

Shouldice inguinal hernia repair is not associated with increased postoperative pain or prolonged recovery compared to Lichtenstein repairs: A Registry-based Comparison

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It's a well-oiled machine








No referral system

5 ORs
6 cases per day
6 days a week
6,000 hernias per year

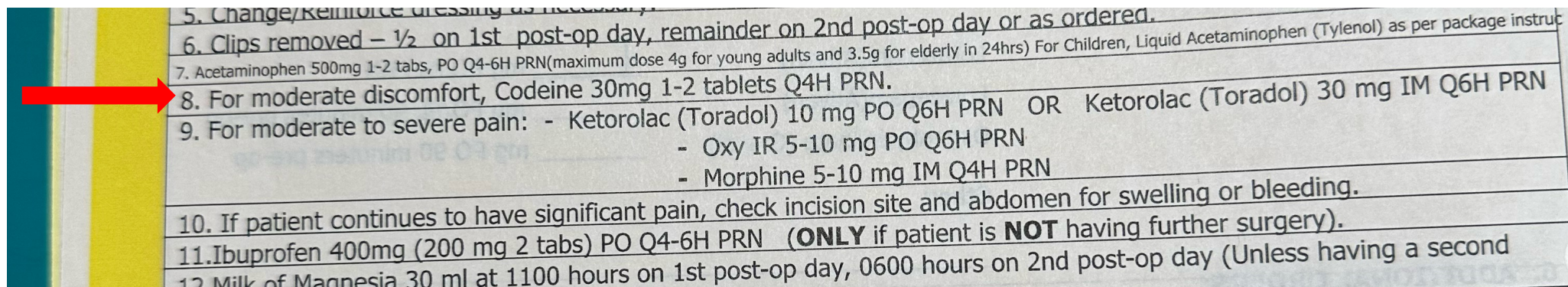
3-day admission



Incidence of opioid use and early postoperative pain intensity after primary unilateral inguinal hernia repair at a single-center specialty hospital

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- 414 patients – prospectively collected data
- **9.2% (38)** took opioids during post-op stay (2 days)
- No difference in pre-op NRS between patients who took opioids vs those who did not
- Higher post-op NRS in patients who received opioids
- DID NOT look at discharge opioid prescriptions



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- **Aim:** Compare **short-term pain** and **QOL** between Shouldice and Lichtenstein techniques
- Retrospective ACHQC study
- **1:2 propensity-score matched:** age, BMI, ASA class, diabetes, anticoagulation use, smoking, scrotal component, euraHS baseline score
- 143 Lichtenstein vs 109 Shouldice

Table 1: Demographics and Baseline Characteristics

Characteristic	Lichtenstein (n=183)	Shouldice (n=109)	p-value
Gender (male)	166 (91%)	99 (91%)	>0.9
Age (years)	67 [57, 75]	67 [59, 73]	>0.9
BMI	24.4 [22.15, 26.5]	23.6 [21.9, 26]	0.2
Hypertension	69 (38%)	31 (28%)	0.11
Current Smoker	12 (4.1%)	8 (4.4%)	0.4
Diabetes Mellitus	10 (5.5%)	5 (4.6%)	0.7
COPD	4 (2.2%)	0	0.3
Anti-coagulation medication	20 (11%)	8 (7.3%)	0.3
Inflammatory Bowel Disease	0	0	>0.9
Immunosuppression	3 (1.6%)	3 (2.8%)	0.7
History of abdominal wall SSI	0	0	>0.9
ASA Class (1-2)	32 (17%)	94 (86%)	0.4
Scrotal Component	21 (11%)	10 (9.2%)	0.5
EuraHS Overall Baseline Score, median [IQR]	22 [12, 38]	22.33 [10, 38]	0.8

