

Access this article online

Quick Response Code:



Website:

www.herniasurgeryjournal.org

DOI:

10.4103/ijawhs.ijawhs_84_24

Doctors undergoing inguinal hernia repair with the three-layer Shouldice technique: The PRO*Shouldice retrospective cohort study

Renato Miranda de Melo¹, Pedro Ducatti de Oliveira e Silva²,
Rodolfo Demitre Clemente Henriques da Silva³, João Elias de Godoi⁴,
Valério Ribeiro de Oliveira⁵

¹Department of Surgery,
Medical School, Brazilian
College of Surgeons,
Universidade Federal de
Goiás, Complex Hernia
Service at Municipal
Hospital of Aparecida,
Aparecida de Goiânia,
Brazil,

²College of Surgeons,
College of Digestive
Surgeons, Health
Sciences Post-Graduate
Programme, Universidade
Federal de Goiás, Goiânia,
Brazil,

³Hospital de Urgências de
Goiânia, Goiânia, Brazil,

⁴Department of Head and
Neck Surgery, Hospital
Araújo Jorge, Goiânia,
Brazil,

⁵Department of Radiology,
Clínica de Imagem VITA,
Goiânia, Brazil

Address for correspondence:

Dr. Pedro Ducatti
de Oliveira e Silva,
College of Surgeons,
College of Digestive
Surgeons, Health
Sciences Post-
Graduate Programme,
Universidade Federal
de Goiás, Avenida
Esperança s/n,
Câmpus Samambaia—
Prédio da Reitoria,
CEP 74690-900
Goiânia—Goiás, Brazil.
E-mail: pedroducatti@
gmail.com

Submitted: 07-Nov-2024

Revised: 19-Jan-2025

Accepted: 23-Jan-2025

Published: 26-Mar-2025

Abstract

PURPOSE: The Shouldice method has shown promising outcomes in reconstruction of the inguinal canal without mesh. However, measuring actual recurrence rates is difficult in clinical practice. Some studies have been applying algorithms based on Patient-Reported Outcomes (PRO) to facilitate the detection of recurrence. The aims of this study were to assess the medium- to long-term recurrence rate of the three-layer Shouldice technique in a population composed solely of doctors, validate the PRO questionnaire compared to clinical examination and ultrasound, and measure the patients' degree of satisfaction.

MATERIALS AND METHODS: This retrospective cohort study investigates the medium- to long-term outcomes of the three-layer Shouldice technique, with a minimum follow-up of 12 months postoperatively. Patients were evaluated by comparing clinical examination results, PRO questionnaire, and ultrasound.

RESULTS: Sixty-one patients comprising 76 hernias underwent primary inguinal hernia repair with a minimum follow-up of 12 months. Results indicate a low recurrence rate of 1.3%, with one patient requiring reoperation after 18.5 years. Self-perception of recurrence through the PRO questionnaire correlated well with clinical examination findings. Ultrasonographic evaluation detected incidental findings in three cases, highlighting the selective role of imaging in postoperative care. Patient satisfaction, assessed by the Net Promoter Score (NPS), was notably high, at 96, underscoring the procedure's acceptability among this cohort.

CONCLUSION: Overall, the three-layer Shouldice technique demonstrates comparable efficacy to that of standard methods, with minimal complications and high patient satisfaction, suggesting its viability as a suitable alternative in inguinal hernia repair.

Keywords:

Herniorrhaphy, inguinal hernia, patient-reported outcomes, recurrence rate, Shouldice repair

Introduction

In recent decades, the systematic employment of meshes has become the gold standard approach in inguinal hernia repair, under the "undoubted" argument that the recurrence rate would finally approach 1%. On the contrary, despite the adherence to this practice, in a recent study involving

over half a million American patients, this rate was 10 times higher.^[1] In such cases, reoperation is always more difficult and the results less promising. Moreover, mesh use has not been proven to be free from severe side-effects and complications, whether local or even systemic, albeit rare, such as the Autoimmune/Inflammatory Syndrome Induced by Adjuvants (ASIA).^[2]

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: de Melo RM, e Silva PDdO, da Silva RDCH, de Godoi JE, de Oliveira VR. Doctors undergoing inguinal hernia repair with the three-layer Shouldice technique: The PRO*Shouldice retrospective cohort study. Int J Abdom Wall Hernia Surg 2025;8:29-34.

