

Comparison study of herniorrhaphy at emergency and elective situations

Estudio comparativo de herniorrafía en emergencia y en situaciones electivas.

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ABSTRACT

Inguinal hernia is one of the most common urgent problems encountered by surgeons. There were 145 patients treated due to inguinal hernia diagnosis. Out of 44 patients who were operated under emergency conditions. About 131 cases (106 male and 25 female) were treated with unilateral open preperitoneal mesh repair. Patients were examined in terms of postoperative complications. Data collected included as age, gender, medical history, surgery conditions, incarceration and strangulation. There were total of 145 patients included in the study; in which 44 of them (29 male and 15 female, range of age: 30- 72) (group I) were operated under emergency conditions and 101 of them (51 male and 50 female, range of age: 25-78) (group II) were operated under elective conditions. There was comorbidity in 31 patients of group I and 77 patients of group II. About 47.7% (n=21) of cases who underwent emergent surgery due to incarceration, while 43.6% (n=44) of cases who were operated under elective conditions. There were 12 femoral hernias in group I and 19 femoral hernia in group II. There is no difference between postoperative complication and recurrence rates in inguinal hernia cases operated under elective conditions and under emergency conditions. It is cheaper than laparoscopic repair, lead pain control and lack of neuropathic pain, has less testicular complications, and it is more advantageous than other open approaches.

Keywords: herniorraphy, inguinal hernia, femoral hernia, laparoscopy, incarceration.

INTRODUCTION

Inguinal hernia is one of the most common urgent conditions encountered in surgical practice. The most important complications of inguinal hernia are incarceration, strangulation and intestinal obstruction. There is a consensus that this hernia should be managed under elective conditions to avoid complications [1-3]. However, about 5-15% of cases undergo operation in emergency conditions [4-6]. Today, there is no consensus among surgeons about the proper surgical procedures to be used for the management of incarcerated hernia.

The anterior approach is the most preferred surgical option for inguinal hernias repair today.

However, sufficient exploration may not always be possible with the anterior approach in the incarcerated-strangulated hernias; therefore, additional abdominal incision may be needed [7].

Wantz et al. developed open preperitoneal mesh repair technique for the treatment of unilateral hernia [9]. In addition, the preperitoneal mesh repair has been shown to be reliable in cases undergoing strangulated and necrotic bowel resection [10].

The study aim was to compare the postoperative clinical results who were treated under elective and emergency conditions of patients with inguinal hernia.

METHODS

Cases, who underwent surgery due to inguinal hernia diagnosis between 2021 and 2022, were investigated retrospectively. There were 145 patients treated due to inguinal hernia diagnosis. Out of 44 patients who were operated under emergency conditions. About 131 cases (106 male and 25 female) were treated with unilateral open preperitoneal mesh repair. Patients were examined in terms of postoperative complications. Data collected included as age, gender, medical history, surgery conditions, incarceration and strangulation. Data was collected and analyzed on a computer workstation Microsoft Windows 2017.

RESULTS

There were total of 145 patients included in the study; in which 44 of them (29 male and 15 female, range of age: 30-72) (group I) were operated under emergency conditions and 101 of them (51 male and 50 female, range of age: 25-78) (group II) were operated under elective conditions. There was comorbidity in 31 patients of group I and 77 patients of group II. About 47.7% (n=21) of cases who underwent emergent surgery due to incarceration, while 43.6% (n=44) of cases who were operated under elective conditions. There were 12 femoral hernias in group I and 19 femoral hernia in group II. (Table 1)

Table 1. Demographic.

Variables	Group I (n=44)	Group II (n=101)
Range of age	30-72	25-78
Gender	Male	29
	Female	51
Comorbidity	31	77
Recurrent	21	44
Femoral hernia	12	19

Comparing in terms of complications; there were 8 seroma, 4 wound infection, 7 urinary retentions, and 4 scrotal edema in Group I whereas 25 seroma, 9 urinary retention and 1 scrotal swelling in Group II.

Table 2. Complication.

Group	Recurrence	Seroma	Wound infection	Urinary retention	Scrotal edema
I	21	8	4	7	4
II	44	25	-	9	1

DISCUSSION

Recurrent hernias, presence of strangulation and incarceration, femoral hernias and high-risk cases are among the preperitoneal hernia repair indications [11]. Open preperitoneal mesh hernia repair can be applied in all types of recurrent hernias. The recurrence rate of the technique is very low and may reach to 15% [12-14]. In addition, successful data have been obtained in terms of complication rates [7,10,15]. The complication rates of preperitoneal repairs in recurrence hernia were very low in both groups also in our study. Considering recurrence rates, our results were also satisfactory. There was no difference between emergency group and elective group in terms of recurrence. That 6/7 of the recurrences had been observed in both groups after surgeries conducted within the first nine years suggest a relationship between experience and recurrence.

