



Study on Medication Considerations after Surgery in Inguinal Hernia

¹DR. N. Junior Sundresh, ²DR. C. K. Dhanapal, ³S. Baranika., ⁴A. Deepika.

1 Professor, Department of general surgery, Government Cuddalore Medical College and Hospital (GCMCH), Chidambaram, Tamilnadu India.

2 Professor, Department of pharmacy, Annamalai University, Chidambaram, Tamilnadu India.

3 Department of pharmacy, Annamalai University, Chidambaram, Tamilnadu India.

4 Department of pharmacy, Annamalai University, Chidambaram, Tamilnadu India.

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ABSTRACT

Background: Inguinal hernias are the common causes of surgical admissions and referral of patients from Primary physicians. Although we have made a great progress in treating hernia the management of its complications has progressed only a little. An **inguinal hernia** is a condition in which part of the intestine or fatty tissue pushes through a weak spot or opening in the lower abdominal wall, specifically in the inguinal canal (a passage in the lower abdomen). The inguinal canal is located in the groin area, and this type of hernia is common, especially in men. The aim of study was to Consider the medications after surgery in inguinal hernia. **Methods:** After obtaining written and informed consent from the patients, cases were randomly selected operative outcome in inguinal hernia surgeries. From patients admitted to this tertiary care hospital for surgical intervention of inguinal hernias during the period between July 2023 and Jan 2024. Cases with inguinal hernias which had signs of obstruction and inability to reduce the hernia are taken up for emergency surgical intervention within 6-8 hours. **Results:** : 30 inguinal hernia patients were evaluated and found that, Hernioplasty was the common surgery seen in 96.66% and herniotomy (3.33%) of cases. Major medications consider after surgery are Cefotaxime, Pantoprazole, Diclofenac, Neomol, Ranitidine, Pantoprazole, Ondansetron, Amikacin, Gentamycin, Cefixime, Metronidazole and tramadol. **Conclusions:** This study conclude that majority of patients were administered the drug Diclofenac and Cefotaxime. This drugs are used to prevent infections and further complications.

Keywords: inguinal hernia, Hernioplasty, Medications (Intravenous, oral and supplements).

1. INTRODUCTION

Inguinal hernias are one of the common causes of surgical admissions and referral of patients from primary physicians. Hernia describes the bulge or protrusion of an organ or a tissue through an abnormal opening in the abdominal wall. Although there are many types of hernia, 75% of hernias occur in the inguinal region.¹ It may be said with assurance that inguinal hernia is among the oldest of man's maladies and one of the first to be recognized, so inescapable in its appearance and so telltale the discomfort.² In the period before Bassini started doing hernia surgery the recurrence rate was 100% by 4 years.³ Now it is less than 1%.

Especially, the advent of laparoscopic hernia repairs has changed the scenario. Laparoscopy is used in emergency inguinal surgeries also. Although we have made a great progress in treating hernia the management of its complications has progressed only a little. The postoperative complications and mortality is alarmingly high especially in the aged people in case of strangulated inguinal hernia.^{4,5}

The aim of study was to analyse the medication considerations after surgery in inguinal hernia.

2. MATERIALS AND METHODS

2.1 General data

After obtaining written and informed consent from the patients, cases for the study were randomly selected from patients admitted to this Government Cuddalore Medical College and Hospital, Department of Surgery and Department of Medical Records, a 1250



bedded multi-speciality tertiary care teaching hospital(GCMCH), Chidambaram. This study was conducted during the period between 2023 and 2024.

Inclusion criteria:

1. Case sheets of both male and female in surgery department and Department of Medical Records.
2. Case sheets with inguinal hernia.
3. Case sheets from July 2023 to Jan 2024.

Exclusion criteria:

1. Case sheets with insufficient data.
2. Outpatients
3. Case sheets with other hernias.

Examination

The diagnosis of inguinal hernia was made by taking thorough history and physical examination. All cases were examined thoroughly and the findings were recorded. In all cases complete general physical examination, local examination and systemic examination was done. The following investigations were performed in each case. Hematological: Hb%, TLC, DC, ESR, Biochemical: RBS, RFT, LFT. Radiological: Ultrasound abdomen and chest X-ray, X-ray abdomen erect. Though imaging is rarely needed to establish diagnosis of inguinal hernia, it is very useful in cases of uncertain diagnosis, complicated hernias and recurrent hernias. After complete workup, clinical diagnosis was ascertained and patients underwent emergency inguinal hernia repair. All patients were informed of the risks and benefits of the procedure in their native language and the same was documented.

