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ORIGINAL ARTICLE

The well-being of women following total laparoscopic hysterectomy versus total abdominal hysterectomy for endometrial cancer

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Abstract Total laparoscopic hysterectomies (TLH) are increasingly being used in the management of endometrial carcinoma. There is insufficient research on patient satisfaction and well-being after TLH for malignant endometrial disease. The objective of this questionnaire-based retrospective study was to compare post-operative well-being after total abdominal hysterectomy (TAH) versus TLH for endometrial carcinoma. Eighty-one women who underwent a TLH or TAH for endometrial carcinoma and atypical endometrial hyperplasia in a tertiary UK hospital were the sample of this study. Data regarding well-being and post-operative satisfaction were obtained via a self-administered questionnaire. Results were analysed. The primary outcome was health-related well-being. The length of post-operative hospital stay, satisfaction with scar, return to normal activities, severity of post-operative pain and sexual activity were secondary outcome measures. Seventy women responded (TAH n=41; TLH n=29). There was no difference between overall well-being between both groups. TLH group reported a shorter hospital stay (TAH=4 days; TLH=2 days; p=0.000), a quicker return to normal activities with 24.4% of the TAH group taking 12 weeks or more, compared to 3.4% of the TLH group (p=0.019) and increased satisfaction with their scars than the TAH group ('very' or 'fairly satisfied' with scar TAH 92.7%; TLH 100%; p=0.039). This study has found that patients' well-being after endometrial carcinoma is not significantly affected by surgical technique. This is in line with previous studies using patients with benign disease. However, laparoscopic techniques do have a reduced impact on a patient's life through shorter hospital stays and quicker return to normal activities

Keywords Total laparoscopic hysterectomy · Total abdominal hysterectomy · Endometrial carcinoma · Patient well-being

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Introduction

In the UK in 2007, there were 7,536 cases of endometrial carcinoma diagnosed [1]. Hysterectomy via the abdominal route, with bilateral salpingo-oophorectomy and peritoneal washings, has been the mainstay of treatment. Advances in minimally invasive surgery led to the introduction of laparoscopically assisted vaginal hysterectomy (LAVH), laparoscopic hysterectomy (LH) and total laparoscopic hysterectomy (TLH) [2]. In LAVH, the round ligaments and the infundibulopelvic ligaments are secured laparoscopically and the rest of the procedure is completed via the vaginal route; whereas in LH the uterine vessels are secured laparoscopically before completing the rest of the procedure vaginally. With TLH, the entire hysterectomy is performed laparoscopically and the only vaginal component is removal of the uterus. Currently, TLH is used alongside total abdominal hysterectomy (TAH) in the management of endometrial cancer. Some studies have showed that TLH compared to TAH is associated with a reduction in the amount of total blood loss at operation,

reduced requirement for post-operative analgesia and reduced hospital stay [3–6]. Whilst major complications such as urinary tract injury have been shown to be slightly higher in patients having TLH compared to TAH, there was no statistically significant difference in such complication rates between the two procedures [3, 4]. Many surgeons are now opting for TLH in patients who present with stage 1a endometrial carcinoma, as the disease-free interval and overall survival rates after TLH have proved similar to that after TAH [6].

The majority of studies that have compared the two techniques have focussed on surgical outcomes such as blood loss and operative time. Many argue that such measures are indirect indicators of patient satisfaction with a procedure. However, a patient's well-being, frequently expanded to a holistic notion of a patient's physical, social, emotional and spiritual well-being or 'quality of life', is considered a more direct measure of an intervention's impact on a patient [7]. One of the largest studies which examined quality of life as a secondary outcome after TAH versus laparoscopic hysterectomy procedures (i.e. grouping TLH, LH and LAVH together) reported that laparoscopic hysterectomy procedures were associated with a better quality of life [8]. A systematic review into quality of life after LH versus TAH which studied 30 previous trials also found similar results. The authors stated that in the seven studies which focused on quality of life as an outcome measure, patients who had laparoscopic hysterectomies reported a quality of life that was equal to or better than those who had received a TAH [9].

