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Clinical Presentation and Outcome of Groin Hernia Surgery in Adult Population: A Prospective Descriptive Study

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Abstract

The abnormal protrusion of an organ or tissue through the walls that contain it is technically referred to as 'Hernia'. The word 'Hernia' is synonymous with the English word for 'rupture'. To evaluate the presentation and clinical outcome of groin hernia surgery in adults. The present study was a hospital based Prospective Descriptive Study This Study was conducted from 1 October 2019 to 30 March 2021 at Department of General Surgery, Peerless Hospital and B. K. Roy Research Centre, Kolkata-700094, West Bengal. In >70 Age Group, 1 (3.2%) patient had Femoral Hernia. Association of Femoral Hernia vs Age in Group was not statistically significant ($p=0.6784$). Groin hernia surgery in the adult population is generally safe and effective, with low recurrence rates and manageable complications. The choice of surgical technique should be individualized based on patient characteristics and hernia type. Further studies are recommended to explore long-term outcomes and quality of life post-surgery.

INTRODUCTION

The abnormal protrusion of an organ or tissue through the walls that contain it is technically referred to as 'Hernia'. The word 'Hernia' is synonymous with the English word for 'rupture'^[1]. However, the pathophysiology of hernia doesn't signify rupture in its literal sense., it is basically a protrusion of an internal part of body through a weakness in the muscle or surrounding tissue wall. Various sites of the body can undergo a hernia change but the 'inguinal region' remains the most common site affected with hernia^[1]. The exact etiology for the common occurrence of inguinal hernia probably lies in the natural weaknesses caused by inadequate muscular strength of the posterior wall of the inguinal canal despite the complex design of the abdominal wall^[2]. Inguinal hernias constitute nearly 75% of all abdominal wall hernias and 4% of all hernias amongst the elderly individuals^[3]. Hernia and its reparative surgery has always been one of the most fascinating domains amongst the surgeons worldwide. The surgical approaches in hernia from the classical operation of Bassini's repair to the presently practiced Lichtenstein's tension free mesh hernioplasty or the newer laparoscopic repair indicate the fundamental progress in the management of hernia^[4]. William S Halstead once said that "there is, perhaps, no operation which, by the profession at large, would be more appreciated than a perfectly safe cure for rupture"^[4]. Despite the presence of myriad surgical treatment of inguinal hernia, the concept of tension free prosthetic mesh hernioplasty and laparoscopic repair TEP (Total Extra peritoneal Repair) and TAPP (Trans abdominal pre peritoneal) aptly fit in the paradigm of the ideal treatment of inguinal hernia as it is well defined, least traumatic, least expensive and with minimal morbidity^[5]. The use of a prosthetic mesh in all adult groin hernias irrespective of type, etiology or classification has been the transformational change in the management of inguinal hernia. The Lichtenstein's Tension free mesh hernioplasty as the chosen surgical technique for hernia repair has been acknowledged across the world with favourable results, few recurrences and minimal post-operative morbidity^[6]. By introducing prosthetic mesh, Lichtenstein showed that inguinal hernias could be repaired without distortion of the anatomy and, most importantly, without any tension along the suture line. In spite of various ramifications in the surgical techniques over the last two decades, Lichtenstein hernia tension free mesh hernioplasty continues to be the gold standard in the management of inguinal hernia by open technique^[7]. Few centers also practice the plug and patch repair method of mesh hernioplasty wherein a polypropylene plug shaped cone is deployed into the internal ring after reduction of an indirect hernia sac. The use of 'Polypropylene' mesh in hernia surgery has become immensely popular in the present

surgical arena. A non absorbable, non polar, hydrophobic, electrostatically neutral polymer, Polypropylene is being widely used as component of mesh due to its high tensile strength, least reactivity with implantation and a low propensity for infection^[8,9]. However, if used intraperitoneally, polypropylene meshes can induce adhesions among the viscera^[10]. The use of polyesters as the desired material for mesh detected flexibility, high tensile strength and high resistance to stretching, but on the contrary, led to frequent fistula formation, high recurrence, increased postoperative infections and degradation in long-term implantation^[11,12]. The use of expanded polytetrafluoroethylene (ePTFE) was introduced to hernia surgery by Sher *et al.* detected to have considerably reduced adhesions formation but if infected, required expulsion^[13,14].

