

Convalescence after laparoscopic sterilization

Dorthe Hjort Jakobsen^a, Torben Callesen^{b,*}, Lars Schouenborg^c, Dorthe Nielsen^c,
Henrik Kehlet^a

^a Department of Surgical Gastroenterology, H:S Hvidovre University Hospital, DK-2650 Hvidovre, Denmark

^b Department of Anaesthesiology, H:S Hvidovre University Hospital, DK-2650 Hvidovre, Denmark

^c Department of Gynaecology and Obstetrics, H:S Hvidovre University Hospital, DK-2650 Hvidovre, Denmark

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Abstract

To describe the convalescence after laparoscopic sterilization (LS), 76 female patients in Denmark completed questionnaires and diaries. Work was resumed 5 days and recreational activity 3 days after the procedure (median). Impairment of activities of daily living was pronounced only on days 0–2. Women should expect to resume all activities within 5–6 days after LS.

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1. Introduction

Convalescence after laparoscopic sterilization (LS) is poorly described with respect to late post-operative pain, impairment of functions of daily living and return to work or major recreational activities. In addition, recommendations for duration of sick leave and level of activity in the post-operative period differ widely [1]. Fraser et al. described that post-operative pain limited function of daily living in 40% of women 1 week after LS [2], whereas Eriksson et al. [3] described that more than 90% of patients had returned to normal activity after 3–4 days. The patient population undergoing LS consists of young women, and therefore recommendations for duration of convalescence and activity level may have substantial socio-economic implications. We have therefore described factors limiting early return to normal activities in a population given uniform recommendations for a short convalescence, after elective LS under standardized surgical conditions.

2. Methods

The setting was the gynaecological/obstetrical department at a public university hospital in Denmark. All patients scheduled for elective LS in the period 16-07-1996 to 10-06-1997 were asked to participate in a randomized, double blind placebo controlled clinical trial of ropivacaine for multiregional supplementary local anaesthesia (port site infiltration, salpinx/mesosalpinx block and intraperitoneal instillation, totally 285 mg), supplementary to general anaesthesia; the patients in the placebo group received no local anaesthesia. All patients received general anaesthesia with tracheal intubation, including propofol for induction and maintenance, alfentanil and atracurium. The mean duration of surgery was 14 min. Post-operative analgesia consisted of ketorolac 30 mg i.v. administered at induction of anaesthesia, and ibuprofen 600 mg p.o. 6 and 12 h post-operatively. For supplementary analgesia ibuprofen 600 mg p.o. was given, and as rescue analgesic 10 mg of morphine was given i.m. or i.v. No antiemetics were prescribed routinely. Eighty-one patients participated in the original study, which reported with less pain, less post-operative nausea/vomiting and reduced need for analgesics in the immediate post-operative period in the local anaesthesia group [4].

* Corresponding author. Present address: Anæstesi – og operationsklinikken, 4013, Juliane Marie Centret, H:S Rigshospitalet, DK 2100 Copenhagen, Denmark. Tel.: +45-3545-1340; fax: +45-3545-4525.

E-mail address: callesen@rh.dk (T. Callesen).

2.1. Data collection regarding convalescence

Pre-operative data were collected by personal interview by the study nurse (DH), including occupation, primary recreational activity (PRA) and activities of daily living (ADL). The physical workload on job was classified by the patients and recorded by the nurse as follows: Group A (unemployed or on leave from work), Group B (light, e.g. sedentary work), Group C (moderate, e.g. light industrial or postal work), or Group D (strenuous, e.g. construction workers, nurses taking physical care of heavy patients). A similar classification was used in relation to the PRA. The ability to perform ADL (child care, car driving, stair climbing, cooking, house cleaning, and shopping) without difficulties was recorded. Detailed recommendations for convalescence were given as follows: Patients were told not to resume car driving within the first 24 h due to any residual sedation. Otherwise the patients were advised to resume all activities, including work and recreational activities within 48 h. Patients were told to postpone bathing in public swimming baths until sutures were removed for hygienic reasons.