**Shouldice median BMI – 25.2

Table 2: Operative Details

Characteristic	Lichtenstein (n=183)	Shouldice (n=109)	p-value
Wound status (clean)	183 (100%)	108 (99%)	0.4
Elective	183 (100%)	109 (100%)	>0.9
Operative Time (min)			
0-59	88 (48%)	77 (71%)	<0.001
60-119	91 (50%)	29 (27%)	
120-179	4 (2.2%)	3 (2.8%)	
180+	0	0	
Anesthesia			
General	139 (76%)	46 (42%)	<0.001
Procedural/Block	44 (24%)	63 (58%)	
ASA Class			
1-2	151 (83%)	94 (86%)	0.4
3-5	32 (17%)	15 (14%)	
Intraoperative Complications	0	0	>0.9
VHWG			
Grade 1	149 (81%)	95 (87%)	0.11
Grade 2	34 (19%)	13 (12%)	
Grade 3	0	1 (0.9%)	

Table 3: 30-Day Operative Outcomes

Characteristic	Lichtenstein (n=183)	Shouldice (n=109)	p-value
Surgical Site Infections	0	0	>0.9
Surgical Site Occurrences	4 (2.2%)	1 (0.9%)	0.7
Hematoma	2	0	
Seroma	0	1	
Fascial Disruption	1	0	
Unspecified	1	0	
Surgical Site Occurrence Requiring Procedural Intervention (SSOPI)	0	0	>0.9
Recurrence	1 (0.5%)	0	>0.9
Reoperation	1 (0.5%)	1 (0.9%)	>0.9

Table 3: 30-Day Pain and Opioid Requirements

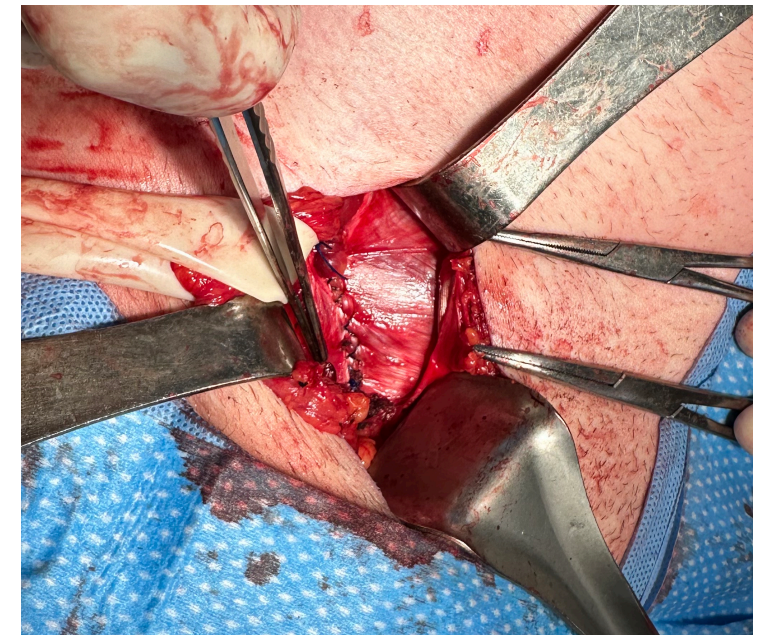
Characteristic	Lichtenstein (n=183)	Shouldice (n=109)	p-value
Peripheral Nerve Injury	0	0	>0.9
Pain Requiring Intervention	0	0	>0.9
Number of opioid tablets taken in 30-days after surgery			
0	84 (55%)	72 (68%)	0.035*
>1	69 (45%)	34 (32%)	
Missing	30	3	

VS 9.2% at Shouldice Hospital who required opioids

Table 4: Change of 30-Day EuraHS Quality of Life Scores from Baseline, median [IQR]

Characteristic	Lichtenstein (n=183)	Shouldice (n=109)	p-value
EuraHS Overall Scores	-5 [-21.5, 6.67]	-5 [-18, 5]	>0.9
EuraHS Pain Domain	-1 [-7, 1]	-1 [-5, 2]	0.3
EuraHS Restriction Domain	0 [-9, 5.25]	0 [-8.5, 5]	>0.9
EuraHS Cosmetic Domain	-2 [-6, 1]	-2 [-8, 2]	0.8