In the mid-1950s, in Canada, Ernest Ryan introduced modifications to the Bassini technique, resulting in a new surgical procedure: the Shouldice repair, which involves reconstruction of the posterior wall of the inguinal canal in four suture layers. Over the following decades, it had widespread application internationally, gaining popularity, and became the gold-standard technique among purely tissue repairs.^[3-6] Later, Berliner in the USA,^[7] Kux *et al.* in Austria,^[8] and Schumpelick *et al.* in Germany^[9] demonstrated that the first two suture lines are sufficient to achieve equivalent results. In the latest review of “The international guidelines for groin hernia management,” the Shouldice technique was considered the best among purely tissue repairs.^[10,11] Furthermore, in 2020, the European Hernia Society held a meeting on the application of the Shouldice procedure, in which experts reiterated its adoption on an elective basis.^[12,13]

Recently, some studies have been applying algorithms based on a patient’s own perception of the received treatment: the Patient-Reported Outcomes (PRO). In 2006, a questionnaire was used to evaluate patients undergoing inguinal hernia repair, especially regarding inguinal pain and quality of life, but recurrence searching was observed in clinical examination.^[14] Another study confirmed that PRO can be used to detect recurrence after ventral hernia repair. Patients were asked to answer three questions: “Regarding your hernia operation, (1) do you feel your hernia has come back? (2) Do you feel or see a bulge? (3) Do you have physical symptoms or pain at the site?”^[15] Thus, employing the same methodology to assess the long-term recurrence of such a prevalent condition, as inguinal hernia, may be useful.

Since 1986, we have been using a modified Shouldice technique, which omits the fourth and final layer, with low recurrence rates.^[16] However, it is always difficult to establish its actual recurrence rate. In the authors’ experience, with around 2,500 operations performed, there is a peculiar cohort of patients, composed exclusively of doctors, whose access for reexamination eased a more realistic recording of these rates. Therefore, the aims of this study were as follows: to verify the medium- to long-term recurrence rate obtained with the use of the three-layer Shouldice technique, for the treatment of primary inguinal hernia in a population composed solely of doctors; to validate the results of the PRO questionnaire in inguinal hernia repair, by comparing it with those of clinical examination and dynamic ultrasound (US); and to measure the patients’ degree of satisfaction.

Materials and Methods

This is a retrospective cohort study, which included only doctors who underwent primary inguinal hernia

repair (unilateral or bilateral) performed by one of the authors using the three-layer Shouldice technique.^[16] Patients were recruited for clinical examination, answer the PRO questionnaire, and were requested to take an ultrasonography. The minimum follow-up duration was 12 months postoperatively. Each hernia was considered one case.

The procedure consisted of a complete dissection of the inguinal canal, identifying the main hernial sac, any secondary defect, and anatomical distortions. Also, the remnants employed in the repair were recognized. The ilioinguinal, ilio-hypogastric, and genital branch of the genitofemoral nerves were isolated and preserved. After sectioning the cremaster muscle and treating the indirect sac, the inguinal floor (posterior wall) was open from the deep inguinal ring (DIR) to the pubic tubercle (PT), dividing on one side the triple layer—the lower (free) edges of the internal oblique and transversus abdominis and transversalis fascia — and, on the other, the iliopubic tract (IPT). Also, this step involves the treatment of the direct sac (by incision or circumcision of the transversalis fascia).

Regarding the synthesis (herniorrhaphy), the first layer is formed by suturing the IPT to the posterior surface of the triple layer, starting at the pubis and continuing to the neoformation of the DIR, which is adjusted by the proximal stump of the cremaster, after encircling the cord inferomedially. Using the same suture, it returned to the pubis, suturing the free edge of the triple layer to the inguinal ligament, forming the second layer. Finally, the direction of the suture was reversed again, now covering the previous layer with the free edge of the lower flap of the external oblique aponeurosis, medially a small fold obtained on its deep surface up to the new DIR. This is the third and final layer of this variant [Figure 1].