MATERIALS AND METHODS

Study Site: Department Of General Surgery, Peerless Hospital and B. K. Roy Research Centre, Kolkata-700094, West Bengal.

Study Population: All patients (presenting to peerless hospital a tertiary care center) with a groin bulge (reducible) and were subsequently diagnosed and operated for hernia.

Study Design: A hospital based Prospective Descriptive Study.

Period of Study: 18months. 1 October 2019 to 30 March 2021.

Inclusion Criteria:

- The patients were initially evaluated and diagnosed with groin hernia in the general surgery outpatient department of our tertiary care hospital and then underwent surgery.

Exclusion Criteria:

- Patients who are <18 years or those who were unwilling for surgery and complicated Groin Hernia [obstructed, strangulated, incarcerated] were excluded from the study.

Sample Size: 102.

Statistical Analysis: For statistical analysis, data were initially entered into a Microsoft Excel spreadsheet and then analyzed using SPSS (version 27.0., SPSS Inc., Chicago, IL, USA) and GraphPad Prism (version 5). Numerical variables were summarized using means and standard deviations, while categorical variables were described with counts and percentages. Two-sample t-tests, which compare the means of independent or unpaired samples, were used to assess

differences between groups. Paired t-tests, which account for the correlation between paired observations, offer greater power than unpaired tests. Chi-square tests (χ^2 tests) were employed to evaluate hypotheses where the sampling distribution of the test statistic follows a chi-squared distribution under the null hypothesis., Pearson's chi-squared test is often referred to simply as the chi-squared test. For comparisons of unpaired proportions, either the chi-square test or Fisher's exact test was used, depending on the context. To perform t-tests, the relevant formulae for test statistics, which either exactly follow or closely approximate a t-distribution under the null hypothesis, were applied, with specific degrees of freedom indicated for each test. P-values were determined from Student's t-distribution tables. A p-value ≤ 0.05 was considered statistically significant, leading to the rejection of the null hypothesis in favour of the alternative hypothesis.

RESULTS AND DISCUSSIONS

In ≤ 40 Group, 7 (100.0%) patients had Swelling, In 41-50 Group, 7 (100.0%) patients had Swelling+ Pain, In 51-60 Group, 18 (100.0%) patients had Swelling+ Pain, In 61-70 Group, 39 (100.0%) patients had Swelling+ Pain, In >70 Group, 31 (100.0%) patients had Swelling+ Pain. Association of Symptoms with Age in Groups was statistically significant ($p < 0.0001$). In >70 Age Group, 1 (3.2%) patient had Femoral Hernia. Association of Femoral Hernia vs Age in Group was not statistically significant ($p = 0.6784$). In ≤ 40 Group, 1 (14.3%) patient had BPH, Hypertension, 1 (14.3%) patient had COPD, 1 (14.3%) patient had DM and 1 (14.3%) patient had HTN in Co-morbidities. In 41-50 Group, 1 (14.3%) patient had BPH, Hypertension and 1 (14.3%) patient had COPD in Co-morbidities. In 51-60 Group, 2 (11.1%) patients had BPH, 1 (5.6%) patient had COPD, 2 (11.1%) patients had COPD, HTN, 4 (22.2%) patients had DM and 3 (16.7%) patients had HTN in Co-morbidities. In 61-70 Group, 3 (7.7%) patients had BPH, 2 (5.1%) patients had COPD, 2 (5.1%) patients had COPD, HTN, 7 (17.9%) patients had DM, 9 (23.1%) patients had HTN and 1 (2.6%) patient had Hypothyroidism in Co-morbidities. In >70 Group, 2 (6.5%) patients had BPH, 1 (3.2%) patient had BPH, Hypertension, 2 (6.5%) patients had COPD, 2 (6.5%) patients had COPD, HTN, 8 (25.8%) patients had DM, 8 (25.8%) patients had HTN and 3 (9.7%) patients had Hypothyroidism in Co-morbidities. Association of Co-morbidities with Age in Groups was not statistically significant ($p = 0.5103$). In ≤ 40 Age Group, 5 (71.4%) patients had Post-Operative pain. In 41-50 Age Groups, 3 (42.9%) patients had Post-Operative pain. In 51-60 Age Groups, 6 (33.3%) patients had Post-Operative pain. In 61-70 Age Groups, 12 (30.8%) patients had Post-Operative pain. In >70 Age Group, 7 (22.6%) patients had Post-Operative pain. Association of