EuraHS MCID
Pain – 3
Restriction -5
Cosmesis -2



Opioid Consumption



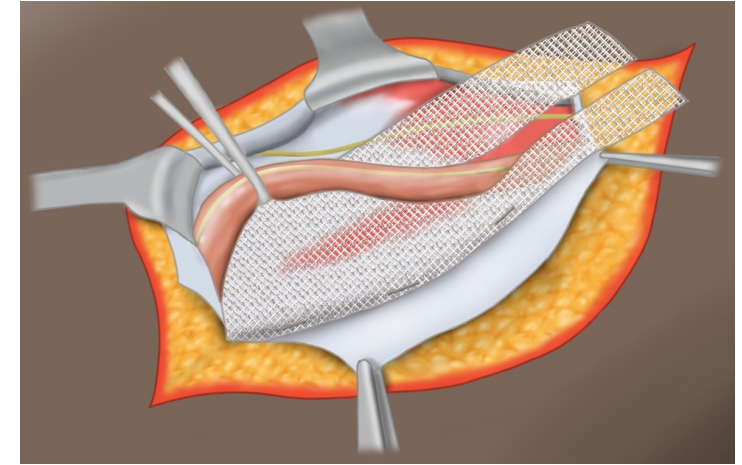
9.2%

VS



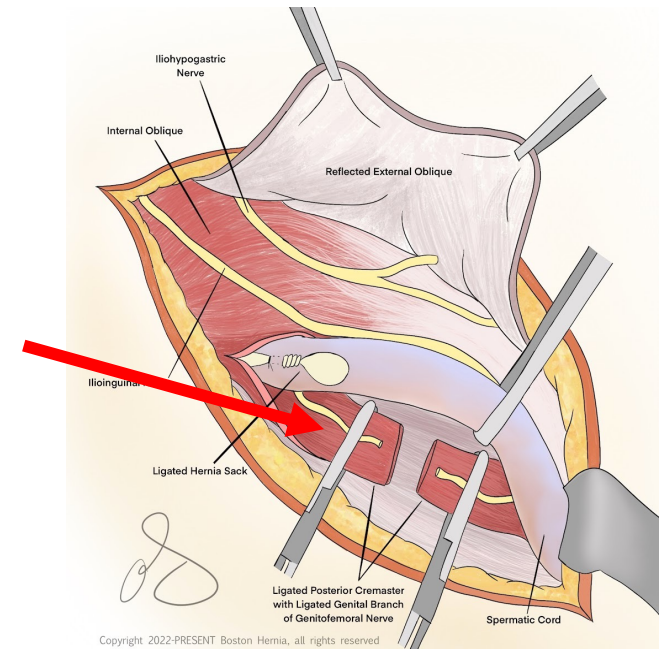
32%

VS



45%

- Pre-operative counseling
- Peer-to-peer support
- Excessive local anesthetic ~120cc *Ropivacaine*
- Routine division of the genital branch with the cremasterics
- Inpatient hospital stay
- IM Ketorolac?



Conclusion

- Lichtenstein and Shouldice have similar pain and QOL at 30-days
- Shouldice patients took less opioids
- These findings should be included when discussing the pros and cons of tissue-based repair



Thank you

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Northern Toronto
Hernia Program



Polypropylene vs. stainless-steel Wire Suture: Short-term Recurrence Rate after Shouldice primary inguinal hernia Repair, a non-inferior analysis among 1120 patients

- 1120 patients
- 16 Month Follow-up
- Median BMI – 25.2
- Prolene group → larger hernias, longer LOS
- 18 recurrences (patient reported) → 1.6%
- No statistical difference between Polypropylene: 7 (1.25%) vs. stainless steel wire: 11 (1.96%), $p > 0.05$
- No difference in SSI

