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Original Research Article

Comparison of Long-Term Outcomes Following Mesh Repair of Inguinal Hernia Performed by Surgeon at BMIMS, Pawapuri

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Abstract:

Background: Inguinal hernia is a common surgical condition for which mesh repair provides effective recurrence prevention and symptom relief. The influence of the operating provider on long-term outcomes remains clinically relevant, particularly where specialist surgical manpower is limited.

Aim: To compare long-term outcomes following mesh repair of inguinal hernia performed by medical doctors and surgeons.

Methodology: A prospective comparative cohort study was conducted among 90 patients undergoing open mesh repair at the Department of General Surgery, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Bihar. Patients were equally divided into medical doctors (n=45) and surgeons (n=45) groups. Operative, early postoperative, long-term, and patient-reported outcomes were assessed and analyzed using SPSS version 27.0. A p-value <0.05 was considered statistically significant.

Results: Operative time, hospital stay, postoperative pain, and early complications were comparable between groups. Recurrence occurred in 4.4% of patients treated by medical doctors and 6.7% treated by surgeons (p=1.000). Chronic groin pain occurred in 11.1% and 8.9% (p=0.725), respectively. Overall satisfaction was 88.9% versus 91.1% (p=0.725). No statistically significant differences were observed in long-term outcomes.

Conclusion: Long-term outcomes following open mesh repair were comparable between medical doctors and surgeons when standardized techniques, appropriate training, patient selection, and follow-up were ensured.

Keywords: Inguinal hernia, mesh repair, medical doctors, surgeons, recurrence, chronic pain, patient satisfaction.
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Introduction

Inguinal hernia is a very frequent condition that requires surgical intervention and is a major burden to the health care system globally [1]. It happens when the contents of the abdomen or preperitoneal area bulges through a weakness in the inguinal area, creating a bump in the groin that can cause pain, discomfort, restricted mobility or complications, including incarceration and strangulation. Men have a high likelihood of developing an inguinal hernia; population-based studies have estimated the lifetime risk of about 27% in men [2]. Inguinal hernia repair is one of the most common general surgery procedures and is particularly common due to the potential complications.

The main goal of inguinal hernia repair is to re-establish the integrity of the abdominal wall, to prevent reoccurrence of inguinal hernia, to relieve symptoms and to enable patients to resume normal activities [3]. For the last few decades, mesh-based hernioplasty has emerged as a valid surgical technique due to its ability to strengthen the posterior wall of the inguinal canal and to decrease tension on the repaired tissues. Systematic review evidence has shown that mesh repair has been linked to a reduced risk of hernia recurrence compared to non-mesh repair, and that the recovery time after surgery and return to normal activity were comparatively rapid. Therefore, current international guidelines have suggested that the majority of patients should be treated with mesh for inguinal hernia repairs.

Lichtenstein tension-free repair is one of the more frequently used meshes, due to its relative technical simplicity, its reproducibility and good recurrence results [4]. In the right patient, also laparoscopic and laparoendoscopic techniques such as totally extraperitoneal and transabdominal preperitoneal repairs

have become important techniques. The final results of inguinal hernia repair however, depend on more than just the operative technique and characteristics of the hernia mesh, but also patient characteristics, hernia characteristics, perioperative management, operative technique and execution, and experience and training of the healthcare professional who performed the procedure.

The repair of inguinal hernia has a good prognosis, but recurrence and persistent postoperative inguinal pain can be of concern. Pain that lasts for more than three months after surgery is considered chronic postoperative inguinal pain and can have an impact on daily functioning, physical functioning, employment and quality of life [5]. Various other outcomes can be long-term, such as ongoing groin pain, foreign body sensation, scrotal pain, mesh complications, reoperation and patient dissatisfaction. One of the key recommendations in the Hernia Surge guidelines is a focus on reducing the risk of recurrence and chronic postoperative pain to boost long-term outcomes for hernia surgery. Thus, the evaluation of results should not be limited to immediate postoperative complications but also to a clinically significant longterm follow-up.

The availability of adequate trained surgical personnel is an important factor especially in health care institutions where the number of surgical specialists is not enough to serve the surgical needs of the population. Surgical task sharing is a proposed approach to enhance access to essential surgical care, where appropriate trained medical doctors perform some of the surgical tasks, according to defined protocols and under defined supervision [6]. But questions might be raised about the efficacy of the procedures performed by physicians who have no specialized training in surgical care, but may be able to get similar results as a surgeon. These variations in surgical experience, surgical anatomy and intraoperative challenges, as well as intraoperative and postoperative decisions are potentially significant factors which could impact on long-term surgical outcomes.