Post-Operative pain vs Age in Group was not statistically significant ($p = 0.1561$). In ≤ 40 Groups, 1 (14.3%) patient had LAP surgery and 6(85.7%) patients had Open surgery. In 41-50 Groups, 3(42.9%) patient had LAP surgery and 4(57.1%) patients had OPEN surgery. In 51-60 Groups, 2(11.1%) patient had LAP surgery and 16(88.9%) patients had Open surgery. In 61-70 Groups, 8(20.5%) patient had LAP surgery and 31(79.5%) patients had Open surgery. In >70 Groups, 6(19.4%) patient had LAP surgery and 25(80.6%) patients had Open surgery. Association of Type of surgery TAPP/TEP with Age in Groups was not statistically significant ($p = 0.4976$). In ≤ 40 Group, 6(85.7%) patients had OPEN surgery and 1 (14.3%) patient had TAPP surgery. In 41-50 Group, 4 (57.1%) patients had Open surgery and 3 (42.9%) patients had TAPP surgery. In 51-60 Group, 16(88.9%) patients had OPEN surgery, 1(5.6%) patients had TAPP surgery and 1 (5.6%) patient had TEP surgery. In 61-70 Group, 31(79.5%) patients had OPEN surgery, 7(17.9%) patients had TAPP surgery and 1(2.6%) patients had TEP surgery. In >70 Group, 25(80.6%) patients had OPEN surgery, 5 (16.1%) patients had TAPP surgery and 1(3.2%) patients had TEP surgery. Association of Type of surgery TAPP/TEP with Age in Groups was not statistically significant ($p = 0.6696$).

This hospital based Prospective Descriptive Study was conducted in the Department of General Surgery, Peerless Hospital and B. K. Roy Research Centre, Kolkata-700094, West Bengal from 1 October 2019 to 30 March 2021. The patients were initially evaluated in the general surgery outpatient department of a tertiary care hospital and then admitted for surgery. Patients who are <18 years or those who were unwilling for surgery and complicated Groin Hernia were excluded from the study.

The Following Variables were Studied: Patient demographics (gender and age), type of inguinal hernia (direct or indirect, complicated or uncomplicated), associated co morbidities, type of surgery and postoperative complications. Total 102 patients were present in this study. Inguinal hernia account for 75% of all abdominal wall hernias with and has a lifetime risk of 27% in men and 3% in women^[3,15]. On analysis of the OPD footfalls in most of the general surgery clinics worldwide, it has been observed that 95% of patients diagnosed with inguinal hernia who present to a surgical clinic are males. There has been a rising trend in the incidence of inguinal hernias in men from 11 per 10000 person years aged 16-24 years to 200 person years aged 75 years or above^[16]. We found that, 7 (6.9%) patients were ≤ 40 years old, 7 (6.9%) patients were 41-50 years old, 18(17.6%) patients were 51-60 years old., 39 (38.2%) patients were 61-70 years old and 31 (30.4%) patients were >70 years old. The mean Age of patients was 63.5588 ± 13.1153 years. In our

Table 1: Association Between Symptoms: Age in Groups

Symptoms	Age in Groups					Total	P-value
	≤40	41-50	51-60	61-70	>70		
Swelling	7 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (6.9%)	<0.0001
Swelling+ Pain	0 (0.0%)	7 (100.0%)	18 (100.0%)	39 (100.0%)	31 (100.0%)	95(93.1%)	
TOTAL	7 (100.0%)	7 (100.0%)	18 (100.0%)	39 (100.0%)	31 (100.0%)	102 (100.0%)	
Femoral Hernia							0.6784
No	7 (100.0%)	7 (100.0%)	18 (100.0%)	39 (100.0%)	30(96.8%)	101(99.0%)	
Yes	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.2%)	1(1.0%)	
Total	7 (100.0%)	7 (100.0%)	18(100.0%)	39(100.0%)	31 (100.0%)	102(100.0%)	

