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Research Article

Repair of Inguinal Hernia in an Ambulatory Way

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Abstract

Introduction: the surgical treatment of inguinal hernia has increased in the last decade and its prevalence is not known.

Objective: to evaluate the results of ambulatory surgical treatment of this entity from January 2009 to December 2018.

Methods: an observational, descriptive and prospective study of 380 patients diagnosed with inguinal hernia was performed, which were operated on an outpatient basis in the General Teaching Hospital "Enrique Cabrera" from January 2009 to December 2018. Patients were included emergency operated.

Results: the highest incidence of inguinal hernia was found between the ages of 60 and 80 years. Indirect right inguinal hernia appeared more frequently. Desarda's anatomic surgical technique was the most applied in 410 (54%) of the cases and Lichtenstein's hernioplasty with 224 (29.4%) followed in frequency. There was a total of 5 (0.6%) recurrences. Local anesthesia was applied in 609 (90.8%) of the patients, on an outpatient basis they were 100%. The total complications were 31 (4.0%).

Conclusions: surgical treatment of inguinal hernia on an outpatient basis is an appropriate process. Ensures the comfort of patients, reduces the risk of hospital infection, reduces waiting lists and hospital costs.

Keywords: Hospital Costs; Inguinal Hernia; Outpatient Treatment

Introduction

The inguinal hernia is known since man adopted the erect position, so it is one of the most frequent conditions. Its history is as old as humanity itself. It is a topic of interest not only for historians, but for compulsory knowledge for anatomists and surgeons. The first description of hernia reduction dates back to the time of Hammurabi in the Egyptian papyri [1]. According to the Ebers Papyrus, dating from 1560 BC, the hernia is a tumor in the genitals in which the intestines move. It is the protrusion of an organ of the abdominal cavity through a natural or acquired orifice. Hesinten, in 1794, establishes a differentiation between hernias treated by direct and indirect inguinal sacs. It is important to point out that this had already been demonstrated by Cospar Stromary in 1599, who insisted on the futility of sacrificing the testicle in direct hernias [2].

In 1804, Cospar described the transverse fascia and pointed out that this layer and not the peritoneum and external oblique aponeurysis was the main barrier to avoid herniation. He also defined direct hernia as a defect that occurs through the Hesselbach triangle [3]. With the passing of time came the modern era of hernia surgery, which began with the discovery of antisepsis by Lister, studies on anesthesia, knowledge of the normal physiology of the inguinofemoral region, the introduction of antibiotics and the best understanding of the tissue repair and healing process. Everything was linked to the appearance of better surgical methods which is evidenced by the work of Henry and Marcy in the USA. UU and of E. Bassini in Italy [4]. We must point out that from

the second half of the eighties a new era began, characterized by the use of prosthetic meshes and patches with which better results are obtained in this surgery. Among the materials used is polypropylene, which is biocompatible with high tensile strength, flexible, impermeable to water and resistant to high temperatures, which makes it sterilizable [5].

The application of ambulatory surgery has the following advantages: it only alters the patient's way of life, which receives more individual attention; the anxiety of the patient is attenuated; costs are reduced; decreases the risk of hospital infection and disability; as well as facilitates the return to work. All this contributes to the improvement of the quality of the services provided to achieve an excellent service. One of the most important aspects of this type of surgery is the application of local anesthesia that improves the cost-benefit ratio of the procedure, decreases the use of hospital beds and allows the patient's collaboration if necessary. The aim of this study is to evaluate the results of outpatient surgical treatment of this entity from January 2009 to December 2018.

