similar antibiotics, analgesics, dietary and wound care advice.
- Demographic data, complications and complication will be recorded. The Quality of Life will be scored before operation and 4 weeks after according to :-

SF 36 HEALTH SURVEY:

The basis of this study is the quality of life analysis of the operated patients, using short form questionnaire (SF-36) developed from the RAND Corporation Medical Outcomes Study (RAND Health, Santa Monica, CA, USA) which was translated to Croatian language without the questions' meaning changes.

The SF-36 questionnaire is a standardized procedure for the assessment of health-related quality of life which analyzes 8 domains of quality of life:

1. Body function
2. Satisfaction of body and emotional roles
3. Social function
4. Pain

5. Psychological status
6. Vitality

The answers were categorized in the form of scores in the way recommended from RAND, transforming them into linear analogue scale where the score of 100 indicated the optimal health. After that, they were grouped into the domains. The SF-36 questionnaire was complemented with few questions about the complications or problems specific for inguinal hernia's procedures like: gastrointestinal disorders (adhesions), feeling of flatulence, urinary problems, sex problems and feeling pain in inguinal region during heavy weight which can be directly connected to hernia repair procedure of the patients. We also asked about the appearance of the recurrence. The questionnaire was sent by mail to the addresses of the patients with the accompanying letter, where we explained the kind of research and asked the patients to focus on the hernia repair procedure or, in other words, to connect the questions to inguinal hernia repair procedure.

STATISTICALANALYSIS:

The data were summarized as mean values with standard deviations (SD). The statistic analysis was performed using Student's t-test and chi square test. The SPSS 11.0 for Windows computer software (SPSS Inc., Chicago, IL) was used for statistic analysis. P value less than 0.05 was considered significant.

CONCLUSIONS

We can say that for $1m^3$M20 grade of concrete consumption of fine aggregate is 775.96 kg. Here in specimen M-3 we replace fine aggregate by 24.62 kg of crumb rubber for $1m^3$M20 grades of concrete. So, we can say that up to 15% foundry sand utilized for economical and sustainable development of concrete.Uses of crumb rubberin concrete can reduce the harmfulness to the environment and produce a 'greener' concrete for construction. An innovative supplementary Construction Material is formed through this study.

RESULTS

Table 1: Age (in year) distribution

Age (in years)	Group A [OPEN]		Group B [TAPP]	
	No of pts	%	No of pts	%
18-30 years	8	26.67%	13	43.44%
31-40 years	3	10.00%	5	16.67%
41-50 years	4	13.33%	4	13.33%
51-60 years	8	26.67%	4	13.33%
>60 years	7	23.33%	4	13.33%
Total	30	100%	30	100%

Table 2: Mean age (in year) distribution

Mean age (in years)	Group A [OPEN]	Group B [TAPP]	p value
Mean±SD	47.80±19.121	38.67±15.546	0.04 **(S)**

Table 3: Sex distribution

Age (in years)	Group A [OPEN]		Group B [TAPP]	
	No of pts	%	No of pts	%
Male	30	100%	30	100%
Female	0	0.00%	0	0.00%

Table 4: Quality of Life

Domains of QOL n=60	Mean±SD		p value
	OPEN	TAPP	
Physical functioning	61±22.62	90.33±7.59	0.0001 **(S)**
Role physical	75.83±42.88	95.83±13.97	0.0183 **(S)**
Bodily pain	78.50±12.63	88.25±11.37	0.0026 **(S)**
General health	82.17±10.980	90.50±8.380	0.0016 **(S)**
Vitality	87.50±7.14	94.33±1.73	0.0001 **(S)**
Social functioning	74.58±15.957	93.33±11.079	0.3393 **(NS)**
Role emotional	88.89±31.865	92.22±27.083	0.6644 **(NS)**
Mental health	91.20±7.670	94.93±6.066	0.0611 **(NS)**

DISCUSSION

Inguinal hernia repair is one of the common elective procedure in general surgery.

The main goal of any hernia repair include minimizing intraoperative, postoperative possible recurrence, rapid return to normal life, cost effectiveness and better cosmetic, result to successfully achieve their goals, the technique of herniorraphy has progressed from open to TAPP and TEP repairs and currently the most common inguinal hernia repairs performed by experienced laparoscopic surgeons.

This prospective study was designed to compare the quality of life using SF-36 questionnaire in patients of inguinal hernia 4 weeks after TAPP hernia repair and OPEN hernia repair.

Age:

In our study mean age of patient undergoing OPEN hernia repair is 47.80±19.121, maximum number belong to age 18-30 years 8 patients (26.67%) and same in 51-60 year.
7 (23.33%) belong age >60 year.

In our study mean age of patient undergoing TAPP hernia repair is 38.67±15.546 maximum number belong to age 18-30 years 13 patients (43.33%).