Post-operatively, patients were asked to complete a diary daily for the first week. The patients were asked to assess their ability to perform ADL, and to state the reason if they were not performed without problems (such as pain, wound problems, nausea/vomiting or other reasons). In addition, patients were asked to record the time when work and PRA were resumed, and to state the reasons if longer than the recommendation (such as pain, wound problems, counter advice from general practitioner, scheduled vacation or other reasons).

The main outcome measures were time to return to work and PRA. Descriptive statistics were used for demographic data. For comparison between groups Mann-Whitney-*U*-test was used for duration of convalescence, and χ^2 -test with Yates' correction was used for frequencies; $P < 0.05$ was chosen as the level of significance.

The patients participated after written, separate informed consent for the main study and the present derived study. The study was approved by the regional ethical committee for Copenhagen and Frederiksberg Municipalities (KF 01-448/95) and the National Board of Health.

3. Results

Eighty-one patients were selected by the pre-operative interview. Four patients, however, stated that due to pre-operative medical reasons (lumbago, leg pain, pelvic pain from a previous pregnancy or unspecified) they would not be able to follow the recommendations, and

thus did not want to participate in the convalescence part of the study. One patient was excluded when the laparoscopic procedure was converted to a mini laparotomy due to obesity.

Data for return to work or PRA were obtained from all 76 patients. The overall duration of absence from work was 5 days (median; range 1–17, interquartile range (IQR) 3–8), and the absence from PRA was 3 days (median; range 0–16, IQR 1–5). The relation between workload and return is shown in Table 1, the differences between different workload groups were not statistically significant ($P > 0.10$).

Fifty-three of 57 (93%) employed patients did not follow the recommendations to resume work within 48 h, and among these, 16 patients (30%) had a medical reason. Thirty-nine of the total 76 patients (51%) did not resume PRA within 48 h, and among these, 17 patients (44%) had a medical reason. The reasons, including non-medical ones, for not following the recommendations are shown in Table 2. Data for pre- and post-operative performance of ADL were obtained from 74 of 76 patients and are presented in Fig. 1. At the end of the first post-operative week all patients had resumed all activities at the same level as pre-operatively, except for 1 patient who experienced problems with shopping and house cleaning. There were no significant differences between ropivacaine and placebo groups with respect to convalescence at any time point or at any activity. Level of activity was maximally reduced on the day of the operation. On day two, when it was recommended that all activities should be resumed, house cleaning and shopping still caused trouble in 15% of the patients, see Table 3.

4. Discussion

LS is a common procedure in Denmark (5370 performed in 1999 with 5.1 million inhabitants [5]). The possibility of fast return to work is of major socio-economic importance, due to the age distribution of the patients and the frequency of this type of surgery.

Convalescence has not been sufficiently described, despite the frequency of the procedure and its potential for day case surgery. Both the duration of absence from work as well as performance of core ADL are central parameters. A precise characterization of convalescence is needed, including the method of calculating duration of convalescence (e.g. whether the day of surgery is included or not, objective criteria for performance of ADL and description of the social setting). To our knowledge, there are no comparative data on recommendations for convalescence after sterilization, and recommendations are thus based purely on traditions and personal beliefs.

Table 1
Return to work and PRA

| Level of activity | Work, number | Resumed after, days | | PRA, number | Resumed after, days | |
|-------------------|--------------|---------------------|-------|-------------|---------------------|-------|
| | | Median | Range | | Median | Range |
| Light | 25 | 5 | 3–11 | 22 | 1 | 0–13 |
| Moderate | 10 | 4.5 | 2–9 | 51 | 3 | 1–16 |
| Strenuous | 22 | 6.5 | 1–17 | 3 | 4 | 3–12 |
| Overall | 57 | 5 | 1–17 | 76 | 3 | 0–16 |

Table 2
Reasons for not following the 48-h recommendation for return to work or PRA

| | Work, <i>n</i> = 53 | PRA, <i>n</i> = 39 |
|---------------------------------|---------------------|--------------------|
| Planned vacation or weekend | 23 | 5 |
| Work load, as judged by patient | 10 | 1 |
| Agreement with employer | 5 | |
| No occasion for PRA | | 6 |
| Medical counter advice | 3 | 1 |
| Pain | 9 | 15 |
| Wound problems | 2 | 2 |
| Fatigue | 4 | 4 |
| Other reasons | 5 ^a | 2 ^b |
| Total | 61 | 36 |

^a Anaesthetic complication (1), blurred vision (1), feeling bloated (1), hypertension (1), planned visit to physician (1).