Only two studies have looked exclusively at TLH with quality of life or patient well-being as the primary outcome [10, 11]. One found that TLH patients had more 'post-operative vitality' than TAH patients [10], whereas the other reported that there was no significant difference in 'psychological well-being' or 'sexuality' after both procedures [11]. Notably, both studies only recruited patients with benign disease, therefore the impact of surgery when already dealing with the diagnosis of malignancy has yet to be established. Most studies comparing laparoscopic and abdominal approaches to hysterectomy have concentrated on benign disease, these patients cohorts are likely to be differ significantly to those undergoing surgery for endometrial cancer. Recently, there have been Australian [12] and Dutch [13] randomised controlled trails addressing quality of life for patients in this important group. Our study aims to compare patient well-being after TLH versus TAH for endometrial cancer in a UK population.

Materials and methods

Participants

This questionnaire-based, retrospective study was conducted in a large UK teaching hospital. Women who had undergone a TLH or TAH for an initial presentation of endometrial malignancy or atypical hyperplasia at one tertiary centre over a period of 23 months (January 2007 through to November 2008) were identified. Women who had presented with endometrial malignancy were staged pre-operatively with magnetic resonance imaging (MRI). Those with a uterine size of <12 weeks gestation were considered eligible (total n=81; TAH n=49; TLH n=32). Patients who had presented pre-operatively with benign pathology were excluded.

Baseline patient characteristics of pre-operative use of hormone replacement therapy (HRT), parity, menopausal status, body mass index (BMI), age and American Society of Anesthesiologists (ASA) score were obtained from hospital records. Patient well-being post-operatively was assessed via a self-administered questionnaire (Appendix I) that was distributed by mail, together with a covering letter. Completed questionnaires were also returned in a prepaid stamped envelope.

Questionnaire

The questionnaire was derived from the validated SF-36 health questionnaire [14]. It included participants' details (name, age and date on which they completed the questionnaire) and questions under seven broad themes. (1) Health in general—a visual analogue scale to express opinion of general health (0='poor' to 100='excellent') and a structured question inquiring about opinion of health now compared to 1 year ago. (2) Limitations on activities of daily living (vigorous activities, moderate activities, using the stairs, bathing and dressing). (3) Recovery after hospital (post-operative hospital stay, time taken to return to normal activities and satisfaction with scar). (4) Severity of post-operative pain. All questions referring to pain consisted of a visual analogue scale due to its documented validity in measuring pain intensity [15]. (5) Post-operative sexual activity. The women were asked to comment on their sexual activity now compared to before the operation. A visual analogue scale was used to assess pain on resumption of sexual activity post-operatively. (6) Ideas concerning their general health. (7) General comments. This comprised of a free text box asking participants to comment on anything they felt was not covered by the preceding questions.

Surgical procedure

Antibiotics and thrombo-prophylaxis were administered to all women prior to surgery according to the hospital protocol. The abdominal hysterectomies were performed or supervised by consultant gynaecological oncologists. Total abdominal hysterectomies were performed via a lower abdominal transverse incision and involved complete removal

of the uterus including the corpus and the cervix as well as bilateral salpingo-oophorectomy with or without pelvic lymph node dissection or sampling. The laparoscopic hysterectomies were also performed by consultant gynaecological oncologists. Four small incisions are made: three 5-mm trocar ports in the lower abdomen and one 10-mm intra-umbilical camera port. TLH procedure involved securing the round ligament and infundibulopelvic ligaments with a blood vessel sealing device such as the Ligasure 5. The bladder was then reflected with monopolar diathermy scissors and the uterine vessels secured at the edge of a trans-vaginal tube (McCartney tube). The cervix is then excised from the vaginal vault at the edge of the trans-vaginal tube and the whole specimen removed vaginally. If required, lymph nodes were dissected laparoscopically and retrieved via the McCartney tube. Laparoscopic vaginal vault closure was with O-monocryl suture.

Outcome measures

The primary outcome of this retrospective study was health-related well-being after TAH versus TLH for early-stage endometrial carcinoma. The length of post-operative hospital stay, satisfaction with scar, return to normal activities, severity of post-operative pain and sexual activity were secondary outcome measures.

Statistical analysis

Differences in women's baseline characteristics (age, parity, menopausal status, BMI, HRT use and SA score) and the duration of time from operation to questionnaire completion were compared between the two groups. The mean and standard deviation were calculated for parametric data; median and inter-quartile range for non-parametric data. Data from visual analogue scales was measured in millimetres, the measurement corresponding to a number from 0 (no pain) to 100 (worst pain). Qualitative data from theme VII was grouped into categories and analysed separately. Differences between the two groups were tested for statistical significance using chi^2 test for categorical data; independent *t* test for parametric continuous data and Mann–Whitney *U* test for non-parametric continuous data. A *p* value of <0.05 was considered significant. All data was analysed using SPSS 14.0 software (SPSS USA 2005).