Methods

A cross-sectional, retrospective, descriptive observational study of patients operated out of inguinal hernia was performed in the surgery service of the "Enrique Cabrera" General Teaching Hospital in the period from January 2009 to December 2018. The universe consisted of patients operated on inguinal hernia in the surgery service of the General Teaching Hospital "Enrique Cabrera" from January 2009 to December 2018. The sample consisted of patients operated on inguinal hernia on an outpatient basis by the Group. Basic Work (GBT) No. 1 in the surgery service of said hospital in the aforementioned period. This study included all patients aged 18 years or older, ASA III or lower risk of anesthesia, obesity not over 50% overweight and carriers of the disease under study. Patients with associated, decompensated and overweight diseases greater than 50% of their body weight were excluded. The principles related to the code of ethics were followed, according to the Helsinki declaration. The security and confidentiality of the information was guaranteed.

Results

It is observed that the most frequent location of the inguinal hernia was the right side with 384 patients for the (50.6%) of the total, of which 66.3, were indirect. The average age of the patients included in the study was 57.4 years. There were five recurrent hernias (0.6%). According to the Nyhus classification, there were a total of 760 patients with hernias belonging to types II and III b, which were the most frequent (Table 1).

Sex	No	%
Female	92	12.1
Male	668	87.9
Location		
Right	384	50.6
Left	286	37.6
Bilateral	90	11.8
Variety		
Indirect	504	66.3
Direct	224	29.4
Mixed	32	4.3
Classification of Nyhus		
Type I	0	-
Type II	288	37.8
Type IIIa	196	25.7
Type IIIb	206	27.2
Type IIIc	0	-
Type IV	70	9.3

Table 1: Sex, location and classification of hernias.

The operative techniques most used in inguinal hernias are shown in Table 2. Non-prosthetic techniques were applied and of these the most performed was the Mohan P. Desarda technique in 410 patients (54.0%). Within the prosthetic techniques the most applied was that of Lichtenstein, in 224 patients (29.04%).

Techniques	No	%	Recurrence	%
Shouldice	6	0.7		
Zimmerman I	10	1.3		
Madden	8	1.0	1	12.5
Mc Vay	20	2.6		
Goderiche	8	1.0	1	12.5
Bassini	10	1.3		
Camayd	2	0.2		
Lotheissen Mc Vay	6	0.7		
Halsted	6	0.7		
Desarda	410	54.0	2	0.4
Plug de Rutkow	2	0.2		
Marcy	12	1.5		
Rives	22	9.8		
Lichtenstein	224	29.4	1	0.4
Rutkow-Robbins	8	1.0		
Abraham	0	-		
Zimmerman II	6	0.7		
Total	760	100.0	5	0.6

Table 2: Relationship between relied techniques and recurrence.

Table 3 shows the most used aesthetic procedures. Local anesthesia was applied in 690 patients (90.8%) of the total, followed by spinal anesthesia or spinal anesthesia in 66 patients (8.8%).

Procedures	No	%
Local Anesthesia	690	90.8
Spinal Anesthesia	66	8.8
General and Endotracheal Anesthesia	2	0.2
Acupuncture Anesthesia	0	-
Peridural Anesthesia	0	-
General Endovenous Anesthesia	2	0.2
Total	760	100.0

Table 3: Analgesic Procedures.

The associated diseases are shown in Table 4, with the prevalence of arterial hypertension 145 patients (19.0%) and the conditions associated with umbilical hernia with 10 patients (1.3%).

Associated Diseases and Associated Conditions	No	%
Ischemic Cardiopathy	27	3.5
Arterial Hypertension	145	19.0
Diabetes Mellitus	28	3.6
Umbilical Herniorraphy	10	1.3
Femoral Herniorraphy	4	0.5
Incisional Herniorraphy	2	0.2
Eversiòn of Vaginal	2	0.2
Total	218	28.6

Table 4: Diseases and Associated Conditions.

The Table 5 shows the distribution of complications in patients undergoing local anesthesia in the period from January 2009 to December 2018, at the "Enrique Cabrera" General Teaching Hospital.

Complications	No	%
Seromas	9	1.1
Recurrences	5	0.6
Hematomas	3	0.3
Orchitis	5	0.6
Bladder Piercing	1	0.1
Infection of the surgical site	8	1.1
Total	31	4.0

Table 5: Complications.