2.2 Methods

Anaesthetic management :

All cases were performed under local anesthesia.

SURGICAL TECHNIQUE:

HERNIOPLASTY: In hernioplasty, instead of stitching the muscle opening shut, the surgeons cover it with a flat, sterile mesh, usually made of flexible plastics, such as polypropylene, or animal tissue. The surgeon makes small cuts around the hole in the shape of the mesh and then stitches the patch into the healthy, intact surrounding tissues. Damaged or weak tissues surrounding the hernia will use the mesh, as a supportive, strengthening scaffold as they regrow. Hernioplasty is better known as tension – free hernia repair. The contents are examined for viability. Senior Surgeons operated all cases. All patients received standard care in the peri-operative period.

POST OPERATIVE PERIOD:

The patient was nursed in bed on the day of operation. He is mobilized to walk the next day. Drain was removed after 48hrs. Chest physiotherapy was given. Antibiotics were administered for the period of hospital stay and Foley's catheter was removed after 3 days, to prevent contamination of wound and dressing. The cord was routinely palpated until the patient was discharged.

3.RESULTS

This was a prospective clinical study comprises the statistical analysis of 30 inguinal hernias done in a tertiary care hospital during the two years period of 2015-2017, regarding various presentations and management. The number of right inguinal hernias admitted in general surgery during the above study period were 16 which constitutes 53.3%. Number of left inguinal hernias were 9 which constitutes 30% and bilateral inguinal hernias were 5 which constitutes 16.66%. From this study, most of the patients had right inguinal hernia which was similar to the study conducted by B.G.Rahul et al(16).



3.1.AGE AND GENDER WISE DISTRIBUTION

The case with least age is 3 yrs and highest is 60 yrs as represented in Figure 1. In this study, (1- 20) years include 2 patients (6.66%), 20-40 years include 19 (63.33%) patients, 40-60 years include 9(30%) patients. Figure.2. Over the period of study majority of patients were male patients presented with inguinal hernia. In this study Male patients 28(93.33%) and female 2(6.66%).

Table 1: age wise distribution

AGE	NO.OF.PATIENTS	PERCENTAGE(%)
1-20 years	2	6.66%
20-40 years	19	63.33%
40-60 years	9	30%