The date and age of the participants at the operation and the postoperative follow-up period (in months) were recorded. Participants also answered (yes or no) if they thought their hernia recurred (1st question), if they perceived any bulging (2nd) or residual pain (3rd) at the site, and if they would recommend the same procedure they underwent (4th). Then, they were examined, preferably by the same surgeon, in the upright position and under Valsalva maneuver to detect clinically relevant recurrence (primary outcome). Subsequently, they were asked to undergo a dynamic ultrasound (US), performed by an experienced radiologist in examining the abdominal wall, also in the upright position and under Valsalva maneuver, to detect radiological signs of recurrence. Thus, we calculated the sensitivity and specificity of the self-perception of recurrence, the clinical examination, and the US (secondary outcome).

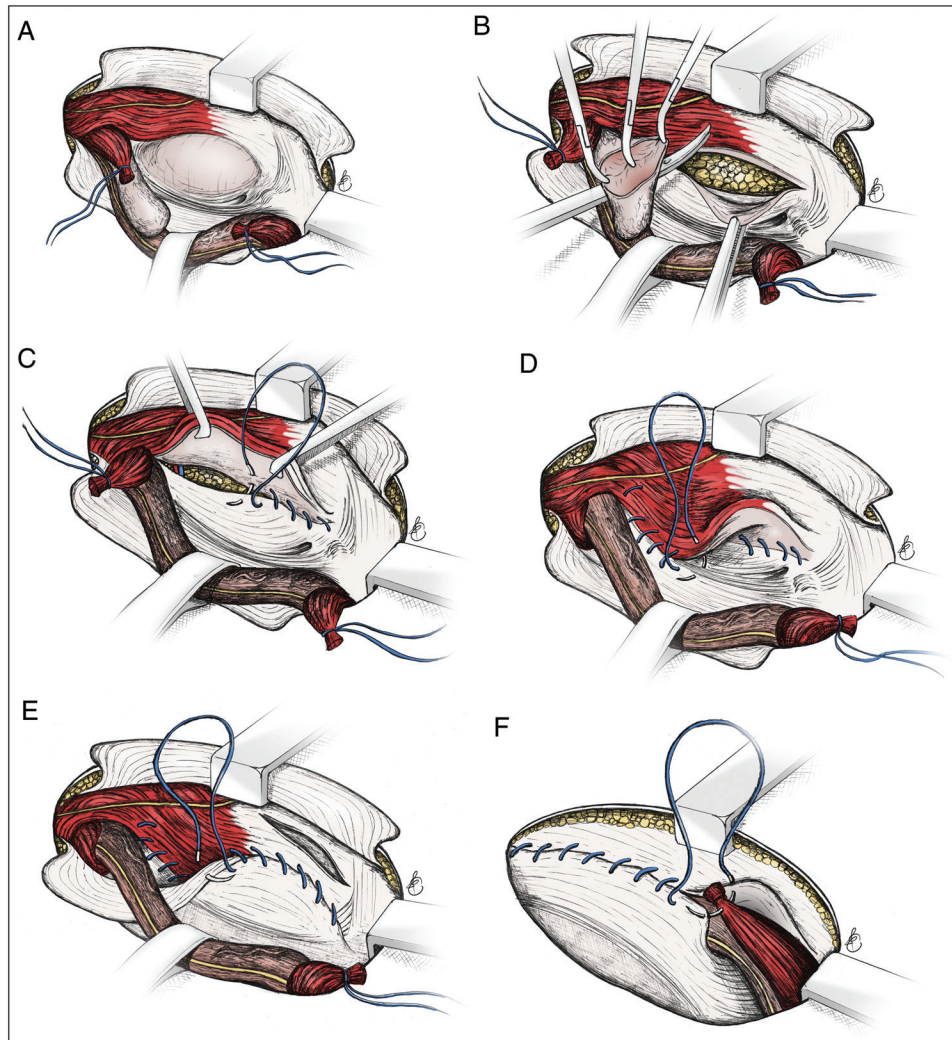


Figure 1: Illustration of the surgical steps adopted in this study for inguinal hernia repair – three-layer Shouldice technique: inguinal canal opened and dissected (a), showing the indirect sac closely to the spermatic cord and the direct sac (posterior wall bulging which will be incised) (b); first layer-suture of the iliopubic tract to the posterior surface of the triple layer, using a simple running suture from the pubic tubercle to the deep inguinal ring, which is adjusted using the proximal cremasteric stump (c); second layer – suture of the triple layer to the inguinal and lacunar ligament (if it is necessary, a relaxing incision on the anterior rectus sheath can be done) (d); third layer – suture involving the lower flap of the external oblique aponeurosis over the internal oblique, proceeding through a small fold until covering the whole second layer laterally (e); closing of the inguinal canal by suturing the external oblique aponeurosis and anchoring the distal cremasteric stump to the new superficial inguinal ring (f)

The patients' level of satisfaction with the procedure was evaluated by Net Promoter Score (NPS) *a posteriori*.