

Study of the various factors deciding elective or emergency inguinal hernia surgery: a three year experience

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Abstract

Introduction: Hernia is derived from the Latin word for rupture¹. A hernia is defined as an abnormal protrusion of an organ or tissue through a defect in its surrounding walls. Although a hernia can occur at various sites of the body, these defects most commonly involve the abdominal wall, particularly the inguinal region. Risk factors that are useful in predicting complications in an adult patient with a groin hernia include old age, short duration, femoral hernia, and coexisting medical illness. Reluctance for surgery due to economic reasons coupled with a general fear for surgery is the main reason for an increasing number of elderly surgical patients in developing countries. **Aims and Objective:** Study of the Various Factors Deciding Elective or Emergency Inguinal Hernia Surgery **Methodology:** This was hospital based, Prospective study of the inguinal Hernia patients at tertiary care hospital of January 2012 to January 2015 three year duration. During three year duration total 182 patients of hernia were studied out of them 29 required emergency Operation while rest of the patients were treated electively. Data was analyzed by Standard Error of Proportion (z-score) calculated by Graph Pad Prism 6 Software. **Result:** Most common age group of Hernia patients was >60 i.e. (34.44%) followed by 51-60 i.e. (31.11%); 41-50 (17.22%); 31-40 (7.22%); 21-30(6.11%); 11-20 (3.33%) ;< 10 (1.67%). The factors like Age >60(p<0.005;z=5.87); H/o BPH(p<0.005;z=6.75); H/o COPD(p<0.005;z=3.37); H/o Diabetes(p<0.005;z=3.92) H/o Smoking(p<0.005;z=3.38);H/o Laborious work(p<0.005;z=4.88) were significantly associated with Emergency Inguinal hernia Surgery. **Conclusion:** Age >60; H/o BPH; H/o COPD; H/o Diabetes H/o Smoking; H/o Laborious work Were significantly associated with Emergency Inguinal hernia Surgery so all these factors meticulously studied in every patients to avoid complications and all surgeries should not be delayed to have complications.

Keywords: Inguinal Hernia, BPH (Benign Prostatic Hyperplasia), COPD (Chronic Obstructive Pulmonary Disease).

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INTRODUCTION

Hernia is derived from the Latin word for rupture¹. A hernia is defined as an abnormal protrusion of an organ or

tissue through a defect in its surrounding walls. Although a hernia can occur at various sites of the body, these defects most commonly involve the abdominal wall, particularly the inguinal region¹. Risk factors that are useful in predicting complications in an adult patient with a groin hernia include old age, short duration, femoral hernia, and coexisting medical illness. Reluctance for surgery due to economic reasons coupled with a general fear for surgery is the main reason for an increasing number of elderly surgical patients in developing countries². Most of the elderly patients requiring surgery also have associated comorbidities. Reluctance for operation leads to complications at some stage and it has been pointed out in many studies that the mortality and morbidity increases many fold if such hernias are

operated in the emergency setting in elderly patients^{2,3}. Elective repair of inguinal hernias is a low risk procedure which can be safely performed under general/regional/local anesthesia with few complications and low mortality⁴, and should be performed soon after diagnosis is made and following adequate preparation even in the extreme elderly⁵. The incidence of inguinal herniation is higher in the elderly aged >65 years⁶ and they also have Concomitant medical problems which increase the risk of surgery, but even though morbidity in elderly is reported to be three times higher than in younger patients, age or comorbidity should not be a barrier to inguinal hernia repair⁷. The choice of the time in which to perform the. Operation is also important due to complications which may arise because of the necessity of urgent operations, also taking into account the possible health deterioration of elderly patients with comorbid conditions⁸. The lifetime risk of inguinal hernia repair is high– 27% for men and 3% for women⁹. The mortality increases after emergency repairs⁹, hence elective repair should be considered as soon as diagnosis is made to prevent any adverse outcome. Mortality risks following elective hernia repair is low even in older age groups, but, it carries a substantial mortality risk if it is an emergency operation¹⁰. In a study by Nilsson *et al.*, the mortality risk increases seven fold in an emergency operation as compared to an elective repair and 20 fold if bowel resection is undertaken.¹⁰

AIMS AND OBJECTIVES

Study various factors associated with Elective or Emergency Inguinal Hernia Surgery.

MATERIAL AND METHODS

This was hospital based, Prospective study of the inguinal Hernia patients at tertiary care hospital of January 2012 to January 2015 three year duration. All patients of inguinal hernia who was having strangulated hernia, septicemia, or complications like appendicitis with perforation or gangrene of hernia site so all such necessary emergency situation were operated in emergency while other patients were operated electively. During three year duration total 182 patients of hernia were studied out of them 29 required emergency Operation while rest of the patients were treated electively. Data was analyzed by Standard Error of Proportion (z-score) calculated by Graph Pad Prism 6 Software.