Table 2: Association Between Co-Morbidities: Age in Groups

Co-morbidities	Age in Groups					Total	P-value
	≤40	41-50	51-60	61-70	>70		
BPH	0(0.0%)	0(0.0%)	2(11.1%)	3(7.7%)	2(6.5%)	7(6.9%)	0.5103
BPH, Hypertension	1(14.3%)	1(14.3%)	0(0.0%)	0(0.0%)	1(3.2%)	3(2.9%)	
COPD	1(14.3%)	1(14.3%)	1(5.6%)	2(5.1%)	2(6.5%)	7(6.9%)	
COPD, HTN	0(0.0%)	0(0.0%)	2(11.1%)	2(5.1%)	2(6.5%)	6(5.9%)	
DM	1(14.3%)	0(0.0%)	4(22.2%)	7(17.9%)	8(25.8%)	20(19.6%)	
HTN	1(14.3%)	0(0.0%)	3(16.7%)	9(23.1%)	8(25.8%)	21(20.6%)	
Hypothyroidism	0(0.0%)	0(0.0%)	0(0.0%)	1(2.6%)	3(9.7%)	4(3.9%)	
No	3(42.9%)	5(71.4%)	6(33.3%)	15(38.5%)	5(16.1%)	34(33.3%)	
Total	7(100.0%)	7(100.0%)	18(100.0%)	39(100.0%)	31(100.0%)	102(100.0%)	

Table 3: Association Between Post Operative Pain: Age in Group

Post-Operative pain	Age in Group					Total	P-value
	≤40	41-50	51-60	61-70	>70		
No	2(28.6%)	4(57.1%)	12(66.7%)	27(69.2%)	24(77.4%)	69(67.6%)	0.1561
Yes	5(71.4%)	3(42.9%)	6(33.3%)	12(30.8%)	7(22.6%)	33(32.4%)	
Total	7(100.0%)	7(100.0%)	18(100.0%)	39(100.0%)	31(100.0%)	102(100.0%)	
Type of surgery gr							0.4976
LAP	1(14.3%)	3(42.9%)	2(11.1%)	8(20.5%)	6(19.4%)	20(19.6%)	
Open	6(85.7%)	4(57.1%)	16(88.9%)	31(79.5%)	25(80.6%)	82(80.4%)	
Type of surgery TAPP/TEP							0.6696
Open	6(85.7%)	4(57.1%)	16(88.9%)	31(79.5%)	25(80.6%)	82(80.4%)	
TAPP	1(14.3%)	3(42.9%)	1(5.6%)	7(17.9%)	5(16.1%)	17(16.7%)	
TEP	0(0.0%)	0(0.0%)	1(5.6%)	1(2.6%)	1(3.2%)	3(2.9%)	
Total	7(100.0%)	7(100.0%)	18(100.0%)	39(100.0%)	31(100.0%)	102(100.0%)	

study, 5 (4.9%) patients were Female and 97 (95.1%) patients were Male. Our study is slightly deviated with the Tripathy^[17] study. We observed that, 7 (6.9%) patients had Swelling and 95 (93.1%) patients had Swelling+Pain. Our study is not corroborating with the Tripathy^[17] study. It was found that, 15 (14.7%) patient's B/L Side was affected, 32 (31.4%) patient's Left Side was affected and 55 (53.9%) patient's Right Side was affected. Our study is corroborating with the Tripathy^[17] study. Our study showed that, 7 (6.9%) patients had BPH, 3 (2.9%) patients had BPH and Hypertension, 7 (6.9%) patients had COPD, 6 (5.9%) patients had COPD with HTN, 20 (19.6%) patients had DM, 21 (20.6%) patients had only HTN and 4 (3.9%) patients had Hypothyroidism in Co-morbidities. Our study is not corroborating with the Tripathy^[17] study. In our study, 35 (34.3%) patients were in direct group, 9 (8.8%) patients were in Direct+Indirect group and 57 (55.9%) patients were Indirect in group. Our study is corroborating with the Tripathy^[17] study. We examined that, 4 (3.9%) patients had wound infection possible cause was compromise in aseptic precaution and technique. Our study is not corroborating with the Tripathy^[17] study. 1 (1.0%) patient had Femoral Hernia. In our study, 20 (19.6%) patients had LAP surgery and 82 (80.4%) patients had Open surgery. 82 (80.4%) patients had Open surgery, 17 (16.7%) patients had TAPP surgery and 3 (2.9%) patients had TEP surgery.

