

## Repair of the inguinal hernia using the hernia sac to correct the abdominal wall defect

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**SUMMARY:** Repair of the inguinal hernia surgery using the hernia sac to correct the abdominal wall defect.

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*Surgery of the inguinal hernia is a challenge for the great incidence of recurrences. The aim of this study is demonstrate the usefulness of hernia sac in the repair of inguinal hernia. In 200 patients the hernia sac was used to reinforce the abdominal wall. The patients have been observed two years along and still now few recurrences (20%) have been observed. The hernia sac can be used to repair the inguinal hernia because it's a patient's tissue with no inflammation and rejection.*

**RIASSUNTO:** Chirurgia dell'ernia inguinale con utilizzo del sacco erniario nel rinforzo della parete addominale.

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*L'ernia inguinale è sempre una preoccupazione per il chirurgo non solo per il rischio della recidiva ma anche per garantire il ritorno rapido alle sue attività del malato. L'obiettivo di questo studio è dimostrare l'uso del sacco erniario nella correzione dell'ernia inguinale. Sono stati sottoposti a chirurgia 200 malati con ernia inguinale. È stato usato il sacco erniario per rinforzo della parete addominale. Con un follow-up minimo di due anni, non si è osservata recidiva in nessun malato. Il sacco erniario può essere usato nella correzione dell'ernia inguinale giacché tessuto dello stesso malato, e non produce reazione infiammatoria né rigetto.*

**KEY WORDS:** Inguinal hernia - Hernia sac - Biologic prosthesis.  
Ernia inguinale - Sacco erniario - Protesi biologica.

### Introduction

Groin hernia surgery aims at not only the rehabilitation of the patient in order to return to work as well as to allow the prevention of complications like strangling that can cause peritonitis and death (1-3). The recurrence, present in around 10% of hernia surgeries, encourages the research of new techniques and materials that can be utilized in the hernia correction (2-4).

After many experiences from ancient times, the her-

nia surgery begins in Italy with Bassini (1844-1924) with the reinforcement of the posterior plan of the inguinal canal. Bassini was followed by many surgeons with changes and adaptations of his technique, always aiming at reducing the recurrence (1,2,5). The mesh prosthesis use, from Shouldice (1890-1965) with steel, silver and actually with polypropylene shows good results, although there is a big incidence of rejection and infection, aside from the price of prosthesis never always accessible to the patient (2-6).

Halsted (1852-1922) said: "If we can be able to find a material with the same characteristics of a fascia or tendon we would arrive at the radical hernia cure" (1,2).

From 1971 with Alcino Lázaro, the hernia sac has been studied in regards of its constitution and his utilization for reinforcement of abdominal wall defect with very good result. The hernia sac is removed from the patient, doesn't show rejection, inflammation and it's a tissue of great resistance on account of smooth muscular fibers and collagen (1,2,7).

The aim of this study is show the use of the hernia sac in the correction of the inguinal hernia.

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## Patients and methods

This study was authorized by the “Conselho de Ética e Pesquisa em Seres Humanos” of the “Universidade Federal de Juiz de Fora – UFJF – MG”. The data had been collected from March 2003 to December 2006 in the “Hospital Municipal Dr. Mozar Geraldo Teixeira” of Juiz de Fora with 200 patients who had undergone inguinal hernia surgery. Of these patients, 147 (73,5%) were male and 53 (26,5%) female. The age varied from 13 to 89 years (average: 41,85; DPad: 16,8). The patients were chosen randomly and the factors of inclusion in this technique were the thickness and size of the hernia sac. Among the patients, 133 (66,5%) showed right inguinal hernia, 53 (23,5%) left inguinal hernia and 14 (7%) bilateral inguinal hernia.

The transverse incision was used following the force line of the skin – called the Felizet incision – with exposition of the spermatic cord after incision of the External Oblique Muscle (EOM) aponeurosis. After the identification of the hernia sac (Fig. 1), a string in its basis was made with absorbable thread (cromade Cat-Gut 2-0) and then resected. The hernia sac was put in physiological solution. The reinforcement of the inguinal wall is done with the approximation of the conjoint tendon to the inguinal ligament with Prolene 0 continuous suture. The hernia sac is cut and adapted on the previous suture. It is fixed with separated stitches of Nylon 3-0 and left loose serous with surface standing above. The hernia sac is put exceeding 3 cm the suture and the internal ring, around the spermatic cord (Fig.2). The spermatic cord is left subaponeurotic. The aponeurotic suture of the EOM is made with a Prolen 0. The skin is closed with intradermal suture (Nylon 3-0).

The dressing is made with a Micropore on the skin and must be removed in the 14<sup>th</sup> day when the Nylon stitches of the skin are removed.

The patients have been observed for a period of two years (at 14, 30, 60, 90, 180 days, one year and two years) after surgery.

## Results

Three serous secretions from the were observed in the 10<sup>th</sup> post-operative day (two right inguinal hernias and one bilateral hernia). The seroma was drained at office through an opening of 1 cm in the same skin incision, putting a drain of gauze. All patients recovered without complications.

The time of surgery was 10 to 15 minutes longer than the more common techniques.

The cost is limited to one or two Nylon 3-0 to fix the hernia sac. The cost of the mesh is much higher.

Until now only 4 (2%) patients show recurrences.

## Discussion

Inguinal hernia shows recurrences in 10% of cases in the best methods of correction.

The modern surgery of hernia began in Italy with Bassini making the reinforcement of the wall by pleating the *fascia transversalis* and joining the conjoint tendon to the inguinal ligament. Bassini's method was followed by many and changed by many others (4-13).



Fig. 1 - Hernia sac identification and resection.



Fig. 2 - Hernia sac on the previous suture, exceeding the internal ring, around the spermatic cord.

In the last century the repair with prosthesis, since Shouldice, consists in using the polypropylene mesh in order to avoid recurrences. The best prosthesis is made of materials that cause minor rejection, extrusion and local infection (9-13). The casuistic of removed prosthesis is not real since sometimes the patients choose another surgeon when inflammation or rejection occur (14,15).

The use of the hernia sac, since Alcino Lázaro da Silva, for the correction of abdominal hernia, opens a new line in the surgery of hernia. In the beginning the hernia sac was used only for incisional hernia. This tissue is rich in collagen, fibroblasts, vessels and other structures and can be useful to correct the inguinal hernia. In this study there are only 4 recurrences (2%) in six years of observation compared with the 10% in the worldwide literature (15-17). The serous secretion from the wound in three patients on the 10<sup>th</sup> post-operative day doesn't

cause recurrence of hernia. The hernia sac is an autogen tissue from the own patient, doesn't cause rejection and previous studies have shown a fibrosis occurring on it with transformation in aponeurotic tissue reinforcing the abdominal wall.

In many patients it is not possible to use the sac, i.e. in direct small hernias and when it is fine and friable (18-22).

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## Conclusion

The hernia sac, due to its resistance and good adaptation, can be used to repair the inguinal hernia. Since the tissue is from the own patient and doesn't result in inflammation reaction or rejection.

The method presented recurrences less frequent than those found in literature.