Strangulated Left Lateral Inguinal Hernia in a 54-Year-Old Woman: A Case Report

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Abstract

Introduction: Around 20 millions of hernia repairs were done annually with women presenting least cases. The occurrence of inguinal hernia in female patients is 3-6%, which is lower than men (27-43%). Inguinal hernia itself may present as a bulge in the groin in which the definitive treatment is through surgery. Although many research were done for hernia repair in men, guidelines for women are still currently observed with less favourable outcomes.

Case illustration: A 54-year-old woman came to the ED complaining of pain of protruding bulge in the groin area for two hours. The patient has had a history of bulging for three years, which was previously reducible. Examination of the inguinal region revealed a lump with a diameter of +/- 4 cm and painful when palpated. Abdominal USG showed a left inguinal hernia consisting intestinal tissues. Open herniotomy with mesh grafting was performed and the patient got discharged after 4 days of hospitalisation.

Conclusion: Lifetime risk for development of inguinal hernia is higher in men compared to women, but the rate of emergency procedures in women is 3 to 4-fold higher than in men. Guidelines for hernia repair in women show less favourable results than in men. Therefore, special steps must be taken in the repair of inguinal hernia in women.

Introduction

Around 20 millions of hernia repairs were done annually, with inguinal hernia being the most common type of groin hernia. Other types of groin hernia include scrotal and femoral hernia. The term hernia itself has the meaning of protrusion. Therefore, inguinal hernia means protrusion of a peritoneal pouch that consists of intestinal organs caused by a weakness or defect in the abdominal wall.[1] Prevalence of inguinal hernia is higher in men than women with 27-43% occurrence in men and 3-6% occurrence in women. Incidence of inguinal hernia is also higher around the age group of 40-59 years old.[2] Inguinal hernia can be acquired or a form of congenital disease in some cases.[3]

Inguinal hernia is also classified into two groups, direct inguinal hernia and indirect inguinal hernia.[4] Indirect inguinal hernia are about twice as common as direct inguinal hernias. There is a hypothesis that all indirect inguinal hernias result from a processus vaginalis that had never closed, this hypothesis is supported by research by Jiang and Mouravas that adult indirect

inguinal hernias may develop after the long-term build-up of pressure on a processus vaginalis that had closed along its entire length except at the neck of the hernia sac.[5,6]

Inguinal hernia usually presents with a bulge in the groin. It may become more noticeable when the patient is standing up, coughing, or straining. It can be accompanied with a mild burning or sharp pain that radiates to the scrotum, testes, or inner thigh. Although, if presented with a severe pain and constipation, it might be signs for incarcerated or strangulated hernia. Management of inguinal hernia is through surgery by returning the abdominal contents back and closing the hernial defect with a mesh graft to ensure a lesser chance of recurrency.[3]

There was an anatomical study of the inguinal region focusing on the anatomic differences in men and women and the relationship to hernial formation.[7] The result of the study is there was a significant difference between the diameters which were almost twice as large in men, while the width of the rectus abdominis muscle was significantly greater in women. These anatomical differences are the possible explanation of why the risk involving groin hernia development might be lower in women than men.[7] Higher incidence of inguinal hernia in men leads to the question of management differences of inguinal hernia in men and women. There is a growing problem in the lack of data involving inguinal hernia repair in women.[7] Although guidelines for inguinal repair in women are currently observed, less favourable outcomes are still visible. In this case report, we illustrated the treatment given for a woman patient with inguinal hernia. The authors are hopeful that this information will be helpful for further research around this topic.

Case Illustration

A 54-year-old lady came to the emergency ward complaining of pain and protruding bulge in the groin area for two hours. The characteristic of the pain was described as sharp with a pain scale of 8/10. The pain radiated to the left knee and felt constantly. The patient has had a bulge in the groin area for 3 years now. The bulge was reducible until 17 hours ago when it became irreducible. The patient felt that the bulge became bigger over time. The patient denied any redness and swelling on the bulge. The patient vomited water and food once in the emergency ward with no sign of bleeding. There were no signs of fever and extreme weight loss. The patient has hypertension and consumes amlodipine 10 mg once a day regularly. The patient does not have any history of diabetes mellitus and cholesterol.