Present study showed that, 33 (32.4%) patients had Post-Operative pain, 1 (1.0%) patient had Bleeding due to reactionary hemorrhage. We found that 2 (2.0%) patients had Chronic Groin Pain possible due to nerve entrapment from postoperative mesh fibrosis. 20 (19.6%) patients had Urinary retention and 1 (1.0%) patient had Recurrence which was following open Liechtenstein tension-free hernioplasty probably because of slippage of medial edge of mesh at pubic tubercle. Our study showed that the mean Duration was 17.3922±23.7933 months. The mean Post-Operative pain of patients was 2.4412±3.5699 and the mean Chronic Groin Pain of patients was .1275±.9084. We found that in ≤40 Age Group, all patients [7 (100.0%)] were Male. In 41-50 Age Group, all patients [7 (100.0%)] were Male. In 51-60 Age Groups, all patients [18 (100.0%)] were Male. In 61-70 Age Groups, 1 (2.6%) patient was Female and 38 (97.4%) patients were Male. In >70 Age Group, 4 (12.9%) patient were Female and 27 (87.1%) patients were Male. This was not statistically significant (p=0.1736). Present study showed that in ≤40 Group, 7 (100.0%) patients had Swelling. In 41-50 Group, 7 (100.0%) patients had Swelling+Pain. In 51-60 Group, 18 (100.0%) patients had Swelling+Pain. In 61-70 Group, 39 (100.0%) patients had Swelling+Pain. In >70 Group, 31 (100.0%) patients had Swelling+Pain. This was statistically significant (p<0.0001). Our study showed

that in ≤ 40 Group, 2 (28.6%) patient's Left Side was affected and 5 (71.4%) patient's Right Side was affected. In 41-50 Group, 1 (14.3%) patient's B/L Side was affected, 2 (28.6%) patient's Left Side was affected and 4 (57.1%) patient's Right Side was affected. In 51-60 Group, 4 (22.2%) patient's B/L Side was affected, 8 (44.4%) patient's Left Side was affected and 6 (33.3%) patient's Right Side was affected. In 61-70 Group, 5 (12.8%) patient's B/L Side was affected, 11 (28.2%) patient's Left Side was affected and 23 (59.0%) patient's Right Side was affected. In >70 Group, 5 (16.1%) patient's B/L Side was affected, 9 (29.0%) patient's Left Side was affected and 17 (54.8%) patient's Right Side was affected. This was not statistically significant ($p=0.7502$). We observed that in >70 Age Group, 1 (3.2%) patient had Femoral Hernia which was not statistically significant ($p=0.6784$). Ratan^[17] showed that 8 (7.14%) patients in various age groups had complicated inguinal hernia., whereas 6 (5.35%) patients had evidence of recurrent inguinal hernia. 91 (81.25%) patients suffered from associated co-morbid conditions. 85.71% patients with the diagnosis of uncomplicated inguinal hernia could be operated comfortably under spinal anesthesia. 3 (2.67%) patients in the age group of 61-80 years developed scrotal edema. 3 (2.67%) recurrences were observed and there was no peri/postoperative mortality. Present study showed that in ≤ 40 Group, 1 (14.3%) patient had BPH, Hypertension, 1 (14.3%) patient had COPD, 1 (14.3%) patient had DM and 1 (14.3%) patient had HTN in Co-morbidities. In 41-50 Group, 1 (14.3%) patient had BPH, Hypertension and 1 (14.3%) patient had COPD in Co-morbidities. In 51-60 Group, 2 (11.1%) patients had BPH, 1 (5.6%) patient had COPD, 2 (11.1%) patients had COPD, HTN, 4 (22.2%) patients had DM and 3 (16.7%) patients had HTN in Co-morbidities. In 61-70 Group, 3 (7.7%) patients had BPH, 2 (5.1%) patients had COPD, 2 (5.1%) patients had COPD, HTN, 7 (17.9%) patients had DM, 9 (23.1%) patients had HTN and 1 (2.6%) patient had Hypothyroidism in Co-morbidities. In >70 Group, 2 (6.5%) patients had BPH, 1 (3.2%) patient had BPH, Hypertension, 2 (6.5%) patients had COPD, 2 (6.5%) patients had COPD, HTN, 8 (25.8%) patients had DM, 8 (25.8%) patients had HTN and 3 (9.7%) patients had Hypothyroidism in Co-morbidities. This was not statistically significant ($p=0.5103$). We found that in ≤ 40 Group, 3 (42.9%) patients were in direct group and 4 (57.1%) patients were in indirect group. In 41-50 Group, 4 (57.1%) patients were in direct group, 1 (14.3%) patient was in Direct+Indirect group and 2 (28.6%) patients were in indirect group. In 51-60 Group, 7 (38.9%) patients were in direct group, 2 (11.1%) patients were in Direct+Indirect group and 9 (50.0%) patients were in indirect group. In 61-70 Group, 14 (35.9%) patients were in direct group, 4 (10.3%) patients were in Direct+Indirect group and 21

