

The treatment of inguinal hernia in the elderly: open technique or laparoscopic approach?

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Abstract. Well defined and shared quality standards characterize the ideal treatment of inguinal hernia: it should be the least traumatic as regards both the requested type of anaesthesia and the operative technique and the least expensive; it should have the least per-and post-operative morbidity. The chosen technique should be also the easiest to learn and to perform; and his positive results should be the most reproducible. While there are a lot of studies about the comparison between open and laparoscopic surgery, the number of the studies about the specific evaluation of the problem in the aged is very limited. Aim of the paper is to aid in evaluation of the problem in a group of patients, on the basis of the reports and on an initial departmental experience. In conclusion the laparoscopic repair is a complementary choice and not an alternative to the open surgery in the elderly patients.

Key words: Inguinal hernia, elderly, open surgery, laparoscopic surgery

Introduction

Well defined and shared quality standards characterize the ideal treatment of inguinal hernia: it should be the least traumatic as regards both the requested type of anaesthesia and the operative technique and the least expensive; it should have the least per-and post-operative morbidity. The chosen technique should be also the easiest to learn and to perform; and his positive results should be the most reproducible.

Many techniques have been proposed to satisfy these aims with the application of the continuous technological progresses to hernia surgery. They regard materials for synthetic mesh, for sutures and surgical instruments. In particular, the use of the meshes has induced to apply the laparoscopic access also in the hernia repair.

Opposite to other abdominal pathologies, where the laparoscopy is largely used and sometimes considered the gold standard, what is the role of the lapa-

roscopy in the treatment of hernias? It is still debated: could elective fields of applications be identified? Especially in elderly patient, the comparison between open and laparoscopic surgery should consider the conditions of these patients. They can have a high risk for general anaesthesia and a shortest hospitalization is desirable.

While there are a lot of studies about the comparison between open and laparoscopic surgery, the number of the studies about the specific evaluation of the problem in the aged is very limited.

Aim of this paper is to aid in evaluation of the problem in this group of patients, on the basis of the reports and on an initial departmental experience.

Materials and methods

Two groups of patients, who underwent surgical treatment of the groin hernia in the last 5 years in the Department of Surgery of University of Trieste, have

been compared. The first group, operated on by different surgeons in the "Istituto di Clinica Chirurgica", includes 412 patients who underwent an open treatment. The age was between 65 and 99 year old. 37 had a bilateral hernia and 19 recurrent hernia. 168 had systemic diseases. 35 had contraindications to perform general anaesthesia. The surgeons performed 6 direct sutures and 406 mesh repairs. The second group includes the patients who have been operated on with laparoscopic technique in the "Istituto di Chirurgia Generale" since 2003. 26 patients with median age of 57 years (range 33-76, 8 over 65) underwent a TAPP performed by the same surgeon (N.d.M.). 16 were affected by monolateral hernia, 10 by a bilateral one. Type of anaesthesia, length of operation and hospitalization, short and long term morbidity and recurrences have been considered.

Results

The 84% of patients in the first group has been operated on under local anaesthesia and the 16% under general anaesthesia. The medium length of operation was 67 minutes (range 42-127). The 70.4% of the patients has been discharged in 12 hours from the operation, the 9.9% in 24 hours and the 18.2% in more than 48 hours. In 6 (1.7%) patients operated on under local anaesthesia has been observed a vagal crisis.

296 cases were discharged in 12 hours, 41 (9.9%) in 24 hours, and 75 (18.2%) beyond this period.

Short-term morbidity is represented by 2 wound's haematoma, 2 seromas, and 1 scrotal haematoma

Long-term morbidity is represented by: groin and testicular hypoesthesia in 12 cases (2.9%), hydrocele in 1 case (0.2%), recurrent hernia in 1 case (0.2%).

In the second group all operations have been performed under general anaesthesia. The median length of the operation has been 39 minutes (range 25-55) for monolateral hernias, and 53 minutes (range 30-60) for the bilateral.

There was 1 conversion to open in this group.

12 cases (42%) were discharged in 24 hours, the others beyond this period. The median length of the hospitalization was 2 days (range 1-8).

Regard on over-65 patients, 3 were discharged in the first postoperative day, 3 in the second one, 1 in the third one and 1 in the fourth one (he has been converted to open).

The immediate complications were not observed.

The long-term follow-up did not show persistent pain, groin and testicular hypoesthesia or recurrences.

Discussion

An important step in the evolution of the surgical treatment of inguinal hernia is represented by starting to use synthetic mesh. They have represented a real alternative to direct suture technique, utilized since then, and loaded by a recurrences percentage that varied between 10 and 15% (1). Only the Shouldice technique had a relapse percentage significant inferior (2).