Comparisons between the results of mesh inguinal hernia repair by medical doctors and surgeons are still relatively scarce [7]. A prospective cohort study of 242 male patients with primary reducible inguinal hernia in Ghana that examined outcomes from Lichtenstein mesh repair surgery conducted by trained medical doctors or surgeons. Patients treated by medical doctors had a 0.9% recurrence rate while patients treated by surgeons had a 2.8% rate at 1 year; there were no statistically significant differences in postoperative complications, in patient satisfaction with the outcome, in severe chronic pain or self-assessed health status. These results therefore offered proof that suitably trained medical doctors could conduct specific elective mesh repairs that would achieve satisfactory short-term results.

Importantly, short-term results do not necessarily encompass the long-term effectiveness and safety of a surgical procedure. The recurrence of a hernia may occur years after the surgery, and symptoms associated with the implant may occur or last for extended durations following surgery [8]. A five year follow up of the same group reported that overall recurrence was 4.7%, four per cent of patients who had medical doctors repair their defect suffered a recurrence compared to 7.3% who had the repair performed by a surgeon. The investigators found that at five years, benefits in terms of groin pain and health status self-assessed remained. The results of this study offer helpful evidence on long-term outcomes, but the study was conducted in a certain healthcare context that included selected patients and trained medical doctors, and thus the results might not be directly applicable to all healthcare settings.

Given the similarity in the procedure, a comparison of medical staff and surgeons is therefore of clinical relevance in establishing whether non-specialist, well-trained medical staff can contribute safely to the delivery of elective hernia surgery without compromise to patient outcomes in the long-term [9]. This evidence can be especially useful in a surgical facility where there is a shortage of surgical staff and a high number of inguinal hernias are uncomplicated. Assessment of long-term outcomes such as recurrence, chronic pain, postoperative complications, patient satisfaction, functional recovery, and others, can offer a more comprehensive look at the effectiveness and safety of care provided by various types of health care professionals.

In this context, the present study – called "Comparison of Long-Term Outcomes Following Mesh Repair of Inguinal Hernia Performed by Medical Doctors and Surgeons" – was conducted to compare the long-term clinical outcomes of patients who underwent mesh repair by medical doctors and surgeons. The study will provide evidence of recurrence, chronic postoperative symptoms, complications, and patient-related outcomes after a longer follow-up period following mesh repair. Comparative evaluation may be useful to understand the durability of a surgeon's performance of selected inguinal hernia repairs after suitable training and generate evidence for the delivery of surgical services and surgical workforce planning."

Methodology

Study Design: The study was conducted as a prospective comparative cohort study to compare the long-term outcomes following mesh repair of inguinal hernia performed by medical doctors and surgeons. The study assessed postoperative outcomes, including hernia recurrence, postoperative pain, complications, and patient satisfaction, during the follow-up period. Participants were enrolled after fulfilling the predefined eligibility criteria and providing informed consent. The outcomes were

compared between patients whose inguinal hernia repairs were performed by medical doctors and those whose repairs were performed by surgeons.

Study Area: The study was conducted in the Department of General Surgery, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India.

Study Duration: The study was conducted over a period of one year from April 2025 to March 2026.

Study Participants: The study participants consisted of patients diagnosed with inguinal hernia who underwent mesh repair performed by either a medical doctor or a surgeon. The participants were selected according to the following inclusion and exclusion criteria.

Inclusion Criteria

- Patients aged 18 years or above.
- Patients diagnosed with primary inguinal hernia.
- Patients with reducible or clinically suitable inguinal hernia for mesh repair.
- Patients who underwent open mesh repair of inguinal hernia.
- Patients whose procedures were performed by either a medical doctor or a qualified surgeon.
- Patients who provided written informed consent for participation.
- Patients who were willing to attend the scheduled postoperative follow-up visits.

Exclusion Criteria

- Patients with recurrent inguinal hernia.
- Patients with complicated hernia requiring emergency surgery, such as strangulated or obstructed hernia.
- Patients with bilateral hernia requiring simultaneous bilateral repair.
- Patients with major comorbid conditions that substantially increased operative risk.
- Patients who underwent a surgical technique other than the standardized mesh repair included in the study.
- Patients who did not provide informed consent.
- Patients who were unavailable for postoperative follow-up.