^[17] This is an instrument developed by companies for customer satisfaction surveys, based on customers who have been unsatisfied, indifferent, or very satisfied with the service received, in other words, detractors, neutrals, and promoters, respectively. This index calculus is established through the following premise: the participant should evaluate the chance of recommending the service/company from 0 to 10. Values between 0 and 6 denote the detractors, from 7 to 8 the neutrals, and from 9 to 10 the promoters. The NPS result is obtained by the following formula: percentage of promoters – percentage of detractors. The participants in this study were asked to respond only if they would recommend the received treatment. Therefore, the NPS instrument was adapted to the way satisfaction level was measured.

Patients' profile, PRO questionnaire answers, physical examination, and US were evaluated using a contingency table, applying Pearson's chi-square test with continuity correction. Data were analyzed using Statistical Package for the Social Sciences (IBM Corporation, Armonk, USA), version 26.0. The significance level adopted was 5% ($P < 0.05$).

The project was approved by the Ethics Committee and was in accordance with the principles of Helsinki Declaration. After being properly informed, all participants signed the consent form authorizing their participation in the study.

Clinical trial registry

This work is a retrospective study. No clinical trials were involved.

Table 1: Demographic characteristics of the sample (n = 76)

	n	%
<i>Anesthesia</i>		
Neuraxial	40	52.6
General	1	1.3
Local	35	46.1
<i>Laterality</i>		
Bilateral	31	40.8
Unilateral	45	59.2
<i>Postoperative follow-up (months)</i>		
12–60	20	26.3
60–120	29	38.2
> 120	27	35.5
<i>Age at surgery (years)</i>		
22	1	1.3
30–59	37	48.7
> 60	38	50.0

Table 2: Patient-reported outcomes (PRO)

	n	%
<i>Do you think your hernia recurred?</i>		
No	75	98.7
Yes	1	1.3
<i>Do you feel or see any bulge?</i>		
No	75	98.7
Yes	1	1.3
<i>Do you feel pain?</i>		
No	76	100.0
Yes	0	0.0
<i>Would you recommend this procedure?</i>		
No (Detractor)	1	1.7
Yes (Promoter)	60	98.3
NPS	96	

n, absolute frequency; %, relative frequency; NPS, Net Promoter Score

Table 3: Association between PRO, physical examination and US

	Physical examination (n = 76)		p*	US (n = 68)		p*
	No recurrence n (%)	Recurrence n (%)		No recurrence n (%)	Recurrence n (%)	
<i>Do you think your hernia recurred?</i>						
No	75 (100.0)	0 (0.0)	<0.001	64 (100.0)	3 (75.0)	<0.001
Yes	0 (0.0)	1 (100.0)		0 (0.0)	1 (25.0)**	
<i>Do you feel or see any bulge?</i>						
No	75 (100.0)	0 (0.0)	<0.001	64 (100.0)	3 (75.0)	<0.001
Yes	0 (0.0)	1 (100.0)		0 (0.0)	1 (25.0)	
<i>Do you feel any pain?</i>						
No	75 (100.0)	1 (100.0)	1.000	64 (100.0)	4 (100.0)	1.00
Yes	0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)	