The improvement of material's quality used for the mesh has radically decreased the problems related with the use of non-self material and it has caused the fact that today, in Italy, the synthetic mesh repair is the most diffuse treatment of inguinal hernia, independently from the employed surgical technique (3).

We have to underline that, while many Authors use the mesh to repair every type of hernia, others suggest that this technique should be employed only in the cases in which there is a weakness of the abdominal wall and the direct suture is not indicated.

Laparoscopic mesh techniques were classified as totally extra-peritoneal (TEP), trans-abdominal preperitoneal (TAPP), intra-peritoneal only mesh (IPOM). Of these, the more frequently used are TAPP and TEP, because IPOM has a high complications' rate (15%) (4).

The aim is to apply to hernia surgery the advantages of laparoscopy: minor traumatism, minor postoperative pain, early discharge and early renewal of the normal activity.

Data from literature are agreed upon equivalence between laparoscopy (TAPP e TEP) and open inguinal access in the treatment of groin hernia performed with synthetic mesh. This experience has confirmed also by our data.

A recent meta-analysis of randomized controlled trials (1) has demonstrated that there was no signifi-

cant difference in recurrence rate when laparoscopic mesh was compared with open mesh methods and, as regard the persisting pain, analysis of trials comparing laparoscopic placement with open mesh placement showed fewer reports after laparoscopic repair.

Many prospective and non-prospective studies demonstrated a less post-operative pain and an earlier renewal of sport or hard work after laparoscopy (5-7).

Furthermore, in our experience, the operative time is shorter in the laparoscopic group.

Disadvantages of laparoscopic surgery are the necessity of performing the operation in general anaesthesia, difficulty of execution and learning and high costs.

The necessity of general anaesthesia prevents from performing laparoscopy in elderly patients in day-surgery. The liking of patients towards this method has led some authors (8) to a favourable attitude for applying laparoscopy in every cases of hernia pathology when indicated, also passing from day-surgery to one-day-surgery.

As regard as the difficulty of execution and learning is concerned, the debate is open. Some authors underline that laparoscopy is more difficult to perform and to learn than open surgery (9). During a long and difficult learning curve, serious and often not proportionate to the seriousness of the illness complications can occur (10). On opposite, others authors assert that the learning curve does not influence the results (7, 11, 12).

Finally all authors agree about the higher cost of laparoscopy (8).

As regards as the role of the laparoscopy in the aged is concerned, it should be assessed. The first point is represented by the general anaesthesia that is mandatory in laparoscopic surgery. In patients affected by multiple pathologies above all respiratory is better to perform the open technique in local or regional anaesthesia. The second point is represented by the fact that, in the elderly, the shortness of the hospitalization has not a secondary importance and the open surgery allows the discharge the same day of the operation. The third point is represented by the fact that elderly patient has not a necessity for a rapid renewal of hard work or sport and so another advantage of laparoscopy is lost.

On the contrary, in patients with a low risk for general anaesthesia, the laparoscopy is a good alternative to open techniques in the repair of the recurrent hernias and the bilateral hernias.

In presence of recurrent hernia, open surgery can put on risk the elements of the funiculus and may be technically difficult for the presence of adhesions. In the patients with bilateral hernias, open repair is usually performed in two stages. The Stoppa's open mesh repair is a one-stage technique for the treatment of the bilateral hernias but it is more invasive than the laparoscopic mesh repair.

The experience performed in our Department allows to draw some considerations, though the limits of different numerical consistency of the groups and the different length of follow-up:

- the efficacy of both mesh repairs, open and laparoscopic, when the operation is performed by skilled surgeons but the difficulty and the length of the learning curve of the laparoscopic techniques is still under debate;
- the overlapping results with a higher incidence of postoperative neurological symptomatology in the patients who underwent open surgery;
- the shorter length of hospitalization for the patient after open mesh repair;
- the limited use of the laparoscopic access in elderly patients, related with the necessity of performing a general anaesthesia.

Conclusion

In conclusion the laparoscopic repair is a complementary choice and not an alternative to the open surgery in the elderly patients. It can be considered for patients who present a low risk for complications related to the general anaesthesia. Undoubtedly the necessity of a longer hospitalization limits its application in the treatment of the groin hernia in the elderly. In selected elderly patients, affected by recurrent and bilateral hernias, laparoscopic surgery may be useful. It should not be underestimate that this type of surgery needs a remarkable laparoscopic experience and so it is not widely employed in non-dedicated centres.

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