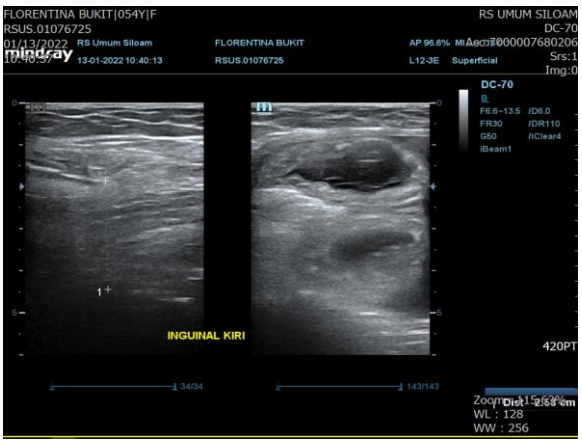
When she first arrived in the emergency ward, she was screened for COVID-19. The result came back negative. The vital signs were stable. The examiner found a lump on the inguinal region with a diameter of +/- 4 cm, immobile, soft and painful when palpated. Examination of other regions was unremarkable. The result of blood work was elevated ESR of 22 mm/hour and reduced potassium level of 3.4 mmol/L. Abdominal ultrasound was performed and showed a left inguinal hernia with a defect of +/- 2,58 cm consisting intestinal tissues.

She was diagnosed with strangulated left lateral inguinal hernia. The plan was to do an urgent open herniotomy with mesh grafting. She was given antibiotic ceftriaxone 1 gram intravenously twice daily and omeprazole 40 mg intravenously twice daily. Fluid administration of Lactated Ringers 500 mL every 8 hours intravenously was given. Intraoperative findings revealed

hernial sac consist of one viable loop of intestinal tissues which is then pushed back into the peritoneal wall. After the removal of hernial sac, the operator proceeded to place a mesh graft on the inguinal floor. One day post-herniotomy, the patient complained of abdominal pain around the incision site when in a sitting position. Vital signs were normal. Examination of the incision site was unremarkable. Day two post herniotomy, the patient still complained of abdominal pain around the incision site, but she felt much better. Vital signs were normal, and examination of the incision site was unremarkable. The patient was discharged on day three post-herniotomy and given oral drugs such as cefixime 200 mg twice daily, metronidazole 500 mg thrice daily, ketorolac 10 mg thrice daily and omeprazole 20 mg twice daily.

Imaging and Intraoperative Pictures

Figure 1. Protruding bulge in the groin area



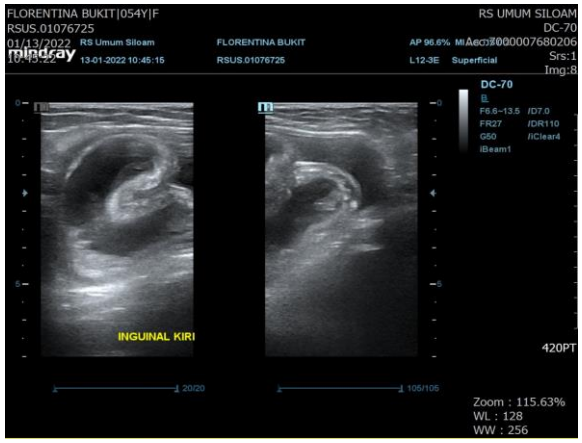


Figure 2 and 3. Abdominal ultrasound showed a left inguinal hernia with a defect of +/- 2,58 cm consisting intestinal tissues