Table 2: gender wise distribution

GENDER	NO.OF.PATIENTS	PERCENTAGE(%)
Male	28	93.33%
Female	2	6.66%

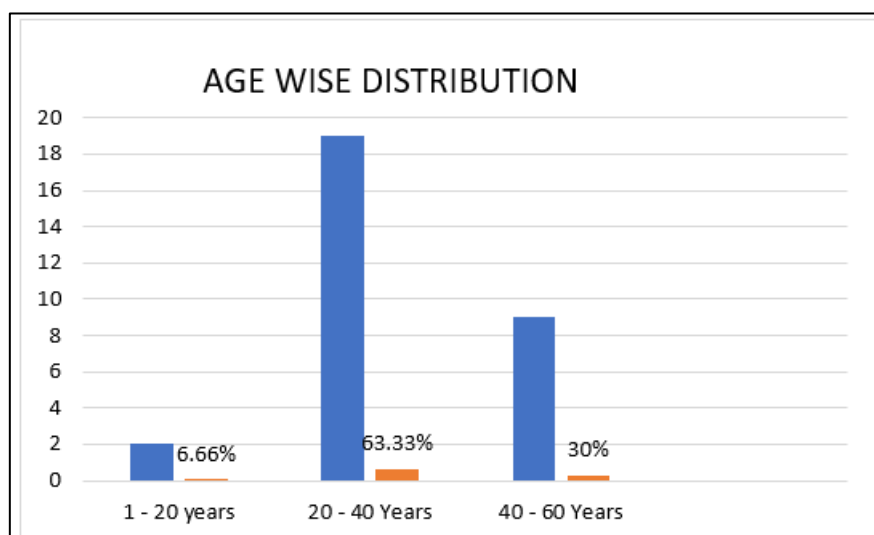


Figure 1: age wise distribution

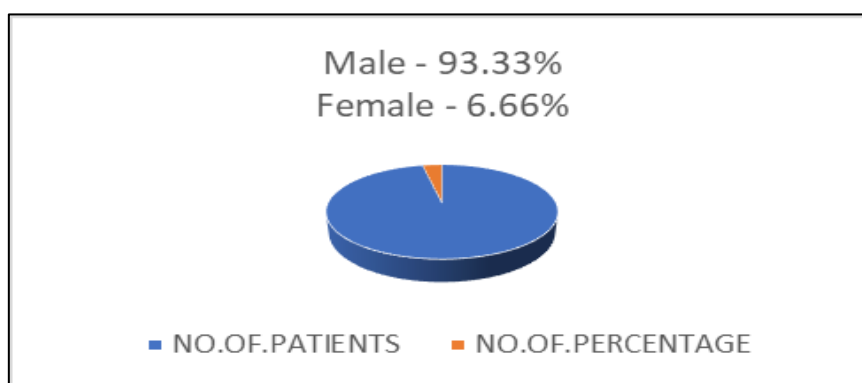


Figure 2: Gender Wise Distribution



3.3. SITE

Out of 30 patients, 16(53.33%) cases are right side inguinal hernias whereas 9(30%) are of left Side and 5(16.66%) are of bilateral type represented in Table 3.

Table-3 : site distribution of hernias

SIDE DISTRIBUTION OF HERNIAS	NO.OF.PATIENTS	PERCENTAGE(%)
Right	16	53.33%
left	9	30%
Bilateral	5	16.66%

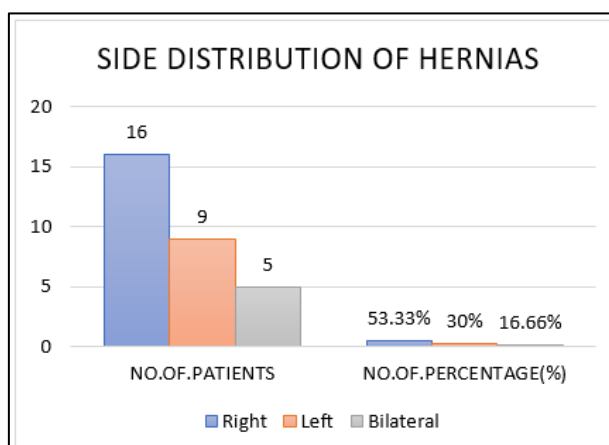


Figure-3: side distribution of hernias

3.4.TYPE OF HERNIA

It was evident that 13.33% are presented with Hypertension, 16.66% with alcoholism and 70 % of patients are with no other comorbidities. The data were represented in table – 4.

Table -4: type of hernias

COMORBID CONDITION	NO.OF.PATIENTS	PERCENTAGE(%)
Hypertension	4	13.33%
Alcoholism	5	16.66%
No other comorbidities	21	70%

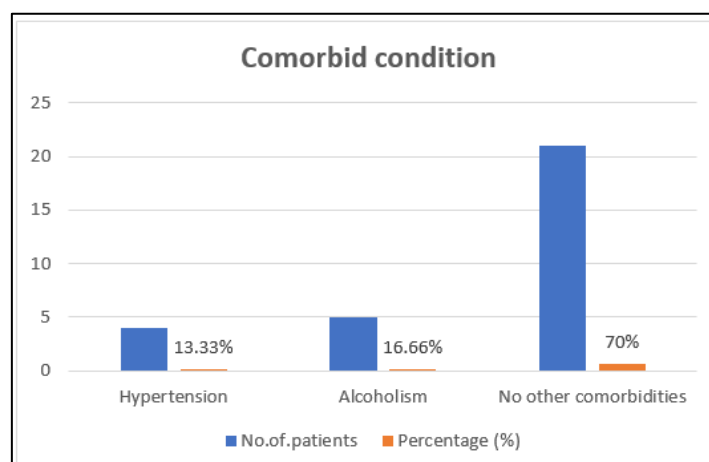


Figure 4: Type Of Hernias



3.5. CLINICAL PROCEDURE:

All complicated hernias were operated on emergency basis. According to the presentation and contents of the hernial sac, the procedures performed are hernioplasty, herniorrhaphy with omentectomy, modified bassini's repair of the posterior wall and bowel resection with end to end anastomosis for non-viability of bowel as a content of hernial sac. In our study, hernioplasty(96.66%) and herniotomy(3.33%). Type of clinical procedure was represented in Table 5.