*Chi-square; n absolute frequency; (%) relative frequency; US ultrasound;

**patient refused to take an ultrasound exam, as recurrence was evident

Results

Sixty-two patients with primary inguinal hernia were enrolled (61 men and one woman). One participant, who underwent bilateral repair (two cases), did not return for follow-up and was excluded from analysis. Finally, 61 patients completed the study, totaling 76 operated hernias — sixteen of them had bilateral hernias, and eight underwent simultaneous repair. The average age at surgery was 56 years (ranging from 22 to 81), with a mean follow-up period of 107 months (ranging from 13 to 324). All participants answered the questionnaire and were examined according to the protocol [Table 1].

Regarding the PRO questionnaire, only one patient reported a recurrence (1.3%), 223 months or 18.5 years later, associated with a contralateral primary hernia. Both were clinically evident, making imaging unnecessary. Bilateral repair was performed using the Lichtenstein technique on the recurrent side and the Shouldice technique on the contralateral (primary) side. This patient was also the only one who did not recommend the procedure (detractor). The patients did not report any residual protrusion (98.7%) or pain (100%) and

recommended the received treatment (promoter); thus, the overall NPS of this procedure was 96 [Table 2].

Ultrasonographic evaluation was performed in 68 out of 76 cases (89.5%). In three cases, fatty tissue was found in the inguinal canal and a partially open DIR. They were asymptomatic and did not notice any signs of recurrence, not even upon physical examination. At the end of data collection, they had completed 86, 90, and 209 postoperative months of follow-up [Table 3]. All of them refused reoperation to correct these incidental US findings with the full consent of the senior surgeon.

Discussion

This is a retrospective cohort study that evaluated the recurrence rate in doctors who underwent primary inguinal hernia repair, employing the Shouldice technique, in which the fourth and final layer was omitted.

Why study an exclusive population of doctors? There are several reasons, starting with the high level of demand from the participants and possibly their greater critical sense when evaluating a personal surgical

experience. This point was important because some outcomes depended on self-perception of what was considered a cure or recurrence, as well as the degree of satisfaction with the received treatment. However, there is an important bias here: since the demand for the surgeon who performed the operations was spontaneous or by recommendation, this may have mitigated discomfort or negative feelings inherent to the invasive nature of any surgical intervention. Also, this sample was easily findable, which helped active follow-up for examination, even in the long term. Nevertheless, not all of them underwent the follow-up US, despite repeated requests.

The best examination for the diagnosis and recurrence evaluation of inguinal hernia is (and will continue to be) clinical examination.^[10,11,18-22] It is worth noting that the patients themselves are also capable of identifying a hernia or a recurrence, irrespective of being a doctor or a layperson. However, there are recurrences that can go unreported because they are small or imperceptible, completely painless, and do not affect the patients' daily activities or quality of life.^[14]

Despite dynamic US imaging (i.e., under physical effort) having high sensitivity to identify inguinal–femoral hernias (95%), it is not absolute. Its indications are limited to doubtful cases, especially in obese patients and women, in whom clinical manifestations are subtle and primarily to elucidate inguinal pain which is a result of an indeterminate cause. Therefore, similar to any complementary examination, its indication should be selective.^[18-22]

In this study, US detected subclinical recurrences, revealed by the presence of some fatty tissue in the inguinal canal of three patients, without any clinical expression. When did these occur? Are they progressing? It is impossible to know. These remnants can, therefore, be interpreted as pseudo-recurrences or, better, incidental findings. Since they were detected only by imaging, we did not propose any surgical intervention, which all three patients strongly agreed, as they felt completely cured and had no restrictions on their work or even sports activities. If it was not the study protocol, they would not have undergone US or any other imaging examination.

Hypothetically, an asymptomatic patient without a history of inguinal repair, who presented to the surgeon with an US showing similar alterations to those of our three patients, would likely be refused surgery as the potential risks of complications (infection, chronic pain, and recurrence) would outweigh the intended benefits. Although there is always the possibility of incarceration, such occurrences are very rare. As long as quality of life is not affected and could even be worsened by the operation, watchful waiting is warranted in such

cases.^[23] If this approach is advisable for treatment of primary hernias, it should be imperative for recurrent ones.