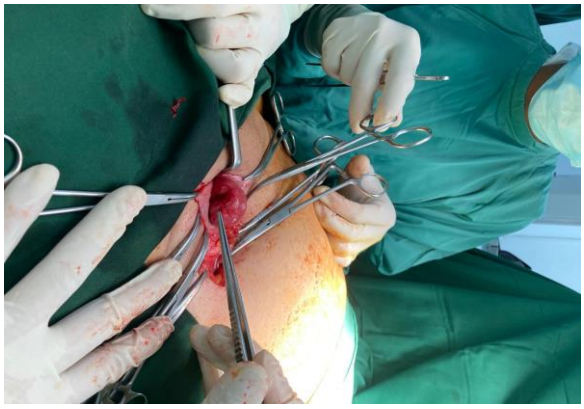


Figure 4. Opened hernial sac revealed one viable intestinal loop

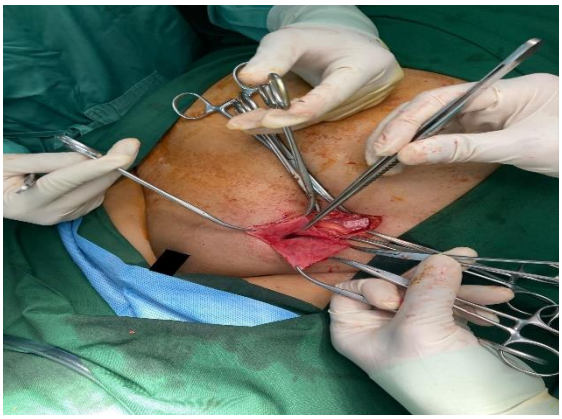


Figure 5. Opened hernial sac

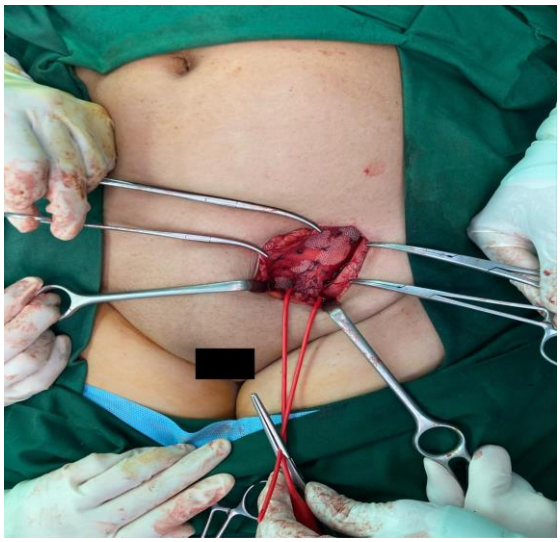


Figure 6. Placed mesh grafting on the inguinal floor

Discussion

Inguinal hernia in women occurs when the inguinal canal is being weak. This canal run diagonally from the hip bone down to pubic bone, making the groin area connected to the abdomen. The canal contains blood vessels, nerves, lymphatic vessels, and it also contains the round ligament that supports the uterus. When the part of the abdominal content bulges through a gap in the abdominal wall this leads to inguinal hernia. The inguinal canal in women is narrower therefore inguinal hernias are much less common in women than men, but weakness of the connective tissue can increase the risk of having an inguinal hernia in women.[8]

Surgery for tension-free inguinal hernia is highly considered in women than men because women have higher risk of complication. During surgery, the abdominal content is moved back into the abdominal cavity and the sac is excised. The gap in the abdominal wall is then closed off with synthetic mesh or reinforced with tissue from another part of the body. Adding synthetic mesh strengthens the abdominal wall better than only sewing the gap with the neighbouring connective tissue and this also makes faster recovery post- surgery.[9]

During surgery of the inguinal hernia in women, a femoral hernia should always be ruled out because women who have an inguinal hernia are more likely to have a hidden femoral hernia and this can only be assessed during surgery. The incidence of femoral hernia in women is 16.7-37%.[7] If a femoral hernia is not reliably ruled out or not appropriately treated, recurrence rate might be higher. Based on systematic review and meta-analysis there is a higher recurrence rate in females caused by femoral hernias being overlooked during primary surgery. This is true for the lichtenstein open techniques, where the transversalis fascia is not routinely opened.[10,11]

A systematic search performed by Ferdinand K et al in 2019, showed that there is a lifetime risk of 3-5.8% of developing hernia in women. The proportion of emergency procedures done in women is 14.5%, which is higher than men with the proportion of 3.0%. The number of participants in each gender may also greatly affect the number. But we can conclude that there is a higher chance of women getting into an emergency procedure than men by 3 to 4-fold. From the research, they discussed the surgical intervention suited for inguinal hernia repair in women. The guidelines recommended Total Extraperitoneal Patch (TEP) and Transabdominal Peritoneal Patch (TAPP) laparo-endoscopic techniques or open preperitoneal mesh placement technique if femoral hernia is present. The research also

concluded no recurrence when performing modified Nyhus-Condon femoral hernia repair with mesh and Lichtenstein repair with insertion of a cone of polypropylene mesh into the femoral canal. Although, a high early recurrence rate might occur when presence of femoral hernia is overlooked. Women also have a higher chance of chronic postoperative pain that occurred in 24.2% of patients.[7]

Studies done in 2011 by Jonathan C et al showed the importance of doing a laparoscopic repair in women in the detection of previously undiagnosed femoral hernia, which may occur in 40% of cases. Although, in a retrospective chart review done in 2012 by A. Ashfaq showed a far lower rate (2%) in femoral hernia detection. There were no statistically significant differences between laparoscopic versus open approach in recurrence of hernia (45% versus 55% respectively).[12,13]

Conclusion

There are so many special characteristics for inguinal hernia repair in women that must be taken into account, so it is very important to know all the guidelines including the specific recommendations for the diagnosis and treatment of female inguinal hernia. Beside the consideration of choosing the right guideline, the outcome of the treatment is less favourable in women than in men therefore repair of inguinal hernia in women should be performed by an experienced surgeon that can be aware of all the specific aspects and consideration of the guideline.

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