Table-5 : Clinical Procedure

MODE OF SURGREY	NO.OF.PATIENTS	PERCENTAGE(%)
Hernioplasty	29	96.66%
Herniotomy	1	3.33%

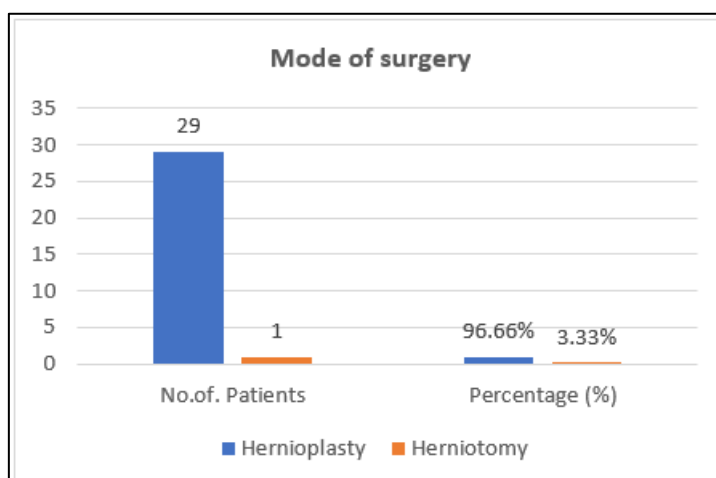


Figure-5: Clinical Procedure

3.6. POST OPERATIVE MEDICATIONS

BASED ON INTRAVENOUS THERAPY :

Based on the study, 26(86.66%) patients had taken Cefotaxime, 15(50%) patients had taken pantoprazole, 27(90%) patients had taken Diclofenac, 4 (13.33%) patients had taken Neomol, 23(76.66%) patients had taken Ondansetron, 26(86.66%) patients had taken Ranitidine, 4(13.33%) patients had taken Amikacin, 2(6.66%) patients had taken Gentamycin and Cefixime, 4(13.33%) patients had taken Ceftriaxone , Metronidazole and Tramadol. The data was presented in Table- 6.

Table-6 : Distribution Of Medications(Post Operative-Iv)

MEDICATIONS	NO;OF.PATIENTS	PERCENTAGE(%)
Cefotaxime	26	86.66%
Pantoprazole	15	50%
Diclofenac	27	90%
Neomol	4	13.33%
Ondansetron	23	76.66%
Ranitidine	26	86.66%
Amikacin	4	13.33%
Gentamycin	2	6.66%
Cefixime	2	6.66%
Ceftriaxone	4	13.33%
Metronidazole	4	13.33%
Tramadol	4	13.33%