^b Anaesthetic complication (1), fear for falling (1).

It is important to realize that recommendations for convalescence and its actual duration after minor surgical procedures may depend on several non-medical factors. Among these are the insurance or economic compensation during sick leave [6], social customs, which are subject to considerable national and occupational differences, as well as patients' own expectations [7]. It may be important to know that in Denmark, the great majority of employed persons are entitled to receive their normal wage during sick leave and practically all hospital treatment in Denmark is provided by tax-paid public hospitals.

The recommendations in the present study, i.e. return within 48 h to all pre-operative levels of activity, were based on the assumption that this minor procedure would not cause extended problems, and it was considered a reasonable period, although not scientifically based. However, patients rarely followed this recommendation. The median duration of absence from work and PRA were 5 and 3 days, respectively, and only 4 of 57 employed patients followed the recommendation. There were no significant differences in duration of convalescence between the different groups of workload, nor whether patients received multiregional supplementary analgesia. Only 16 patients (30%) had a medical reason for not following the recommendation. Similar data have been presented after laparoscopic cholecys-

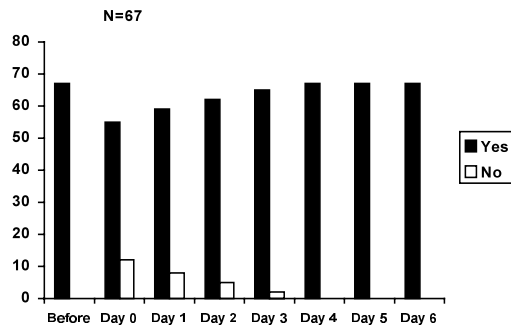
tectomy [12]. The most frequent contributory reasons for not following recommendations were planned vacation or weekend immediately after surgery and strenuous work. The number of patients planning surgery before a weekend/vacation or obtaining special arrangements with their employers may reflect that the patients' own expectations will affect the duration of convalescence, or that the patients considered the recommended period of sick leave too short.

The ability to perform ADL is essential if recommendations for short convalescence are to be followed. Documentation of such activities is available from hernia surgery [13], but only to a very limited extent in LS [2] where pain at the end of the first post-operative week was reported to limit ADL in up to 40% of the patients. Figures for the duration of convalescence vary considerably from a mean 1.5 day [8] to 5.4 days [2], and pain is consistently an important factor for not resuming activities earlier [2,9–11]. This is in contrast to the data presented in this study and the study by Eriksson et al. [3]. They studied the effect of lidocaine gel covered sterilization clips +/-i.v. ketoprofen vs. placebo, and found a faster return to normal activity in the ketoprofen+lidocaine group than in the other two groups (93% after 2 days vs 60% in the other groups), in addition to less use of analgesics and antiemetics. However, neither descriptions of 'normal activity', nor the degree of impairment of ADL were described or discussed in this paper.

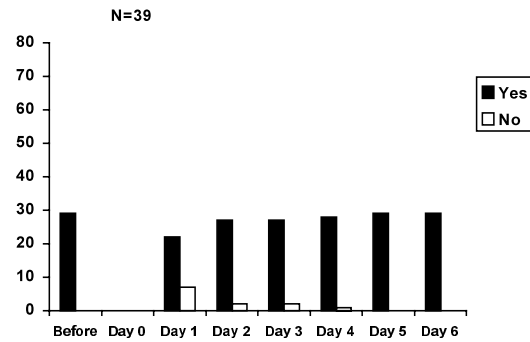
In the present study, virtually all activities were resumed at a pre-operative level at the end of the first post-operative week. Not surprisingly the level of function was primarily compromised in the first few days after laparoscopy. The activities primarily affected were house cleaning and shopping. However, even though performance of most ADL was normal in the great majority of patients after 2 days, other factors, such as expectations, planned vacations, agreement with employers and pain, postponed the actual return to work in the great majority of patients.