The only patient who presented a recurrence has self-identified it, which was promptly confirmed upon examination, without needing any complementary exams — in fact, he did not undergo an US because he deemed it unnecessary. The recurrence occurred 223 months (18.5 years) after the repair. He was the only patient reoperated on in the entire series, which was corrected using the Lichtenstein technique. Also, he had a primary contralateral inguinal hernia and underwent repair by the proposed Shouldice variant simultaneously. Exactly 6 years later, there are no signs of recurrence on either side, as confirmed by both clinical examination and US.

In summary, recurrence can be divided into two types: (1) as clinically significant recurrence, which requires surgical reintervention; and (2) as an incidental finding, detected only by imaging, which initially does not require further repair.

The simplified PRO questionnaire proved effective in identifying clinically relevant recurrences. Equally to ventral hernias, recurrences can be detected by the patients themselves, even if they are not medically trained. In other words, if the patient suspects that their inguinal hernia has reappeared, it is almost certain that it has recurred. Once confirmed, it indicates that it will require further correction, under the risk of acute complications, such as bowel obstruction.

Lastly, the level of satisfaction with the adopted procedure was surprisingly high, given the high degree of recommendation observed. An NPS of 96, as achieved within this specific treatment, means excellence in service. Although the doctor–patient relationship was strong enough to increase tolerance for postoperative discomfort, there was not a single case of chronic inguinal pain.

Limitations

As a retrospective study, the statistical superiority in this cohort of patients was not intended to be analyzed with the three-layer Shouldice technique. The same surgeon performed both operations and postoperative clinical examinations, which represents a risk of subjective bias. However, the authors tried to minimize this risk by performing a postoperative ultrasonography conducted by an experienced radiologist. Also, the patients were referenced to the surgeon and sought him for this specific technique and his expertise, reflecting on the high degree of satisfaction.

Conclusion

In conclusion, the three-layer Shouldice technique showed low medium- to long-term recurrence rates of primary inguinal hernia in adults (1.3%). Also, we observed that the findings on PRO were similar to those of the clinical examination. Even if including patients with abnormal postoperative findings on US (incidental), long-term cure rates of around 95% can be considered highly satisfactory for a purely tissue repair. Additionally, there were no occurrences of chronic inguinal pain or long-term discomfort, and patients' degree of satisfaction was high, with an NPS of 96.

Author contributions

RMdM: Manuscript conception, research developer, procedures' main surgeon, postoperative physical examination, results analysis, and manuscript writing. PDdOeS: Auxiliar surgeon of some procedures, manuscript review, and English version writing. RDCHdS: Research developer. JEdG: Illustrations' drawer and research developer. VRdO: Radiologist responsible for ultrasonography. All the authors declared that they have read and approve the final version of the manuscript.

Ethical policy and institutional review board statement

This study was in accordance with the principles of Helsinki Declaration and was approved by the ethical commission of the Goiânia General Hospital (Hospital Geral de Goiânia) in Brazil with a registration number CAAE 58977022.0.0000.0035, dated on July 10th 2023.

Declaration of patient consent

After being properly informed, all participants signed the consent form authorizing their participation in the study.

Data availability statement

The authors declared their willingness to share the data to support results on request, which is in personal possession of RMdM.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflict of interest.