RESULT

Table 1: Age wise Distribution of the Surgery patients

| Age group | No. | Percentage |
|--------------|------------|-------------|
| <10 | 3 | 1.67% |
| 11-20 | 6 | 3.33% |
| 21-30 | 11 | 6.11% |
| 31-40 | 13 | 7.22% |
| 41-50 | 31 | 17.22% |
| 51-60 | 56 | 31.11% |
| >60 | 62 | 34.44% |
| Total | 182 | 100% |

Most common age group of Hernia patients was >60 i.e. (34.44%) followed by 51-60 i.e. (31.11%); 41-50 (17.22%); 31-40 (7.22%); 21-30(6.11%); 11-20 (3.33%); < 10 (1.67%).

Table 2: Sex Wise distribution of the Surgery patients

| Sex | No | Percentage |
|--------------|------------|-------------|
| Male | 96 | 52.74% |
| Female | 86 | 47.25% |
| Total | 182 | 100% |

Majority of the Hernia patients were Male i.e. 52.74% compared to Female 47.25%.

Table 3: Distribution of the Inguinal Hernia Patients as per type of Surgery and Associated Factors

| Associated Factors | Emergency Surgery (n=29) No.(%) | Elective Surgery (n=153) No. (%) | p-value |
|--------------------|---------------------------------|----------------------------------|-----------------|
| Age >60 | 17(58.62%) | 18 (11.76%) | p<0.005; z=5.87 |
| H/o BPH | 16(55.17%) | 22(14.37%) | p<0.005; z=6.75 |
| H/o COPD | 21(72.41%) | 25(16.33%) | p<0.005; z=3.37 |
| H/o Diabetes | 15(51.72%) | 27(17.64%) | p<0.005; z=3.92 |
| H/o Smoking | 18(62.06%) | 45(29.41%) | p<0.005; z=3.38 |
| H/o laborious work | 24(82.75%) | 52(33.98%) | p<0.005; z=4.88 |

The factors like Age>60 (p<0.005;z=5.87); H/o BPH(p<0.005;z=6.75); H/o COPD (p<0.005;z=3.37); H/o Diabetes (p<0.005;z=3.92); H/o Smoking(p<0.005;z=3.38); H/o Laborious work (p<0.005;z=4.88) were significantly associated with Emergency Inguinal hernia Surgery.

DISCUSSION

Elective repair of inguinal hernias is a low risk procedure which can be safely performed under general/regional/local anesthesia with few complications and low mortality¹⁴, and should be performed soon after diagnosis

is made and following adequate preparation even in the extreme elderly¹⁵. The incidence of inguinal herniation is higher in the elderly aged >65 years¹⁶ and they also have concomitant medical problems which increase the risk of surgery, but even though morbidity in elderly is reported to be three times higher than in younger patients, age or comorbidity should not be a barrier to inguinal hernia repair¹⁴. In our study the findings are Most common age group of Hernia patients was >60 i.e. (34.44%) followed by 51-60 i.e. (31.11%); 41-50 (17.22%); 31-40 (7.22%); 21-30 (6.11%); 11-20 (3.33%); < 10 (1.67%). The factors like Age >60 ($p<0.005$; $z=5.87$); H/o BPH ($p<0.005$; $z=6.75$); H/o COPD ($p<0.005$; $z=3.37$); H/o Diabetes ($p<0.005$; $z=3.92$) H/o Smoking ($p<0.005$; $z=3.38$); H/o Laborious work ($p<0.005$; $z=4.88$) were significantly associated with Emergency Inguinal hernia Surgery. All above factors may not be directly linked to Emergency surgeries but may complicate normal hernia to complicated like Strangulated hernia or associated complications like gangrene of hernia site and septicemia which require emergency laparotomy for the hernia. These findings are similar to in our study Majority of the Hernia patients were Male i.e. 52.74% compared to Female 47.25%. The male to female ratio is 9:1 Bax T *et al*¹¹ in a study by Primatesta *et al.*¹², 90% of operations were on men, and Dabbas *et al.*¹³, reported that inguinal hernia repairs were carried out in total almost 15 times more commonly in men than in women.

CONCLUSION

Age >60; H/o BPH; H/o COPD; H/o Diabetes H/o Smoking; H/o Laborious work Were significantly associated with Emergency Inguinal hernia Surgery so all these factors meticulously studied in every patients to avoid complications and all surgeries should not be delayed to have complications.

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