(53.8%) patients were in indirect group. In >70 Group, 7 (22.6%) patients were in direct group, 2 (6.5%) patients were in Direct+Indirect group and 21 (67.7%) patients were in indirect group. This was not statistically significant ($p=0.7858$). Our study showed that in ≤ 40 Groups, 1 (14.3%) patient had LAP surgery and 6(85.7%) patients had Open surgery. In 41-50 Groups, 3(42.9%) patient had LAP surgery and 4(57.1%) patients had Open surgery. In 51-60 Groups, 2(11.1%) patient had LAP surgery and 16(88.9%) patients had OPEN surgery. In 61-70 Groups, 8(20.5%) patient had LAP surgery and 31(79.5%) patients had Open surgery. In >70 Groups, 6(19.4%) patient had LAP surgery and 25(80.6%) patients had Open surgery. Association of Type of surgery TAPP/TEP with Age in Groups was not statistically significant ($p=0.4976$). In ≤ 40 Group, 6(85.7%) patients had Open surgery and 1 (14.3%) patient had TAPP surgery. In 41-50 Group, 4 (57.1%) patients had Open surgery and 3 (42.9%) patients had TAPP surgery. In 51-60 Group, 16(88.9%) patients had Open surgery, 1(5.6%) patients had TAPP surgery and 1 (5.6%) patient had TEP surgery. In 61-70 Group, 31(79.5%) patients had Open surgery, 7(17.9%) patients had TAPP surgery and 1(2.6%) patients had TEP surgery. In >70 Group, 25(80.6%) patients had OPEN surgery, 5 (16.1%) patients had TAPP surgery and 1(3.2%) patients had TEP surgery. Association of Type of surgery TAPP/TEP with Age in Groups was not statistically significant ($p=0.6696$). In ≤ 40 Group, 3 (42.9%) patients had Open surgery, 1 (14.3%) patient had TAPP surgery and 3 (42.9%) patients had TEP surgery. In 41-50 Group, 4 (57.1%) patients had OPEN surgery and 3 (42.9%) patients had TAPP surgery. In 51-60 Group, 12 (66.7%) patients had Open surgery, 5 (27.8%) patients had TAPP surgery and 1 (5.6%) patient had TEP surgery. In 61-70 Group, 28 (71.8%) patients had Open surgery, 8 (20.5%) patients had TAPP surgery and 3 (7.7%) patients had TEP surgery. In >70 Group, 23 (74.2%) patients had Open surgery, 5 (16.1%) patients had TAPP surgery and 3 (9.7%) patients had TEP surgery. This was not statistically significant ($p=0.1332$). It was found that in ≤ 40 Age Group, 5 (71.4%) patients had Post-Operative pain. In 41-50 Age Groups, 3 (42.9%) patients had Post-Operative pain. In 51-60 Age Groups, 6 (33.3%) patients had Post-Operative pain. In 61-70 Age Groups, 12 (30.8%) patients had Post-Operative pain. In >70 Age Group, 7 (22.6%) patients had Post-Operative pain. This was not statistically significant ($p=0.1561$). Taylor^[18] showed that complete data were available for 2665 patients (87•5 per cent)., 140 (5•3 per cent) developed SSI and 57 (2•1 per cent) thought the wound infected but this was not confirmed by the healthcare worker. Patients given a prophylactic antibiotic had a lower incidence of SSI ($P=0•002$), but neither increase in the American Society of Anesthesiologists grade of fitness for operation nor prolonged duration of operation was a