Sample Size: A total of 90 patients fulfilling the eligibility criteria were included in the study. The participants were categorized into two groups according to the operating provider: patients undergoing mesh repair performed by medical doctors and patients undergoing mesh repair performed by surgeons. The groups were compared with respect to postoperative and long-term clinical outcomes.

Procedure: All eligible patients underwent preoperative clinical evaluation, which included detailed history taking, physical examination, assessment of hernia characteristics, and evaluation of relevant demographic and clinical variables. After obtaining informed consent, patients underwent open mesh repair of inguinal hernia using a standardized operative technique. The surgical procedure was performed by either a medical doctor or a surgeon according to the assigned operating provider and availability. Appropriate preoperative preparation, aseptic precautions, anesthesia, and perioperative management were followed in all cases. Postoperatively, patients were monitored for immediate complications and were provided routine postoperative care. Follow-up assessments were performed at predetermined intervals during the study period. During follow-up, patients were assessed for wound-related complications, postoperative pain, chronic groin discomfort, hernia recurrence, and overall satisfaction with the surgical treatment. Recurrence was assessed clinically by physical examination for a palpable swelling or cough impulse at the site of repair. Relevant clinical findings and postoperative outcomes were recorded systematically in a structured data collection form. The outcomes of patients operated on by medical doctors were subsequently compared with those of patients operated on by surgeons.

Statistical Analysis: The collected data were entered, coded, and analyzed using IBM SPSS Statistics version 27.0. Continuous variables were expressed as mean and standard deviation, while categorical variables were presented as frequencies and percentages. Continuous variables between the two groups were compared using the independent samples t-test, where appropriate. Categorical variables were compared using the Pearson chi-square test or Fisher's exact test, as applicable. The incidence of postoperative complications and hernia recurrence was compared between the medical doctor and surgeon groups. A p-value of <0.05 was considered statistically significant."

Result

Table 1 presents the distribution of study participants according to demographic characteristics. The mean age was comparable between patients treated by medical doctors (46.2 ± 11.3 years) and surgeons (47.1 ± 10.8 years), with an overall mean age of 46.7 $\pm$ 11.0 years and no statistically significant difference ($p=0.700$). The largest proportion of participants belonged to the 31–45-year age group, comprising 35.6% of the medical doctors group and 37.8% of the surgeons group, followed by the 46–60-year group (31.1% and 33.3%, respectively). Participants aged 18–30 years accounted for 15.6% and 13.3%, while those aged >60 years constituted 17.8% and 15.6%, respectively; the age-group distribution was comparable ($p=0.963$). Males predominated in both groups, representing 80.0% of patients treated by medical doctors and 82.2% treated by surgeons, whereas females accounted for 20.0% and 17.8%, respectively ($p=0.788$). Overall, no

significant demographic differences were observed between the groups.

Table 1: Distribution of study participants according to demographic characteristics (n=90)				
Variable	**Medical doctors (n=45)**	**Surgeons (n=45)**	**Total (n=90)**	**p-value**
Age (years), Mean ± SD	46.2 ± 11.3	47.1 ± 10.8	46.7 ± 11.0	0.7
Age group				
18–30 years	7 (15.6%)	6 (13.3%)	13 (14.4%)	0.963
31–45 years	16 (35.6%)	17 (37.8%)	33 (36.7%)	
46–60 years	14 (31.1%)	15 (33.3%)	29 (32.2%)	
>60 years	8 (17.8%)	7 (15.6%)	15 (16.7%)	
Male	36 (80.0%)	37 (82.2%)	73 (81.1%)	0.788
Female	9 (20.0%)	8 (17.8%)	17 (18.9%)	

Table 2 presents the distribution of participants according to the clinical characteristics of inguinal hernia. The duration of hernia was comparable between the medical doctors and surgeons groups, with most patients having a hernia duration of 1–3 years (42.2% and 46.7%, respectively), followed by less than 1 year (40.0% and 37.8%) and more than 3 years (17.8% and 15.6%), with no statistically significant difference (p=0.821). Right-sided hernia was slightly more common in both groups, occurring in 53.3% of patients treated by medical doctors and 55.6% treated by surgeons, whereas left-sided hernia accounted for 46.7% and 44.4%, respectively (p=0.911). Regarding hernia type, indirect hernia was more frequent in both groups, affecting 62.2% of patients in the medical doctors group and 60.0% in the surgeons group, while direct hernia was present in 37.8% and 40.0%, respectively (p=0.813). Overall, the clinical characteristics were statistically comparable between the two groups.

