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# INGUINAL HERNIA MANAGEMENT AMONG CHRONIC RENAL FAILURE PATIENT WITH VALVULAR HEART DISEASE; A CASE REPORT AND REVIEW OF THE LITERATURE

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## ABSTRACT

Inguinal hernia occurs when fat or part of the small intestine pushes through a weak spot in the groin causes a bulge in the groin or scrotum. The bulge may hurt or burn. It can be classified into direct or indirect inguinal hernia. An 81 years old gentleman had been diagnosed with left inguinal hernia and admitted to the ward after complaining of sudden onset of sharp pain at the hernia area. Patient has history of anemia with chronic renal failure and underlying valvular heart disease. Echocardiogram (ECHO) showed ejection fraction of 39%. Before hernioplasty is carried out in this patient, few things need to be considered. Preoperative assessment of risk versus benefit should be conducted. Since patient is a geriatric patient and he has valvular heart disease, hernioplasty should be carried out under elective condition with the use of local anesthetic since fewer complications had been reported under this condition.

**Key Words:** Inguinal Hernia; Chronic Renal Failure; Valvular Heart Disease.

## INTRODUCTION

Inguinal hernia is a condition in which intra-abdominal fat or part of the small intestine bulges through a weak area in the lower abdominal muscles. Inguinal hernia occurs in the groin which is the area between the abdomen and the thigh. It appears as a bulge on one or both sides of the groin. It can occur in any time from infancy to adulthood. It can increases in size with time and the prevalence is more common in male than in female.[1]

There are two types of inguinal hernia which are direct and indirect inguinal hernia. Direct inguinal hernia is caused by connective tissue degeneration of the abdominal muscles which causes weakening of the muscles during the adult years. It only occurs in male and develops gradually due to continuous stress on the muscles such as lifting heavy objects, straining on the toilet, weight gain and chronic cough. While indirect inguinal hernia is congenital hernia which commonly occurs in male than in female due to the ways male develop in the womb. The entrance of the inguinal canal at the inguinal ring sometimes does not close as it should just after birth leaving weakness in the abdominal wall. Fat or part of the small intestine slides through the weakness into the inguinal canal causing a hernia.[1]

The symptoms that indicate inguinal hernia include discomfort or sharp pain at the hernia site. These may be worse when standing, straining or lifting heavy objects. Most people will complain about a growth or bulge that feels tender and is growing. The condition can be worsen when the hernia is getting bigger and strangulated which means that the tissue stuck inside the hole and its blood supply has been cut off. Urgent surgery is needed if this occurs.

Although inguinal hernia can occur in both genders, the disorder predominantly affects men (male: female ratio is 7:1).[1] In general, inguinal hernia affects all ages, but the incidence increases with age. The lifetime risk of inguinal hernioplasty is approximately 27 % for men and 3 % for women. In the US, approximately 4.5 million people have inguinal hernia with around 500,000 new inguinal hernias diagnosed annually. About 750,000 procedures were performed in 2003 across the US for inguinal hernia. Although the incidence and prevalence worldwide is unknown, it is estimated that over 20 million surgical procedures for inguinal hernia are performed each year. The specific operation rates vary between countries, but range from 100 to 300 procedures per 100,000 people per year.[2]

## CASE PRESENTATION

An 81 years old, Malay gentleman had been admitted to the surgical ward after complaining of intolerable sharp pain of sudden onset at the hernia area. Patient had been admitted before and was diagnosed with left irreducible inguinal hernia and been operated. A hernioplasty was scheduled for the patient but refused to be operated.

The patient is also known to have anemia with chronic renal failure and underlying valvular heart disease. Echocardiogram (ECHO) did which showed ejection fraction of 39%. On current admission, patient still able to have bowel output and claimed vomited multiple times with no blood discharge. He also claimed that he had no fever, no current trauma to the left abdomen, no heavy lifting at home, no chronic cough and no straining.

Physical examination on admission revealed an alert, conscious old man with no jaundice and well hydrated. His $S_1$ and $S_2$ sounds of the heart can be heard with no murmur and regular rhythm. His lung was clear and his abdomen examination revealed soft, non tender and left inguinal swelling.

On this admission, he was planned for hernioplasty under local anesthetic to a date that will be determined later. He was given IV tramadol 50 mg TDS for management of his inguinal hernia pain and IV metoclopramide 10 mg TDS to counter nausea and vomiting caused by administration of tramadol. Hematinic agents are also continued in this patient for his anemia.

