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## European and Mid-Term IAAS Congress of Ambulatory Surgery,

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### Development of Outpatient Laparoscopic Surgery in Hong Kong

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*Continued.....*

In addition to clinical observation, patients were considered eligible for discharge when they fulfilled a set of pre-discharge criteria (Table 2). A 24-hour hotline was provided before discharge. A dedicated nursing staff would perform phone questionnaire on postoperative days one and three. The operating surgeon would follow all the patients at DSC at postoperative weeks one and four.

### Standard anaesthetic protocol and postoperative pain management:

Postoperative nausea and vomiting was a common problem leading to failure in outpatient laparoscopic procedures. We adopted a standard anaesthetic protocol in performing the operations. Anaesthesia was induced using intravenous propofol and fentanyl at the body-mass-dependent dose. Following an endotracheal intubation, all patients were put on mechanical ventilation and on inhalational anaesthetic agents (nitric oxide and isoflurane) for maintenance. Before reversal of the anaesthesia, all of them would be given intravenous metoclopramide as the anti-emetics. Another dose of metoclopramide or ondansetron would be given when necessary after the procedure if they developed repeated vomiting. Opiate-free anaesthetic protocol, involvement of an experienced anaesthesiologist and good communication between the anaesthesiologist and the operating surgeon (so as to reduce inhalational anaesthetic gas at the end of operation earlier) would be the keys to the avoidance of postoperative nausea and vomiting.

At the end of the operation, all port-sites would be infiltrated with 2-3 ml of 0.25% bupivacaine. After the operation, all patients were given adequate oral Dologesic<sup>®</sup> (Llorens Pharmaceuticals, Miami, FL, USA) 1 tablet every 6 hours and diclofenac (Voltaren SR<sup>®</sup>; Novartis Pharmaceuticals, Basel, Switzerland) 100 mg tablet daily when necessary. Pain control based on the above regimen was

excellent (3-4).

**TABLE 1.** Outcomes of outpatient laparoscopic cholecystectomy (LC) over a five-year period:

	2000	2001	2002	2003	2004 (till May)
Total	11	28	30	45	21
Outpatient LC	8 (72.7)	25 (89)	27 (90)	44 (97.9)	21 (100)
Overnight LC	2 (18)	2 (7.1)	2 (6.7)	1 (2.2)	0 (0)
Conversions	1 (9.1)	1 (3.6)	1 (3.3)	0 (0)	0 (0)
Readmission	1 (3.6)	1 (3.6)	0 (0)	0 (0)	0 (0)

\* Data are expressed as number with percentage in parentheses.

**TABLE 2.** Discharge criteria:

	Score *
<b>Vital signs:</b>	
Within 20% of pre-op value	2
Between 20-40% of pre-op value	1
> 40% or < 40% of pre-op value	0
<b>Ambulation and mental status:</b>	
Oriented AND gait steady	2
Oriented OR gait steady	1
Neither	0
<b>Pain, nausea or vomiting:</b>	
Minimal	2
Moderate	1
Severe	0
<b>Surgical bleeding:</b>	
Minimal	2
Moderate	1
Severe	0
<b>Intake and output:</b>	
Has had PO fluid AND voided	2
Has had PO fluid OR voided	1
Neither	0

\*To be eligible for discharge, the patient must achieve a score of <sup>3</sup>8. Pre-op = preoperative; PO = per-oral.

### OUTPATIENT ENDOSCOPIC TOTALLY EXTRAPERITONEAL INGUINAL HERNIOPLASTY (TEP):

TEP was first performed in 1999 at our institution. With an experience of 200 in-patient TEPs, outpatient TEP has been performed since 2001. Between March 2001 and 2003, patients who underwent outpatient TEP by a single surgeon (HL) at our

department were recruited. Inclusion criteria were reducibility of the inguinal hernia, ASA risk classification of I or II, as well as the presence of a competent adult to accompany the patient home and look after the patient for 24 hours. In addition, patients had to live within one hour's travel to the hospital. Previous abdominal surgery was considered a contraindication for TEP.