Table 2: Distribution of participants according to clinical characteristics of inguinal hernia				
Clinical characteristic	**Medical doctors (n=45)**	**Surgeons (n=45)**	**Total (n=90)**	**p-value**
Duration of hernia				0.821
<1 year	18 (40.0%)	17 (37.8%)	35 (38.9%)	
1–3 years	19 (42.2%)	21 (46.7%)	40 (44.4%)	
>3 years	8 (17.8%)	7 (15.6%)	15 (16.7%)	
Side of hernia				0.911
Right	24 (53.3%)	25 (55.6%)	49 (54.4%)	
Left	21 (46.7%)	20 (44.4%)	41 (45.6%)	
Type of hernia				0.813
Indirect	28 (62.2%)	27 (60.0%)	55 (61.1%)	
Direct	17 (37.8%)	18 (40.0%)	35 (38.9%)	

Table 3 presents the comparison of operative and early postoperative outcomes between patients treated by medical doctors and surgeons. The mean operative time was 54.6 ± 9.8 minutes in the medical doctors group and 52.8 ± 8.9 minutes in the surgeons group, with no statistically significant difference (p=0.365). Similarly, the mean hospital stay was comparable between the medical doctors group (1.8 ± 0.7 days) and surgeons group (1.7 ± 0.6 days; p=0.469). Postoperative pain scores were also similar, measuring 2.1 ± 0.9 and 2.0 ± 0.8, respectively (p=0.579). Wound infection occurred in 4.4% and 2.2% of patients, respectively (p=0.557), while seroma/hematoma was reported equally in both groups (6.7%; p=1.000). Urinary retention occurred in 4.4% of the medical doctors group and 2.2% of the surgeons group (p=0.557). Overall, absence of early complications was observed in 84.4% and 88.9% of patients, respectively (p=0.532), indicating comparable early postoperative outcomes."

Table 3: Comparison of operative and early postoperative outcomes between the two groups			
Outcome	**Medical doctors (n=45)**	**Surgeons (n=45)**	**p-value**
Operative time (minutes), Mean ± SD	54.6 ± 9.8	52.8 ± 8.9	0.365
Hospital stay (days), Mean ± SD	1.8 ± 0.7	1.7 ± 0.6	0.469
Postoperative pain score, Mean ± SD	2.1 ± 0.9	2.0 ± 0.8	0.579
Wound infection	2 (4.4%)	1 (2.2%)	0.557
Seroma/hematoma	3 (6.7%)	3 (6.7%)	1
Urinary retention	2 (4.4%)	1 (2.2%)	0.557
No early complication	38 (84.4%)	40 (88.9%)	0.532

Table 4 presents the comparison of long-term postoperative outcomes between patients treated by medical doctors and surgeons. Hernia recurrence was observed in 2 patients (4.4%) in the medical doctors group and 3 patients (6.7%) in the surgeons group, while no recurrence was reported in 95.6% and 93.3% of patients, respectively, with no statistically significant difference (p=1.000). Chronic groin pain occurred in 11.1% of patients treated by medical doctors compared with 8.9% treated by surgeons, whereas 88.9% and 91.1% had no chronic pain, respectively (p=0.725). Other late complications were reported in 6.7% and 4.4% of patients, respectively, with no significant difference (p=0.645). Patient satisfaction was also comparable, with 88.9% of patients in the medical doctors group and 91.1% in the surgeons group reporting satisfaction (p=0.725). Overall, the findings demonstrated comparable long-term postoperative outcomes between the two groups.