Results

Eighty-one questionnaires were sent out in total. Seventy (87.5%) were completed and returned (TAH n=*41*; TLH *n*= 29). Of the 11 women that did not respond, one had undergone a TAH for stage 1A endometrial carcinoma, but sadly died 5 months after the operation due to the development of an unrelated primary carcinoma of the colon with associated liver metastasis.

The study groups were balanced for age, menopausal status, BMI, pre-operative parity and ASA score. There were however differences in the levels of pre-operative HRT use and the median duration of time from the operation to questionnaire completion (Table 1). Whilst endometrial carcinoma was the main indication for surgery in both groups, there was a substantial number of TLH carried out for atypical hyperplasia (8, 25%) than TAH (3, 6.1%). Detailed analysis of the histological type, stage and grade of disease is given in Table 2.

Analysis of the primary outcome (Table 3) revealed no statistically significant difference between the two groups, with both groups expressing a good sense of health-related well-being. Upon analysis of secondary outcomes, a number of differences were evident between the two groups (Table 4). The number of days spent in hospital post-operatively differed significantly along with the duration of time taken to return to normal activities with 24.4% of the TAH group taking 12 weeks or more, compared to 3.4% of the TLH group. Two women were able to return home within 2 days of a TLH procedure, whilst the minimum stay after a TAH was 2 to 4 days. Satisfaction with the surgical scar was significantly higher in the TLH group, 92.7% of the TAH group said they were 'very' or 'fairly satisfied' compared to 100% of the TLH group; $p=0.039$. No difference in the severity of post-operative pain was reported.

Of those who answered the questionnaire, 60% (TAH= 21, 51.2%; TLH=21, 72.4%) wrote a comment in question

Table 1 Patients' pre-operative baseline characteristics, current age and time duration from operation to questionnaire completion by treatment group

		TAH (*n*=49)	TLH (*n*=32)	*p* value
ASA score[a]		2 (1–2)	2 (1–3)	0.568
HRT use	Yes	1 (2)	5 (16)	0.017*
	No	48 (98)	25 (78)	
Pre-menopausal		6 (12)	6 (19)	0.351
Post-menopausal		43 (88)	24 (75)	
BMI (kg/m^2)[a]		32 (21–60)	33 (26–40)	0.856
Parity[a]		2 (1–3)	2 (2–2.5)	0.881
Current age (years)[a]		65 (58–73)	60 (50–70)	0.083
Time from operation to questionnaire completion (months)[a]		10 (5–18)	6 (4–9)	0.007*

Data expressed as absolute numbers (percentage)

TAH total abdominal hysterectomy, *TLH* total laparoscopic hysterectomy, *HRT* hormone replacement therapy, *BMI* body mass index, *ASA* American Society Anesthesiologists

[a] Median (inter-quartile range)

Table 2 Patients' pre-operative diagnosis, MRI staging, post-operative histological type, histological stage and histological grade of endometrial carcinoma

		TAH (n=49)	TLH (n=32)	p value
Pre-operative diagnosis [n (%)]	Endometrial carcinoma	42 (85.7)	20 (62.5)	0.038*
	Atypical hyperplasia	3 (6.1)	8 (25.0)	
	Complex hyperplasia	1 (2.0)	1 (3.1)	
	Other	2 (4.1)	2 (6.3)	
MRI Stage [n (%)]	IA	5 (10.2)	9 (28.1)	0.076
	IB	10 (20.4)	6 (18.8)	
	IC	7 (14.3)	0	
	IIA	2 (4.1)	0	
	IIB	2 (4.1)	1 (3.1)	
	IIIA	2 (4.1)	0	
	IIIB	0	0	
	IIIC	3 (6.1)	0	
	IV	1 (2.0)	0	
	Primary tumour not identified	2 (4.1)	4 (12.5)	
	No MRI	15 (30.6)	12 (37.5)	
Post-operative histological type [n (%)]	Endometroid Adenocarcinoma	40 (81.6)	27 (84.4)	0.018*
	Carcinosarcoma	6 (12.2)	0	
	Serous papillary carcinoma	2 (4.1)	0	
	Benign disease	1 (2.0)	5 (15.5)	
Post-operative histological stage [n (%)]	IA	4 (8.2)	10 (31.3)	0.011*
	IB	21 (42.9)	12 (37.5)	
	IC	8 (16.3)	1 (3.1)	
	IIA	1 (2.0)	0	
	IIB	5 (10.2)	1 (3.1)	
	IIIA	7 (14.3)	3 (9.4)	
	IIIB	0	1 (3.1)	
	IIIC	2 (4.1)	0	
	IV	1 (2.0)	0	
	No histological stage reported	0	4 (12.5)	
Post-operative histological grade [n (%)]	I	16 (32.7)	15 (46.9)	0.187
	II	23 (46.9)	9 (28.1)	
	III	8 (16.3)	4 (12.5)	
	No histological grade reported	2 (4.1)	4 (12.5)	