Sex:

In our stuy all patient are male. This could be further justified that men have more tendency to inherent weakness along inguinal canal due to different anatomical features. Usually in the early closes almost completely but due to idiopathic reasons sometimes it does not close properly, leaving a weakened area especially in males. In females there is less chance that inguinal canal will not close after birth.

Depending on relationship to inferior epigastric vessels an inguinal hernia can be direct or indirect. Indirect hernia is most common abdominal hernia.

In our study 40 patients out of 60 has indirect inguinal hernia (67%).

Physical health:

In our study out of 30 patients the mean±SD of physical functioning scoring of OPEN hernia repair is 61±22.62 while out of 30 patients of TAPP repair, mean±SD is 90.33±7.59.

In our study out of 30 patients of OPEN procedure were compared with 30 patients of TAPP.

15 patients was limited a lot in vigorous activity in OPEN while in TAPP (RAND score=0) there were 0 patient.

15 patients have limited a little in vigorous activity in OPEN while in TAPP there were 29 patients (RAND score=50).

No patient had limitation in vigorous activity in OPEN while in TAPP there was 1 patient (RAND score=100).

1 patient has not limited at all in moderate activity in OPEN while in TAPP there were 14 patients (RAND score=100).

6 patient have not limited at all in lifting or carrying groceries in OPEN while in TAPP there were 30 patients (RAND score=100)

3 patients have not limited at all in climbing several flight of stairs in OPEN while in TAPP there were 25 patients (RAND score=100).

23 patients have not limited at all in climbing one flight of stair in OPEN while in TAPP there was all 30 patients (RAND score=100) who were not limited.

9 patients have not limited at all in bending in OPEN while in TAPP there were 30 patients (RAND score=100).

3 patients have not limited at all in walking more than a mile in OPEN while in TAPP there were 22 patients (RAND score=100).

10 patients have not limited at all in walking several block in OPEN while in TAPP there were 30 patients (RAND score=100).

All 30 patients have not limited at all in walking one block in OPEN while in TAPP there were also 30 patients (RAND score=100).

All patients had no problem in bathing in both OPEN and TAPP (RAND score=100).

The p value=0.0001

It means 4 week after OPEN and TAPP hernia repair there was better

improvement in physical functioning of patients of inguinal hernia who went for TAPP repair.

Role physical (Role limitation due to physical health)
In our study the mean±SD of role physical scoring (Role limitation due to physical health) in OPEN hernia repair patients = 77.83±42.88 while in TAPP hernia repair patients is mean±SD 95.83±13.97 after 4 weeks post operatively.

P value =0.0183
So there is early improvement in role physical after 4 weeks post operatively in TAPP than OPEN repair of inguinal hernia.

Bodily pain
In OPEN mean±SD of bodily pain scoring 78.50±12.63.

In TAPP mean±SD of bodily pain scoring=88.25±11.37.

P value=0.0026.

It means after TAPP repair patients have less bodily pain then OPEN hernia repair patients.

In our study out of 30 patients in OPEN and TAPP procedure respectively 3 patient (10%) complained mild pain in OPEN while in TAPP no patient has mild pain (RAND score=60), 16 patients (53.33%) complained very mild pain (RAND score=80) and 11 patients (36.67%) had no body pain (RAND score=100) in OPEN while in TAPP in 14 patients (47%) complained very mild pain and 16 patients (53%) had no bodily pain after 4 weeks post operatively.

In our study out of 30 patients in OPEN and TAPP respectively 2 patients (7%) had no interference in their normal work due to pain (RAND score=100), 22 patients (73.33%) had little bit interference in their normal work due to pain (RAND score=50) in OPEN while in TAPP 13 patients (43%) had no interference (RAND score=100) in their normal work due to pain and 17 patients (57%) had little bit of interference (RAND score=50) after 4 weeks postoperatively.

VITALITY:
In our study mean±SD of vitality scoring=87.50±.7.14 in OPEN hernia repair while in TAPP mean±SD of vitality scoring=94.33±1.73.

P value=0.0001.

In OPEN procedure 25 patients (83%) felt full of pep most of the time (RAND score=80) and 5 patients (17%) felt full of pep a good bit of the time (RAND score=60).

In OPEN procedure 26 patients (87%) felt lot of energy most of time (RAND score=80) and 3 patients (10%) felt lot of energy a good bit of time (RAND score=60) and 1 patient felt lot of energy all of the time.

In OPEN procedure 5 patients (17%) felt worn out a little bit of the time (RAND score=100).

In OPEN procedure 3 patients (10%) felt tired a little bit of time (RND score=80) and 27 patients (90%) felt tired none of the time (RAND score=100).

In TAPP procedure all 30 patients felt full of pep most of time (RAND score=80).

In TAPP procedure all 30 patients felt alot of energy all the time (RAND score=100)

In TAPP procedure all 30 patients did not felt worn out (RAND score=100).