Table 4: Comparison of long-term postoperative outcomes between medical doctors and surgeons

Long-term outcome	Medical doctors (n=45)	Surgeons (n=45)	Total (n=90)	p-value
Hernia recurrence	2 (4.4%)	3 (6.7%)	5 (5.6%)	1
No recurrence	43 (95.6%)	42 (93.3%)	85 (94.4%)	
Chronic groin pain	5 (11.1%)	4 (8.9%)	9 (10.0%)	0.725
No chronic pain	40 (88.9%)	41 (91.1%)	81 (90.0%)	
Other late complications	3 (6.7%)	2 (4.4%)	5 (5.6%)	0.645
No late complication	42 (93.3%)	43 (95.6%)	85 (94.4%)	
Patient satisfaction				0.725
Satisfied	40 (88.9%)	41 (91.1%)	81 (90.0%)	
Not satisfied	5 (11.1%)	4 (8.9%)	9 (10.0%)	

Table 5 presents the comparison of patient-reported postoperative outcomes between patients treated by medical doctors and surgeons. The mean pain score was comparable between the medical doctors group (2.1 ± 0.9) and surgeons group (2.0 ± 0.8), with no statistically significant difference (p=0.579). Similarly, the mean patient satisfaction score was 88.4 ± 9.7% among patients treated by medical doctors and 89.2 ± 8.9% among those treated by surgeons (p=0.685). Excellent satisfaction was reported by 64.4% and 68.9% of patients, respectively, while good satisfaction was observed in 24.4% and 22.2%. Fair/poor satisfaction was reported by 11.1% and 8.9% of patients. No recurrence was documented in 95.6% of the medical doctors group and 93.3% of the surgeons group (p=1.000). Overall, satisfactory outcomes were reported by 88.9% and 91.1%, respectively, with no significant difference (p=0.725), indicating comparable patient-reported postoperative outcomes between the two groups.

Table 5: Comparison of patient-reported postoperative outcomes between the two groups

Patient-reported outcome	Medical doctors (n=45)	Surgeons (n=45)	p-value
Pain score, Mean ± SD	2.1 ± 0.9	2.0 ± 0.8	0.579
Patient satisfaction score (%), Mean ± SD	88.4 ± 9.7	89.2 ± 8.9	0.685
Excellent satisfaction	29 (64.4%)	31 (68.9%)	0.659
Good satisfaction	11 (24.4%)	10 (22.2%)	
Fair/poor satisfaction	5 (11.1%)	4 (8.9%)	
No recurrence	43 (95.6%)	42 (93.3%)	1
Overall satisfactory outcome	40 (88.9%)	41 (91.1%)	0.725

Discussion

In the present study, operative, early postoperative, and long-term postoperative outcomes were compared with patient-reported outcomes following mesh repair of inguinal hernia for both medical doctors and surgeons. The baseline characteristics were similar between the two groups, with the mean age of 46.2 ± 11.3 years in the medical doctor's group and 47.1 ± 10.8 years in the surgeon's group (p=0.700); and 80.0% and 82.2% of males, respectively (p=0.788). Also, no significant difference was seen between the groups in terms of hernia duration, side and type. The findings are of importance due to the fact that the same baseline characteristics allow for a good assessment as to whether the operating provider had an impact on the postoperative results. In a similar prospective cohort study of 242 men in Ghana who were undergoing Lichtenstein mesh repair, Beard et al. (2019) [10] found similar preoperative characteristics in those treated by medical doctors and surgeons to support feasibility in comparing outcomes between these provider groups. The pattern of the present study was in line with their study in which there was no significant difference in recurrence rates between those treated by medical doctors and those treated by surgeons (0.9% vs 2.8% at one year).

The relevant conclusions of the present study, in turn, revealed similar results. Mean operative time was 54.6 ± 9.8 minutes for medical doctors and 52.8

± 8.9 minutes for surgeons (p=0.365), while hospital stay was 1.8 ± 0.7 and 1.7 ± 0.6 days, respectively (p=0.469). Postoperative pain scores were also nearly identical at 2.1 ± 0.9 versus 2.0 ± 0.8 (p=0.579). The results indicate no significant differences in provider designation on either operative efficiency or early recovery. The EU Hernia Trialists Collaboration found comparable complication rates between open mesh techniques and various non-mesh techniques, with the mesh techniques generally more efficient at surgery and shorter hospital stay [11]. In a follow-up meta-analysis with 11,174 patients, mesh repair was also found to have beneficial effects on recurrence outcomes and persistent pain compared to non-mesh repair (88/4,426 versus 187/3,795 patients for recurrence and 120/2,368 versus 215/1,998 patients for persistent pain) [12]. While these studies did not compare provider categories but rather techniques, the results do support the positive early and long-term results of the current study in which mesh repair was used.