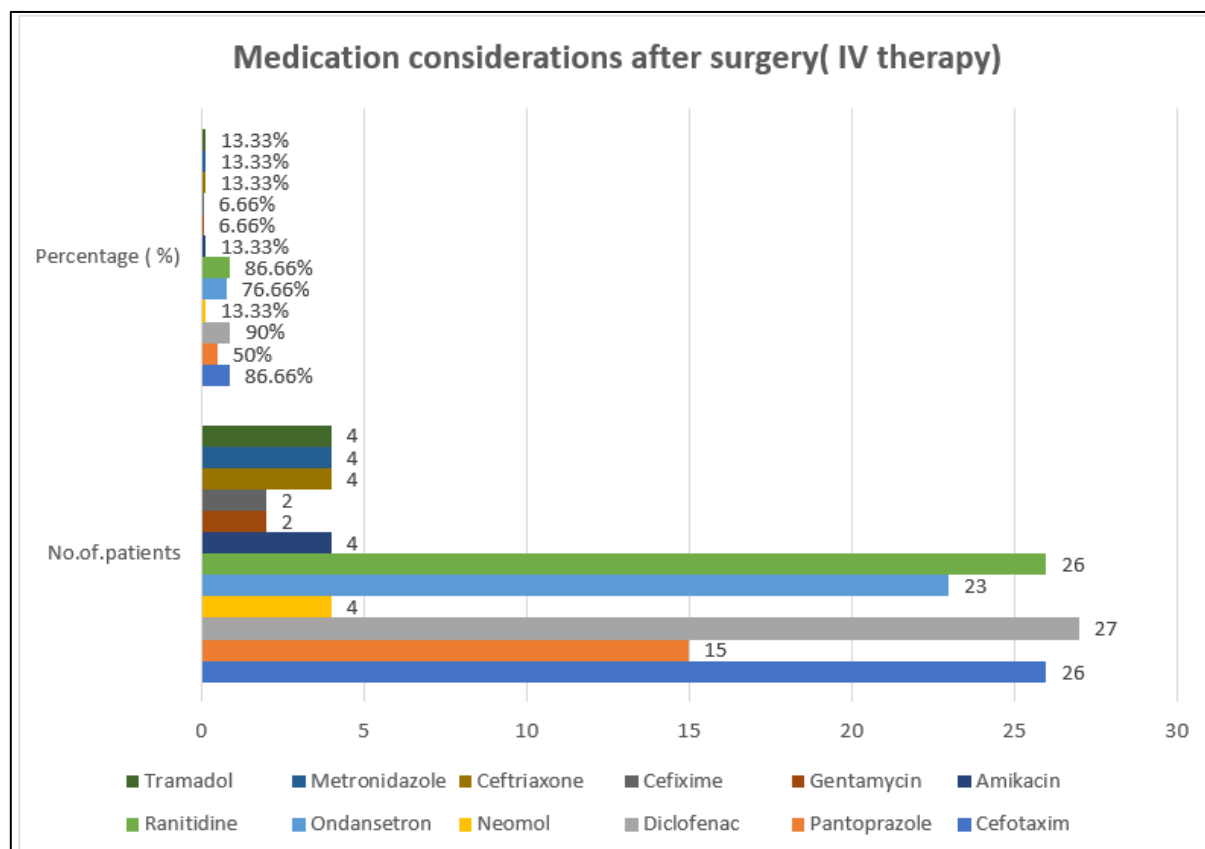


Figure-6 : distribution of medications(post-operative iv)

3.7. BASED ON ORAL THERAPY:

Based on the study, 2(6.66%) patients had taken Aceclofenac, 20(66.66%) patients had taken Pantoprazole, 30(100%) patients had taken Chymoral forte, 20(66.66%) patients had taken Diclofenac and Ranitidine, 25(83.33%) patients had taken Acetaminophen and 3(10%) patients had taken Tamsulosin. The data was presented in Table- 7.

Table-7: Distribution Of Medications After Surgery(Oral Therapy)

MEDICATIONS	NO.OF.PATIENTS	PERCENTAGE(%)
Aceclofenac	2	6.66%
Pantoprazole	20	66.66%
Chymoral forte	30	100%
Diclofenac	20	66.66%
Ranitidine	20	66.66%
Acetaminophen	25	83.33%
Tamsulosin	3	10%