It is observed that the seroma was the complication that most frequently presented 9 patients (1.1), followed by infection of the surgical site 8 patients (1.0) and in total 31 complicated patients (4.0). The cost of admission per day and on an outpatient basis result in significant savings and favour the efficiency and well-being of our patients, returning to the family environment and significant financial savings are obtained in hospital institutions, so this system should be developed

Discussion

The results obtained in this series are consistent with those obtained by different authors and differ from others who point out the primacy of inguinal hernia in younger patients. There was predominance of males, results similar to those referred in several studies on the subject [6,7] According to experts in the field, up to 25% of males and only 2% of females will develop inguinal hernia at some point in their life. This fact has been related to the descent of the testicle, with a greater thickness of the spermatic cord and with a lower obliquity of the inguinal canal in man. In the opinion of the authors, who share the Goderich criterion [8], when other conditions are concomitant, patients should be treated before having herniorrhaphy to avoid postoperative discomfort and the increase in the recurrence rate. There are also criteria that the McBurney incision during appendectomy is related to the appearance of inguinal hernia. In the present work the ages ranged between 60 and 80 years, which is similar to the literature reviewed. The right inguinal hernia was the most frequent, as well as the indirect variety on both sides. It was also observed that the highest number of hernias corresponded to variety II, from the Nyhus classification [9], (144 patients) and variety III b (103 patients). Every surgeon who frequently intervenes in patients with a hernia of the inguinal region knows that there are innumerable surgical techniques, to which advantages and disadvantages are indicated. The purpose is to reduce complications and, above all, to avoid recurrences [10]. There are so-called classical (anatomical) techniques that repair the defect of the inguinal wall with the patient's own tissues and, the so-called prosthetic techniques, which use synthetic materials that have had a great development in recent decades and whose application always leads to the same purposes as anatomical.

It was observed that the most used anatomical technique was that of Mohan P. Desarda, followed by the Lichtenstein technique. For some years now, a basic working group of our

surgical service has applied the anatomical technique of Professor Desarda and has obtained good results. This technique, as pointed out by its creator, has some advantages, among which are its easy learning and execution, available to residents and surgeons not specialized in the treatment of this disease [11,12]. The technique provides a posterior wall of the canal Strong inguinal, mobile and physiologically active. When not using the mesh (foreign body) the fibrosis is minimal or does not exist, there is no rejection to foreign body and the postoperative pain on the fifth day of the operation is less than with the techniques that use prosthesis. With the application of local anesthesia, to carry out the outpatient procedure in these patients, the complications were minimal [13,14]. By carefully analysing the number of recurrences and the level of preparation of the acting surgeon, it was found that all patients operated by residents were helped by specialists, who correct the possible defects of the operative procedure, this contributes to the technical improvement and the increase of skills and skills during the surgical act. In Cuba, this has greater relevance, since the teaching care system guarantees the integral surgical training of the resident, an aspect not comparable with what is referred to in the international medical bibliography, where this centralization does not exist [15-17].

In this series there were no deaths. None of the operated patients had the need to change their occupation, or difficulty to get into their job before 60 days. It is important to highlight the late complications of this procedure, such as the rejection of the bio prosthesis and the appearance of fistulas and granulomas. We must point out that in this centre the various techniques of hernia repair, facial and aponeurotic are applied, with the use of prosthetic meshes or without these, with good results, especially in the repair of hernias with tension-free facial techniques, since anatomically it is more physiological, compared at the same time, with national and international studies [18]. Taking into account the large number of patients operated during the study period, the savings contributed to the hospital by the reduction of occupied beds, the decrease in the cost of materials and medicines, the faster recovery of patients and the incorporation into their social environment and labour. It is concluded that outpatient surgery with local anesthesia plus sedation is a beneficial method for patients and hospital institutions and this is shown in the results in this case [19-22].

Conflicts of Interest: The authors do not declare having conflicts of interest.

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