The Lichtenstein Plug Technique: The Safe Repair

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Abstract

Summary: Various techniques have been developed for the repair of femoral hernia. The technique with the Lichtenstein Plug since 1989 has allowed to obtain a lower rate of complications and recurrences, as well as an early recovery of the patient’s usual activities. Its application, widely spread in elective surgery, can also be performed in emergency surgery. The aim of this work is to review the experience of our basic group of work in the surgical treatment of femoral hernia using this technique.

Methods: A retrospective descriptive observational study was conducted in our basic work group from the surgery service of the General Teaching Hospital “Enrique Cabrera” between 2009 and 2018, to which this surgical technique was applied. We study the anatomical variants of hernias as well as post-operative complications and clinical evolution.

Results: The mean age of the patients was 58.7 years (19-92 years), being the female with the highest incidence 78%, as well as, the most frequent location the right, 67.5%. The prosthesis used in the hernioplasty was that of polypropylene. Local anesthesia was applied to 29 patients (63%) of them. The average surgical time was 25 minutes, (15-65 minutes). Ambulation was early and the average hospital stay was less than 24 hours, in most patients. Only one infection of the wound and one hernia recurrence in one patient was confirmed.

Conclusion: Therefore, we believe that the Lichtenstein Plug technique should be considered among the techniques of choice in the treatment of femoral hernia.

Introduction

Many technical procedures have been developed to repair femoral hernia. Since 1989 the Lichtenstein Plug technique has diminished the post-operative complication and recurrence. The advantages present, in term of pain and post-operative discomfort, recovery of physical and labor activity is very good. This technique can be indicated in complicated hernia [1,2]. The aim of this article is to describe the surgical technique and to analyze the preliminary results of our series of 46 patients.

Methods

We performed a descriptive and observational study with a retrospective Character in our surgical group at "Dr. Enrique Cabrera” Teaching and General Hospital, between the years 2009-2018 to the patients who underwent surgical repair of femoral hernia through the Lichtenstein Plug technique and their post-operative behavior. The following variable were analyzed: age, type
of hernia, tolerance to local anesthesia, surgical technique, operating
time, post-operative pain, wound sepsis and recurrence of hernia;
return to activity. All these items were collected in Microsoft Excel
base and later were processed in the SPSS statistics program.

Results

Table 1 shows the most relevant results of this series. We can
see that the largest number of patients was women, 36 in total,
78% and there were only 10 men, 22%; which is in accordance
with what has been reported with other authors. The most frequent
location was the right one in 31 patients, 67.5% and the average
age of the patients was 58, 7 years, with a range between 19 and
92 years [3]. 47 surgical interventions were performed in 46 pa-
tients, since there was a relapse, 2.2%. It was a patient who had
undergone surgery for a recurrent, incarcerated femoral hernia
and who had a wound infection in the postoperative period [4]. The
most used anesthesia was the local one, which was applied to 29
patients, 63%, followed by the regional one in 12 patients, 26.2% of
the cases, Table 2. It is also observed in this table that the average
duration of surgical interventions was 25 minutes and the hospital
stay was 8 hours, like other authors [5-7].

Table 1: Sex, Location, Recurrence, Variaty, Middle Ages.

<table>
<thead>
<tr>
<th>Number of Patients</th>
<th>Percentage %</th>
<th>Chl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>10</td>
<td>22,0</td>
</tr>
<tr>
<td>Women</td>
<td>16</td>
<td>78,0</td>
</tr>
<tr>
<td>Right</td>
<td>31</td>
<td>67,5</td>
</tr>
<tr>
<td>Left</td>
<td>15</td>
<td>32,5</td>
</tr>
<tr>
<td>Recidiva</td>
<td>1</td>
<td>2,2</td>
</tr>
<tr>
<td>Primary</td>
<td>45</td>
<td>97,8</td>
</tr>
<tr>
<td>Middle Ages</td>
<td>58,7 years</td>
<td></td>
</tr>
</tbody>
</table>

Source: Data collection form.

Table 2: Type of Anesthesia, Average Duration, Hospital media
stay.