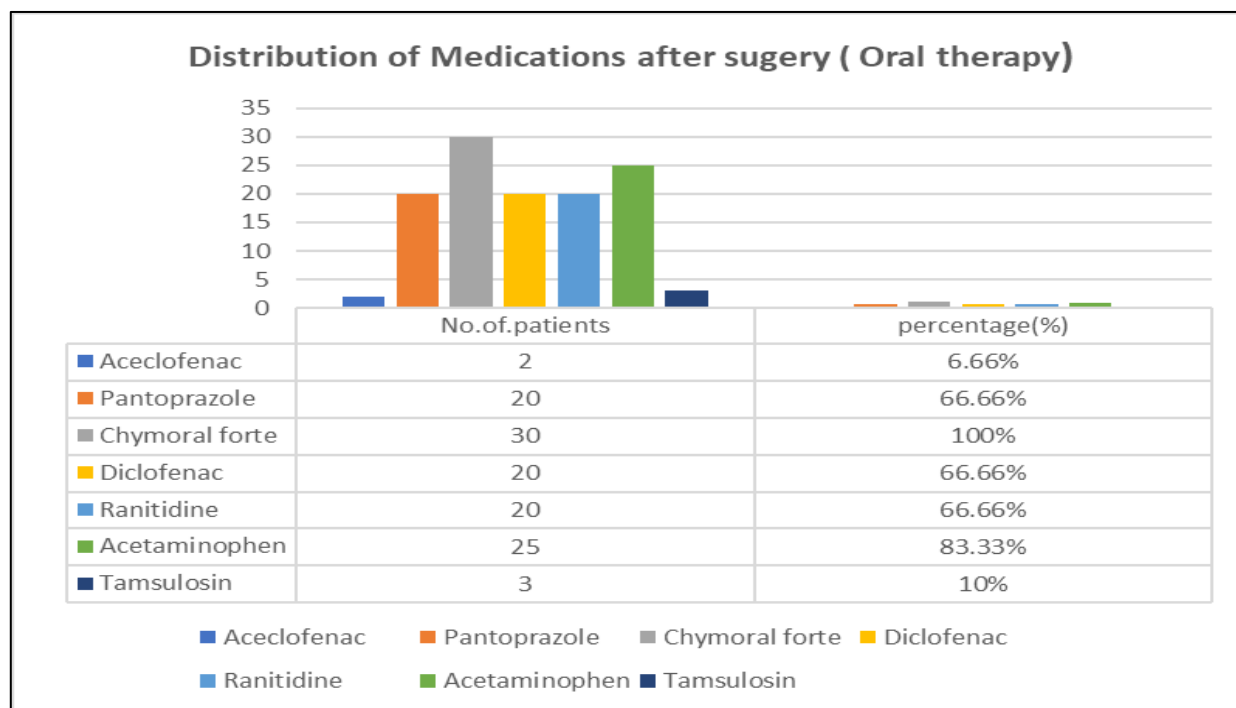


Figure-7: Distribution Of Medications After Surgery (Oral Therapy)

DISCUSSION:

A Clinical study of 30 patients of inguinal hernia was conducted at the department of surgery of Government Cuddalore Medical College and Hospital, Chidambaram for a period of July 2023 to Jan 2024.

Table 1. shows the age wise distribution. In our study , the majority of the study patients in the age group of (20-40) years . This result was not similar with Ramji ,et al.(2019) Showed that majority of patients belonged to the age group of 51-60 years.[2]

In the present study, the incidence of inguinal hernias was confined to male patients 93.33% and 6.66% were female patients during the study period. In standard literature, there was male preponderance on the incidence of inguinal hernia which was consistent with our study.¹³ In a prospective study conducted by Shakya et al, on the outcome of complicated hernias, the incidence of (inguinal hernia) groin hernias was reported to be higher in males than females, 88.5% in males and 11.5% in females, also consistent with the observations of our study.¹⁴

The present study reported the incidence of right sided hernias to be about 53.33 % and left sided hernias to be about 30%, the findings which had correlation with the studies of Kulah et al (right versus left: 33,50% vs 17,40%) and Alvarez et al (right versus left: 16.08% vs 7.82%) both studies conducted on incarcerated inguinal hernias.^{15,16} The present study 96.66% of cases were treated by hernioplasty and in 3.33% with Herniotomy. Modified Bassini's repair was done whereas 75% of cases in Hariprasad et al's study and 82.6% of cases in Prakash et al study was treated by herniorrhaphy.

This study focuses on the medication considerations after surgery in inguinal hernia. The present study shows that distribution of medication considerations after surgery in inguinal hernia ; IV therapy include Cefotaxime, pantoprazole, Diclofenac, Neomol, Ondansetron, Ranitidine, Amikacin, Gentamycin, Cefixime, Ceftriazone, Metronidazole, Tramadol. Oral therapy includes Aceclofenac, pantoprazole, Chymoral forte, Diclofenac, Ranitidine, Acetaminophen, Tamsulosin. Supplements include B-Complex and ascorbic acid. According to the study conducted by Menten et al., concluded that Lornoxicam and tramadol provided rapid and effective analgesia and was well tolerated. This result was similar with this study.

From the study , all of the patients were administered xylocaine. This result was contrast to the studies conducted by Suman Lata Gupta et al.[3] The results of this study show that it is safe to correct an inguinal hernia with mesh. Atila et al and Legnani et al found the same low incidence of wound infections in acute hernia repair with the use of prosthetic mesh in their cohort studies on acute incarcerated hernias. This also corresponds to other studies involving the use of prosthetic mesh in contaminated areas. Wound



infection cannot be considered a contraindication for the use of mesh and can be effectively treated using antibiotics and local wound dressings.

CONCLUSION:

Small bowel is the most common content of the sac, followed by omentum. Reduction of hernia with mesh repair of posterior wall of inguinal canal and deep inguinal ring is associated with minimal complications compared to tissue-based repair.

We conclude that major medications used after surgery in inguinal hernia are Cefotaxime, pantoprazole, Diclofenac, Neomol, Ondansetron, Ranitidine, Amikacin, Gentamycin, Cefixime, Ceftriazone, Metronidazole and Tramadol. Neomol, Diclofenac and Tramadol are major used drug in post operative as well as emergency department for managing pain. This medications are used to prevent infections and further complications.

Mortality and morbidity are related to the mean age of presentation, associated co-morbid conditions, tissuebased repair, symptoms at presentation, bowel resection and anastomosis and severity of post-operative complications.

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