The mesh use in strangulated hernia has been seen to be safe by many studies [10,17-22]. However, strangulated hernia surgery with Lichtenstein technique can create problems in terms of exploration and additional abdominal incision required [22]. Therefore, preperitoneal open approach would be a good choice for both successful treatments of different hernia combinations.

The presence of comorbidities [23,24] and older ages [23,25,26] rise postoperative mortality. Wound infection developed in a patient with resection in Group I. Therefore, treatment with open dressing and antibiotics was used then discharged on the postoperative 10th day. Wound infection was not observed in the group operated electively. The remarkable point is that there was no wound infection was found in any other patients that underwent operation for an emergency condition.

The complication rate was 26.8% in group II patients where open preperitoneal hernia repair was conducted under elective conditions. Com-

paring two groups, there was no difference in terms of postoperative complications and recurrence.

In another study, it has been concluded that preperitoneal repair should be preferred in recurrent hernia. This is especially true in males due to testicular complications, although the rates of early recurrence and pain are approximate in open tension-free repair and preperitoneal repair [27].

Another minimal invasive method in the presence of strangulation is to check abdomen inside with combined laparoscopy and anterior inguinal repair [28].

Another reason for preferring this approach to inguinal canal from preperitoneal space is less invasive than trans-inguinal anterior approach [29].

In addition, more than one mesh can be placed in different directions (lateral and anterior) in the repair of large hernias. The mesh can be fixed by itself without placing fixation sutures with the help of abdominal pressure after placing mesh [30].

At emergency conditions, there are different complications such as hematoma, perforation, mesh migration and bowel obstruction which are not observed in this study.

Although open and laparoscopic approaches have approximate values in recurrence hernias in terms of clinical course and efficiency results [31-34].

It has been reported that preperitoneal repair lead to less pain and following neuropathic pain associated with nerve injury and observed less in preperitoneal repair according to a study comparing open preperitoneal and Lichtenstein repairs [35].

CONCLUSION

There is no difference between postoperative complication and recurrence rates in inguinal hernia cases operated under elective conditions and under emergency conditions. It is cheaper than laparoscopic repair, lead pain control and lack of neuropathic pain, has less testicular complications, and it is more advantageous than other open approaches.

Declaraciones

Los autores declaran no tener conflictos de interés de ninguna clase, que el trabajo ha sido aprobado por el comité de ética responsable en el lugar de trabajo y no declaran medios de financiación del trabajo realizado. El artículo fue remitido con el consentimiento de todos los autores para su evaluación y publicación.

Declarations

The authors declare that they have no conflicts of interest, that the work has been approved by the ethics committee responsible in the workplace, and do not declare means of financing of the work carried out. The article was sent with the consent of all authors for their evaluation and publication.

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RESUMEN

La hernia inguinal es uno de los problemas urgentes más comunes encontrados por los cirujanos. Hubo 145 pacientes tratados debido al diagnóstico de hernia inguinal. De 44 pacientes que fueron operados en condiciones de emergencia. Alrededor de 131 casos (106 hombres y 25 mujeres) fueron tratados con reparación de malla preperitoneal abierta unilateral. Los pacientes fueron examinados en términos de complicaciones postoperatorias. Los datos recopilados incluidos como edad, sexo, historial médico, afecciones de cirugía, encarcelamiento y estrangulamiento. Hubo un total de 145 pacientes incluidos en el estudio; en el que 44 de ellos (29 hombres y 15 mujeres, rango de edad: 30-72) (Grupo I) fueron operados en condiciones de emergencia y 101 de ellas (51 hombres y 50 mujeres, rango de edad: 25-78) (grupo II) fueron operados en condiciones electivas. Hubo comorbilidad en 31 pacientes de grupo I y 77 pacientes del grupo II. Alrededor del 47.7% (n = 21) de los casos que se sometieron a cirugía emergente debido al encarcelamiento, mientras que el 43.6% (n = 44) de los casos que fueron operados en condiciones electivas. Había 12 hernias femorales en el Grupo I y 19 Hernia femoral en el Grupo II. No hay diferencia entre la complicación postoperatoria y las tasas de recurrencia en los casos de hernia inguinal operados en condiciones electivas y en condiciones de emergencia. Es más barato que la reparación laparoscópica, el control del dolor de plomo y la falta de dolor neuropático, tiene complicaciones menos testiculares, y es más ventajoso que otros enfoques abiertos.

Palabras clave: hernerafia, hernia inguinal, hernia femoral, laparoscopia, encarcelamiento.