significant risk factor for infection. SSI after hernia repair is common and large clinical trials are required to determine whether the use of prophylactic antibiotics reduces the incidence of infection. We examined that in ≤ 40 Age Group, 1 (14.3%) patient had wound infection. In 41-50 Age Groups, 1 (14.3%) patient had wound infection. In 61-70 Age Groups, 2 (5.1%) patients had wound infection. This was not statistically significant ($p=0.1888$). We found that in 51-60 Age Groups, 1 (5.6%) patient had Bleeding which was not statistically significant ($p=0.3180$). Nikkolo^[19] found that the rate of chronic pain after inguinal hernia mesh repair can reach 51.6%. The reasons for post hernioplasty chronic pain are often unclear. It has been linked to nerve injury and nerve entrapment, but there is also association between the rate of chronic pain and the type of mesh used for hernia repair. The European Hernia Society recommends that a multidisciplinary approach at a pain clinic should be considered for the treatment of chronic postoperative pain. A uniform definition of chronic pain and its best assessment methods should be developed in order to conduct top quality multicenter randomized trials. Our study showed that in 41-50 Age Groups, 1 (14.3%) patient had Chronic Groin Pain and in 61-70 Age Groups, 1 (2.6%) patient had Chronic Groin Pain which was not statistically significant ($p=0.1511$). We observed that in ≤ 40 Age Group, 2 (28.6%) patients had Urinary retention. In 41-50 Age Groups, 2 (28.6%) patients had Urinary retention. In 51-60 Age Groups, 4 (22.2%) patients had Urinary retention. In 61-70 Age Groups, 7 (17.9%) patients had Urinary retention. In >70 Age Group, 5 (16.1%) patients had Urinary retention. This was not statistically significant ($p=0.8946$). McCormack^[20] found that laparoscopic repair takes longer and has a more serious complication rate in respect of visceral (especially bladder) and vascular injuries, but recovery is quicker with less persisting pain and numbness. Reduced hernia recurrence of around 30-50% was related to the use of mesh rather than the method of mesh placement. Failure on the part of surgery leads to an 'early recurrence' of inguinal hernia whereas the late recurrences may sometimes be attributable to tissue failure. In our study, 5.35% of the clientele underwent surgery with primary diagnosis of recurrent inguinal hernia. In our study, in 61-70 Age Groups, 1 (2.6%) patient had Recurrence which was not statistically significant ($p=0.8031$). We found that in ≤ 40 Age Group, the mean Duration was 41.2857 ± 45.2059 months. In 41-50 Age Groups, the mean Duration of patients was 9.4286 ± 7.6563 months. In 51-60 Age Groups, the mean Duration of patients was 16.7222 ± 19.8192 months. In 61-70 Age Groups, the mean Duration of patients was 15.7692 ± 21.9251 months and in >70 Age Groups, the mean Duration of patients was 16.2258 ± 22.3811 months. This was not statistically

significant ($p=0.0843$). Present study showed that in ≤ 40 group, the mean Post-Operative pain of patients was 5.1429 ± 3.5790 . In 41-50 group, the mean Post-Operative pain was 3.0000 ± 3.7859 . In 51-60 group, the mean Post-Operative pain of patients was 2.6111 ± 3.8062 . In 61-70 group, the mean Post-Operative pain was 2.4359 ± 3.7049 . In >70 group, the mean Post-Operative pain of patients was 1.6129 ± 3.0624 . This was not statistically significant ($p=0.2076$). Our study showed that in ≤ 40 group, the mean Chronic Groin Pain of patients was $.0000 \pm .0000$. In 41-50 group, the mean Chronic Groin Pain of patients was $.8571 \pm 2.2678$. In 51-60 group, the mean Chronic Groin Pain of patients was $.0000 \pm .0000$. In 61-70 group, the mean Chronic Groin Pain of patients was $.1795 \pm 1.1209$. In >70 group, the mean Chronic Groin Pain of patients was $.0000 \pm .0000$. This was not statistically significant ($p=0.2194$).

CONCLUSION

However, an elderly human shall not be denied surgical treatment of his/her inguinal hernia despite presence of a plethora of associated illnesses. It is pertinent to carefully assess such sensitive subset of patients in the pre-operative phase so as to achieve an uneventful recovery in the post-operative phase. Elderly patients without major co-existing illnesses are able to bear the stress of surgery, but a serious compromise in the health may occur in the presence of serious concomitant diseases by an acute exacerbation of the disease or an unwarranted complication, which may prolong hospitalization. The tension free mesh hernioplasty is a feasible, comfortably safe and cost-effective surgical technique for elderly adult population once a comprehensive pre-operative assessment and optimization of co-morbid conditions is done. Hence, a holistic approach is advisable and appreciable in the management of inguinal hernia in elderly adults and in this days laparoscopic hernia surgery has gained popularly because of dramatic recovery following the operation with minimal requirement of analgesic post operatively. It has also advantage of addressing, all the region of potential herniation through myopectineal orifice using a single large mesh from posterior aspect of defect.

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