In TAPP procedure 4 patients (13%) felt tired a little of the time (RAND score=80) and 26 patients (87%) did not felt tired (RAND score=100) .

So there is significant improvement in vitality scoring after TAPP hernia repair than OPEN.

Social functioning
- In our study the mean±SD of social functioning in OPEN procedure=74.58±15.957 while in TAPP is 93.33±11.079.
- P value=0.3393
- So there is no significant difference between patients of OPEN and TAPP in social activity with family or neighbours after 4 weeks postoperatively.
- In OPEN procedure 4 patients had moderate limitation (RAND score=50), 18 patients (60%) had slightly limitation (RAND score=75) and 8 patients had no limitation (RAND score=100) in social functioning due to physical health or emotional problems.
- While in TAPP 6 patients had slightly limitation (RAND score=75) and 24 patients (80%) had no limitation (RAND score=100) in social functioning due to physical health or emotional problems.
- In OPEN 9 patients had some of the time interference (RAND score=50), 17 patients had a little of time interference (RAND score=75) and 4 patients had no interference (RAND score=100) in their social activities due to physical health, emotional problems.
- While in TAPP 10 patients (33%) have got interfered for little of the time (RAND score=75) and 20 patients did not interference (RAND score=100) in social activities due to physical health or emotional problems.

General health perception:
In our study mean±SD of general health OPEN is 82.17±10.980 while in TAPP=90.50±8.380p value=0.0016.

So there is significant change in general health perception 4 weeks after OPEN or TAPP hernia repair.

In OPEN, 27 patients (90%) said that it is definitely false that they seem to get sick a little easier than other people (RAND score=100) and 3 patients said that it is mostly false (RAND score=75) that they seem to get sick a little easier, 7 patients said that it is definitely true that they are healthy as anybody (RAND score=100) and 23 patients (78%) said that it is mostly true that they are healthy as anybody (RAND score=75), 12 patients (40%) said that it is definitely false that their health is getting worse (RAND score=100) and 18 patients (60%) said that it is mostly false that their health is getting worse (RAND score=75), 6 patients said that it is definitely true that their health is excellent (RAND score=100), 20 patients (67%) said that it is mostly true that their health is excellent (RAND score=75) and 4 patients said that they don't know (RAND score=50).

In TAPP all patients said that it is definitely false (RAND score=100) that they seem to get sick a little easier than other, 15 patients (50%) said that it is definitely true that they are as healthy as anybody (RAND score=100), 15 patients (50%) said that it is mostly true that they are healthy as anybody (RAND score=50), 29 patients (96.67%) said that it is definitely false to expect their health got worse (RAND score=100) 17 patients said that it is definitely true that their health is excellent (RAND score=100) and 13 patients said that it is mostly true that their health is excellent (RAND score=75).

Mental health:
In our study mean±SD =91.20±7.670 in OPEN patient while in TAPP in TAPP mean±SD=94.93±6.066 for mental health.

P value=0.0611

So there is no significant difference between OPEN and TAPP patients 4 week after hernia repair.

In OPEN technique 24 patients (80%) said that none of the time they were very nervous person (RAND score=100) 5 patients (17%) said that they were a nervous person a good bit of time (RAND score=60), 26 patients (87%) said that they never felt down in dump that nothing could cheer then up (RAND score=100) and 4 patients said that they felt down in dump a little of the time (RAND score=80), all patients said that they never felt down hearted and blue (RAND score=100), 24 patients (80%) felt calm and peaceful most of the time (RAND score=80), 6 patients felt calm and peaceful a good bit of time (RAND=60) and all patient said that they are happy all the time (RAND score=100).

In TAPP technique 26 patients (87%) said that none of the time they were very nervous person (RAND score=100) and 4 patients felt very nervous person a little bit of time (RAND score=80).

All patient never felt so down in dumps that nothing could cheer them up (RAND score=100). All patient never felt down hearted and blue (RAND score=100).

10 patients (33%) felt calm and peaceful all the time (RAND score=100) and 20 patients (67%) felt calm and peaceful most of the time (RAND score=80), all patients said that they were happy person all the time (RAND score=100).

Role emotion:

- In OPEN Role emotion mean±SD 88.89±31.865.
- In TAPP role emotion mean±SD 92.22±27.083.
- p value=0.6644
- It means there is no significant change in Role emotion between OPEN and TAPP hernia repair.

Quality of life assessment:

Quality of life for whole group improved significantly in five out of eight scales of SF-36 questionnaire in TAPP technique in comparison to OPEN technique physical functioning (p value=0.0001), role physical (p value=0.0183), bodily pain (p value=0.0026), vitality (p value=0.0001), general health (p value=0.0016).

No significant difference in social functioning, mental health and role emotion.

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