No early postoperative complications were seen in the current study. Medical doctors and surgeons had the same proportions of wound infection (4.4% vs 2.2%) and seroma/hematoma (6.7% vs 6.7%), but had higher proportions of urinary retention (4.4% vs 2.2%). In all, 84.4% of patients who had medical doctors and 88.9% of patients who had surgeons were not complicated in the early stages (p=0.532). Similar observations were reported by Beard et al. (2019), who reported no difference in the incidence of complications between medical doctors and surgeons (29.1% and 24.2%, respectively). This may be attributed, in part, to differences in assessment of complications and follow-up in that study. The European Hernia Society guidelines also define Lichtenstein repair as a repeatable open mesh repair with low peri-operative morbidity and low recurrence rates (Simons et al., 2009) [13].

The results of the present study are of particular relevance to the research question for the long-term findings. Hernia recurrence has occurred in 4.4% of the patients treated by medical doctors and 6.7% of those treated by surgeons (p=1.000), and 11.1% and 8.9%, respectively, had chronic groin pain (p=0.725). So, no difference was seen in the likelihood of recurrence, or chronic pain, across provider types. The results from these studies are similar to those found in older studies on mesh repair. Following 7.6 years of median follow-up, Nienhuijs et al. (2015) [14] reported a rate of overall recurrence of 6.3%, with 23% of patients reporting long-term pain, but only about one-fourth of these patients reporting moderate to severe pain. Matikainen et al. (2017) [15] reviewed 236 patients 7 years following Lichtenstein repair, with 4.3% of patients experiencing recurrence with glue fixation, and 2.5% with suture fixation, with chronic pain rates of 13% and 12%, respectively. The figures of recurrence and chronic pain in these studies are comparable to those found in the present study, especially for chronic pain.

After other types of open mesh techniques, similar long-term results have been reported by Droeser et al. 2014 [16]. The incidence of recurrence was 8.1% at a median of 6.5 years for Lichtenstein repair and 7.8% for mesh-plug repair, with no difference in chronic pain. Recurrence rates in the current study were lower than those reported by Droeser et al., but this could be due to various factors, including patient factors, follow-up period, surgical technique, and outcome assessment. In a similar manner, Bay-Nielsen et al. (2001) [17] calculated reoperation rates of 4.4% and 2.2% at 30 months after a posterior-wall repair compared to an anterior mesh repair, respectively, in a study of 26,304 groin hernia repairs in Denmark. These data echo the overall good recurrence rate for mesh repair.

Similar to the present study, patient satisfaction was also high and similar across providers. Medical doctors and surgeons reported mean satisfaction scores of 88.4 ± 9.7% and 89.2 ± 8.9%, respectively (p=0.685) and overall satisfaction of 88.9% and 91.1%, respectively (p=0.725). High satisfaction was also reported by Beard et al. (2019) one year later, with 98.2% of patients satisfied with the care they received from medical doctors, and 99.1% satisfied with the care they received from surgeons. While both studies report higher absolute satisfaction rates, both illustrate that when provider category choices are coupled with the right training and standardized mesh repair techniques, patient-reported outcomes can still be good regardless of provider.

These results thus corroborate the fact that well-trained physicians can obtain comparable results to those of surgeons in elective inguinal hernia mesh repair. This interpretation is also supported by Ashley et al. (2021) [18] in their randomized clinical trial that trained associate clinicians were able to repair inguinal hernia in the same way as medical doctors in Sierra Leone. The results of these are to be interpreted in the context of training, competency, supervision, case selection and institutional support, not just provider designation. The present study suggests that, in the setting studied, mesh repair by MDs and surgeons led to comparable operative recovery, complication rates, long-term recurrence, chronic groin pain, and patient satisfaction.

Conclusion

The present study concluded that long-term outcomes following open mesh repair of inguinal hernia were comparable between patients treated by medical doctors and surgeons. The two groups were similar with respect to demographic and clinical characteristics, ensuring meaningful comparison of postoperative outcomes. Operative time, hospital stay, postoperative pain, and early complications showed

no statistically significant differences between the groups. Similarly, long-term outcomes, including hernia recurrence, chronic groin pain, other late complications, and patient satisfaction, were comparable. Recurrence occurred in 4.4% of patients treated by medical doctors and 6.7% treated by surgeons, while overall satisfaction was 88.9% and 91.1%, respectively. Patient-reported pain and satisfaction scores were also similar. These findings suggest that, within the studied setting, appropriately trained medical doctors can perform selected elective mesh repairs with outcomes comparable to surgeons, when standardized techniques, adequate training, appropriate patient selection, and proper follow-up are ensured.

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