## DISCUSSION

The patient is complaining of pain at the hernia area. Thus, the use of tramadol for pain relief is very appropriate. Tramadol is an opioid analgesic agent. It has significant advantages over other opioids because it has lack of significant respiratory depressant effects, less likely to cause tolerance and dependence and it has low adverse effects. The adverse effects resulting from tramadol can be easily prevented or treated. Nausea can be reduced by administering tramadol as slow intravenous injection. Nausea and vomiting also can be prevented with metoclopramide. Thus, it is the analgesic of choice for the treatment of moderate to severe pain.[3]

Hernioplasty is one of the most painful surgeries with half of the patients suffering moderate to severe pain after the procedure. Postoperative pain not only can cause distress to the

patient but it also can cause prolong recovery time and adversely affects patient's outcome. In a study conducted by Mentes et al., it was found that lornoxicam 8 mg IV BID and tramadol 1 mg/kg at the end of surgery and every 6 hours up to 24 hours after hernioplasty provided rapid and effective analgesic effect and are well tolerated.[4]

The use of local anesthetic (LA) and general anesthetic (GA) in elderly also is a concern in a surgical procedure. A recent randomized trial involving patient with the mean age of 55 years reported no difference in outcomes when comparing LA and GA in patients undergoing hernioplasty. However, in a large series of elective hernioplasty under GA conducted by Lewis et al. found a 10% incidence of postoperative chest infection and overall 21% complication rate in patients over 65 years of age.[5] In another small study of 41 patients by Prado found that hernioplasty under LA had good tolerability and low complication rate.[6] Elderly patients with cardiovascular problems in the study have been at greater risk of cardiac and chest postoperative complications than younger group if GA is used.[5] This is supported by another study which found GA resulted in the highest frequency and severity of cardiopulmonary complications in poorly prepared patients and in patients with cardiopulmonary diseases especially those undergoing emergency intervention.[9] The uses of GA in elderly will results in expensive and unnecessary preoperative screening, greater risk of postoperative complications and delay in hospital discharge with further increase in costs. Elective hernioplasty under LA in the elderly has a good outcome, even if there are significant co-morbidities.[5,7,9]

Emergency hernioplasty in elderly population carries a high mortality risk. It is difficult to evaluate the result of emergency surgical intervention in elderly patients with complicated hernias. However, this does not make aging as an absolute contraindication for any type of surgery. Planned elective surgical operations in adequately prepared patients have a much better prognosis than emergency procedures.[9] In a study by Malik et al., it was found that the mortality rate was high with emergency surgery (6 deaths) while the mortality rate for elective surgery is low (1 death). Besides, the postoperative complications are more frequently seen in emergency hernioplasty as compared to elective hernioplasty. The study confirms a low mortality in simple, uncomplicated hernia operated electively compared to delayed, complicated hernias in unfit elderly population.[8]

Study conducted by Nehme, it was found that of 235 patients who underwent emergency hernioplasty, 131 patients suffered a total of 310 complications including 18 deaths. The group of patients with major diseases of the cardiovascular or pulmonary system had a higher frequency of postoperative complications of the affected system. The group of 1,044 patients who had elective operations had a total of 273 complications and 14 deaths. In the study of 1,496 patients, there were 39 deaths. Of the patients who died, 16 had intestinal obstruction or strangulation for more than 48 hours. A history of cardiovascular disease was noted in all the others, as well as in four patients in the group with obstruction.[9] Thus, it is crucial to assess cardiovascular and respiratory conditions and also other diseases such as diabetes, hypertension, peripheral vascular diseases and smoking in elderly patient preoperatively to avoid any serious complications.[10]

## CONCLUSION

Pain associated with hernia and postoperative pain should be managed appropriately to improve quality of life and patient's outcome. Local anesthetic is preferred over general anesthetic for hernioplasty due to its lower complications, lower prolonged hospitalization and good outcome. Elderly patients with co-morbid conditions have a significantly high morbidity and mortality especially if operated in emergency situation. An early elective repair is strongly recommended to improve the outcome of surgery. Elective hernioplasty is safer with low postoperative complications as compared to emergency hernioplasty which causes more complications especially with the use of general anesthetic and with co-morbid conditions. It can be concluded that inguinal hernia in elderly patients should be repaired under elective conditions in the properly prepared patient, preferably while under local anesthesia.

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