<table>
<thead>
<tr>
<th>Type of Anesthesia</th>
<th>Number of Patients</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>29</td>
<td>63,0</td>
</tr>
<tr>
<td>Regional</td>
<td>12</td>
<td>26,2</td>
</tr>
<tr>
<td>General</td>
<td>5</td>
<td>10,8</td>
</tr>
<tr>
<td>Average Duration</td>
<td>25 Minutes (Ranger 15-65)</td>
<td></td>
</tr>
<tr>
<td>Hospital Media Stay</td>
<td>8 Horas (Ranger 6-48)</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>97,8</td>
<td></td>
</tr>
<tr>
<td>58,7 years</td>
<td>(Range 19-92)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Data collection form.

The only recurrences observed in our series were in a patient
who was operated on because of a relapsed, incarcerated hernia.
In the surgical act a wide femoral orifice was observed that was
occluded with a cylinder of polypropylene mesh like all the other
patients. In the postoperative period he presented wound infection
and recurrence at four months. In the reoperation, it was found
that the cylindrical prosthesis was of insufficient size to occlude
the femoral orifice. This patient underwent a pre-peritoneal repair
with a wide patch of polypropylene mesh.

Discussion

The great advantage of this technique is the absence of tension,
and for this the mesh must completely occlude the hernia lirifice.
Therefore, the prosthesis will be adapted to the size of the hole and
not the reverse, avoiding the partial closure of the hole when it is
large, since this would give rise to tension zones with the consequent
risks of recurrence. In the primary femoral hernia (Figure 1), the
hernial orifice is small (Figure 2) and can be satisfactorily occluded
with the polypropylene lindrical prosthesis (Figure 3). The low
rate of complications and its simple and rapid execution Means
that we consider it as a technique of choice in cases of primary
femoral hernia. In recurrent femoral hernia, the ring is generally
larger, and in cases of urgent surgery due to a stuck or strangulated
femoral hernia, it is often necessary to expand the hernia ring to
adequately manage the affected bowel. In no case should try to
reduce the size of the hole by suture, even large, because of the
danger of recurrence. In these cases, it may be useful to replace
the Lichtenstein cylindrical prosthesis with a cone-shaped mesh
as it has been used by other authors. The prosthetic material used
in the cases has been a monofilament polypropylene mesh, as it
is considered the most appropriate, since it is strong, resistant to
infection and the cases of intolerance are practically non-existent
since the yellow a rapid interstitial fibroblastic proliferation that
fixes it intimately to the tissues, which fixes it intimately to the
tissues, according to reports Mansilla Molina D et al. [8].

Figure 1: Patients with right femoral hernia.

Figure 2: Hernia sac dissected through the dilated femoral orifice.
In our series, we did not have any deaths and the highest morbidity occurred in the group of older patients. For this reason, to get her with the high probability of strangulation of the femoral hernia, [9] we believe that all patients diagnosed with femoral hernia, regardless of age and surgical risk, should undergo a programmed procedure after adequate preparation, thus avoiding situations adverse events that increase morbidity and mortality, according to what was expressed by Porrero JL in 1993 and Chamary V.L. also in 1993 [10-12]. Local anesthesia was the most used in our series, 63%, due to the great benefits they bring to the patients with high surgical risk, however, at present the most frequently used is the regional one [13,14]. Finally, we can affirm that the series we present is not very extensive, but it is supported by good results, both in the immediate post-operative period and in there incorporation of the patients to his habitual activity, as well as, in the absence of recurrences or complications delayed, when applying the Lichtenstein Plug technique in the repair of the femoral hernia. We can conclude affirming like other authors [14-16]. Which are equally significant, the convenience of repair when performed under local anesthesia, which is ideal if it is scheduled surgery, since the reduction of tissues trauma and post-operative discomfort and a lower incidence of sepsis and tissues tension, reduce potential recurrence and favor early Ambulation [17-19].

Conclusion

For all of the above, we believe that the Lichtenstein Plug technique should be of choice in the surgical treatment of femoral hernia.

Conflicts of Interest

The authors do not declare having conflicts of interés.

References