All patients were admitted to DSC on the day of operation. Pre-emptive ketorolac 30 mg was administered intravenously upon induction of general anaesthesia. The standard anaesthetic protocol and the anaesthetic team were the same as described in outpatient LC. The operative details were described elsewhere (6). A three-port technique was employed. Balloon dissection and urinary catheter were not utilized. The extraperitoneal space was dissected and created using endoscissors with diathermy. A Prolene mesh of 10 x 14 cm<sup>2</sup> (Ethicon, Inc., Somerville, NJ, USA) was placed to cover the deep inguinal ring, the posterior wall of the inguinal canal, and the femoral ring. Wounds were infiltrated with 0.5% bupivacaine as in outpatient LC.

**Results:**

A total of 417 patients underwent TEP during the study period. One hundred and two patients (24.5%) with 114 inguinal hernias, who underwent TEP as an outpatient procedure, were recruited. All TEPs were successfully performed. None of the patients required conversion. The successful rate was 97%. Three patients were admitted overnight because of ECG changes during surgery and dizziness. One patient required readmission to hospital on postoperative day one because of wound pain and vomiting. Overall, the rate of postoperative nausea and vomiting was very low. Only mild postoperative complications such as: seroma and bruising, were encountered, but they were all self-limiting. No recurrence was noted at a mean follow-up of 5 months (2).

The important roles of DSC, a standardized anaesthetic protocol and postoperative pain management as well as the PAC have been previously discussed. In addition, a randomized trial was conducted to compare the outcomes of outpatient TEP with outpatient open Lichtenstein hernioplasty.

Comparison with outpatient Lichtenstein hernioplasty in male patients: From 2002 to 2004, a total of 200 male patients were randomized to undergo either outpatient unilateral TEP or open Lichtenstein hernioplasty under general anaesthesia.

All TEPd were successfully performed without conversion. The mean operation time for TEP (50 ± 13.2 min) was significantly shorter than that for open repair (58 ± 17.6 min) (P < 0.001). The pain score at rest was significantly lower in the TEP group than in the open group. On average, the patients returned to work 8.6 days after TEP and 14 days after Lichtenstein hernioplasty (P = 0.006). The incidence of chronic groin pain 1 year after TEP (9.9 %) was significantly lower than that after open surgery (21.7%) (P = 0.032).


In conclusion, outpatient TEP was superior to open Lichtenstein hernioplasty for repair of primary inguinal hernia in male patients. The benefits of outpatient TEP included less pain, a faster return to work, and a lower incidence of chronic groin pain (7).

**FUTURE DIRECTIONS:**

Despite the early success in outpatient LC, striving for a higher standard of patient care is still the ultimate goal for surgeons. Recently, a randomized trial was conducted at our department to compare low-pressure (7 mmHg) versus standard-pressure pneumoperitoneum (12 mmHg) in outpatient LC. It was shown that for simple and uncomplicated gallstone diseases, low-pressure pneumoperitoneum was safe and effective with similar outcomes when compared with diseases treated under standard-pressure pneumoperitoneum (8).


It is not uncommon for patients with groin hernias to have significant co-morbidities, which are considered a relative contraindication for TEP because it needs to be performed under general anaesthesia. The early result of these patients undergoing TEP under spinal anaesthesia was released from our department. Four patients successfully underwent TEP under spinal anaesthesia. Two patients required conversion to open repair because of lack of cooperation and inadequate spinal anaesthesia. No significant complication was encountered. To shorten the operation time, an experienced laparoscopic surgeon was the pre-requisite for a successful procedure. Nonetheless, good cooperation among the anaesthesiologist, surgeon and patient cannot be overlooked (9). It provided an alternative choice other than open repair for patients with significant co-morbidities.

*To be continued.....*



**Surgery & discharge on same day for:**  
 Hernia, Piles, Fistula, Fissure, Diabetic foot, Pilonidal sinus, Ingrown toe nail, Lipoma, Sebaceous cyst, Abscess, Circumcision, Vasectomy, D & C, Tubal Ligation, Diagnostic Lap; etc. (In selected cases)  
**Extended stay:** Appendix, Gall stones, Hystrectomy, etc.

**Other Surgeries related to:** Paediatric, Urology, Plastic, ENT, Vascular. Chemotherapy & related treatment. (Please take prior appointment).



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