If performance of ADL in young women can be used as an indicator for ability to return to occupational activities, it would be reasonable to recommend a 2–3 days convalescence after LS. Furthermore, women

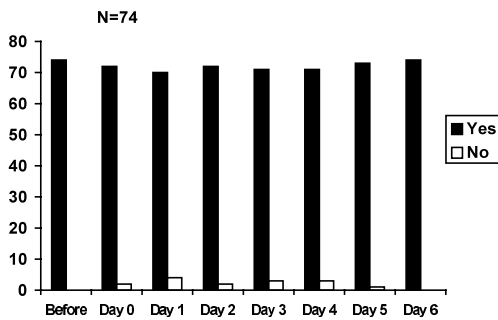
Childcare



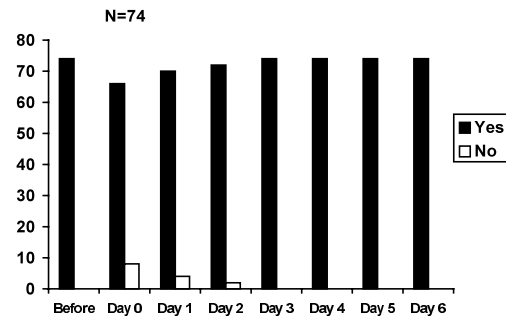
Car driving



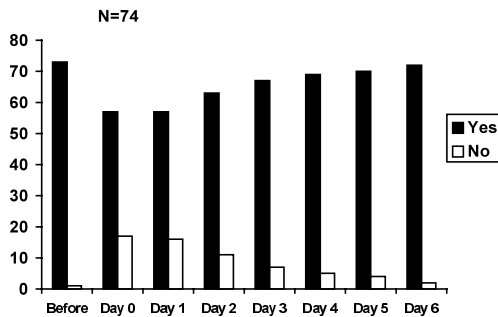
Stair climbing



Cooking



House cleaning



Shopping

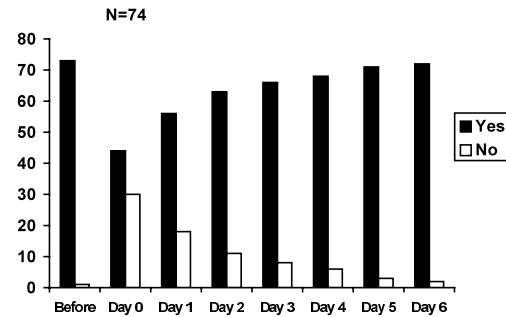


Fig. 1. Ability to perform ADL pre-operatively and during the first post-operative week.

Table 3
Contributory reasons for problems with shopping and house cleaning on day 2

| | Pain | Wound | PONV | Other |
|------------------------------|------|-------|------|----------------|
| Shopping, n = 11 (15%) | 7 | 0 | 0 | 6 ^a |
| House cleaning, n = 11 (15%) | 6 | 1 | 0 | 6 ^b |

^a Fatigue (3) feeling bloated (1), fear (1), pelvic pain from previous pregnancy (1).

^b Fatigue (3) feeling bloated (1), pelvic pain from previous pregnancy (1).

undergoing LS may be told that they should expect to resume all activities within the first post-operative week.

For future research, the development of standardized recommendations for a short convalescence is necessary. As a quality control tool, it must include a simple method to report actual absence from work and recreational activities and the time until core ADL have been resumed at pre-operative level. Standardized information must also include realistic information to the patients about what to expect. In turn, this may clarify the influence of social factors, including economic compensation and patients' expectations.

Acknowledgements

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