References

- Murphy BL, Ulb DS, Zhang J, Habermann EB, Farley DR, Paley K, et al. Trends of inguinal hernia repairs performed for recurrence in the United States. *Surgery* 2018;163:343-50.
- Tervaert JWC, Martinez-Lavin M, Jara LJ, Halpert G, Watad A, Amital H, et al. Autoimmune/inflammatory syndrome induced by adjuvants (ASIA) in 2023. *Autoimmun Rev* 2023;22:103287.
- Welsh DRJ, Alexander MAJ. The Shouldice repair. *Surg Clin North Am* 1993;73:451-69.
- Malik A, Bell CM, Stukel TA, Urbach DR. Recurrence of inguinal hernias repaired in a large hernia surgical specialty hospital and general hospitals in Ontario, Canada. *Can J Surg* 2016;59:19-25.
- Bendavid R. Re: Recurrence of inguinal hernias repaired in a large surgical specialty hospital in Ontario, Canada. *Can J Surg* 2016;59:E3.
- Agarwal D, Sinyard RD, Ott L, Reinhorn M. Primary tissue repair for inguinal hernias — the Shouldice repair technique and patient selection. *Surg Clin N Am* 2023;103:859-73.
- Berliner SD. An approach to groin hernia. *Surg Clin North Am* 1984;64:197-213.
- Kux M, Fuchsjäger N, Schemper M. Shouldice is superior to Bassini inguinal herniorrhaphy. *Am J Surg* 1994;168:15-8.
- Schumpelick V, Tittel A. Shouldice repair. In: Schumpelick V, Arlt G, Conze J, Junge K, editors. *Hernia Surgery*, 5th ed. Thieme: Stuttgart; 2019. p. 107-11.
- Simons MP, Smietanski M, Bonjer HJ, Bittner R, Miserez M, Aufenacker TJ, et al. The Hernia surge group International guidelines for groin hernia management. *Hernia* 2018;22:1-165.
- Stabilini C, van Veenendaal N, Aasvang E, Agresta F, Aufenacker T, Berrevoet F, et al. Update of the international HerniaSurge guidelines for groin hernia management. *BJS Open* 2023;7:zrad080.
- Lorenz R, Arlt G, Conze J, Fortelny R, Gorjanc J, Koch A, et al. Shouldice standard 2020: Review of the current literature and results of an international consensus meeting. *Hernia* 2021;25:1199-207.
- Szasz P, Spencer Netto F; Shouldice Hospital. Shouldice Hospital comments on "Shouldice standard 2020: Review of current literature and results of an international consensus meeting. *Hernia* 2021;25:1375-6.
- Hawn MT, Itani KM, Giobbie-Hurder A, McCarthy M, Jonasson O, Neumayer LA. Patient-reported outcomes after inguinal herniorrhaphy. *Surgery* 2006;140:198-205.
- Baucom RB, Ousley J, Feuer ID, Holzman MD, Sharp KW, Poulouse BK, et al. Patient reported outcomes after incisional hernia repair: Establishing the ventral hernia recurrence inventory. *Am J Surg* 2016;212:81-8.
- Melo RM, Cozadi AO, Matias IS, Moreira CC. Modified shouldice technique in primary groin hernia repair. *Rev Col Bras Cir* 1998;25:167-71.
- Reichheld, Frederick F. *The One Number you Need to Grow*. Brighton: Harvard Business Review; 2008.
- Robinson P, Hensor E, Landsdown M, Ambrose NS, Chapman AH. Inguinofemoral hernia: Accuracy in patients with indeterminate clinical features. *Am J Roentgenol* 2016;187:1168-78.
- Chiu MK, Hadied MO, Klocho C, van Holsbeeck MT. Comparison of patient characteristics and treatment approaches for femoral and inguinal hernias utilizing dynamic ultrasound at a single institution. *Hernia* 2023;27:1245-52.
- Plumb AA, Rajeswaran G, Abbasi MA, Masci L, Warren O, Wilson J. Contemporary imaging of inguinal hernia and pain. *Br J Radiol* 2022;95:20220163.
- Liu N, Prout TM, Xu Y, Smith J, Funk LM, Greenberg JA, et al. Unnecessary use of radiology studies in the diagnosis of inguinal hernias: A retrospective cohort study. *Surg Endosc* 2021;35:4444-51.
- Ridha H, de Vries RPH, Nijholt IM, Abbes S, Boomsma MF, Nijveldt RJ. Positive predictive value of ultrasound in correctly identifying an inguinal hernia: A single-centered retrospective pilot study. *Insights Imaging* 2022;13:133.
- Turaga K, Fitzgibbons RJ, Puri V. Inguinal hernias: Should we repair? . *Surg Clin North Am* 2008;88:127-38, ix.