Data expressed as absolute numbers (percentage of group)

TAH total abdominal hysterectomy, *TLH* total laparoscopic hysterectomy, *MRI* magnetic resonance imaging

7.1, the general comments free text section. Six women (TAH=4, TLH=2) commented on the negative impact of radiotherapy and chemotherapy on their health-related well-being. Four women said their recovery had been affected by post-operative wound infections (TAH=3, TLH=1). Nine women (TAH=8, TLH=1) stated that they experienced negative symptoms or problems since their operation. Comments from the TAH group included 'tire more easily' (four women), 'backache', 'sensitive bowels', 'feel that hysterectomy has aged me', 'sex has become very painful' and having 'bouts of depression'. One woman from the TLH group remarked on having 'trapped wind' and 'difficult sleeping'. Four women from the TAH group stated that the negative aspects of their health-related well-being were not due to the operation but due to other health conditions, such as asthma and musculoskeletal pain from a previous road traffic accident.

Eleven women commented on the 'excellent' quality of care received whilst in hospital (TAH=6, TLH=5); however, two women (TAH=1, TLH=1) felt the care they received post-operatively was 'less than expected' and they 'felt left on my own a little to cope with the emotional feelings experienced'. Thirteen women (TAH=4, TLH=9) expressed their satisfaction with the surgical procedure they had experienced, whilst 8 out of the 21 in the TLH group who answered question 7.1 expressed particular contentment in laparoscopic

Table 3 Primary outcome: scores on well-being between the two groups

Question—responses		TAH (n=41)	TLH (n=29)	p value[a]
1.1 Opinion of health at present (visual analogue scores)		70 (55.5–81.0)	76 (61.0–84.0)	0.375
1.2 Health now compared to one year ago	Much better	12 (29.3)	10 (34.5)	0.253
	Somewhat better	3 (7.3)	7 (24.9)	
	About the same	21 (51.2)	9 (31.0)	
	Somewhat worse	4 (9.8)	2 (6.9)	
	Much worse	1 (2.4)	1 (3.4)	
2.1 No. whose activities of daily living were limited by health		30 (75.0)	21 (72.4)	0.809
6.1 'Get sick a little easier' than other people	True	3 (7.3)	0 (0.0)	0.108
	False	29 (70.7)	28 (96.6)	
	Don't know	9 (22.0)	1 (3.4)	
6.2 No. who felt they were 'as healthy as anybody' they know		33 (56.1)	20 (69.0)	0.338
6.3 No. who expected their health to 'get worse'		5 (12.2)	2 (6.9)	0.511
6.4 No. who felt their health was 'excellent'		27 (65.9)	22 (75.8)	0.920

Data expressed as absolute number (percentage of total group)

TAH total abdominal hysterectomy, *TLH* total laparoscopic hysterectomy

[a] p value for difference between the two groups using chi^2 test for categorical data, independent t test for parametric continuous data and Mann–Whitney U test for non-parametric continuous data

surgery, e.g. 'I feel grateful that I was lucky to have keyhole procedure and feel that it should become the rule rather than the exception'. Three women (TAH=1, TLH=2) stated that they would recommend laparoscopic surgery to others, or 'given the choice I would have gone for keyhole' (one woman from TAH group).

Table 4 Secondary outcome measures between the two groups

Question		TAH (n=41)	TLH (n=29)	p value[a]
3.1 No. of days of post-operative hospital stay[a]		4 (4–5)	2 (2–3)	0.000*
3.2 Duration of time taken to return to normal activities after operation (weeks)	0–2	0 (0)	2 (6.9)	0.019*
	2–4	2 (4.9)	4 (13.8)	
	4–6	5 (12.2)	10 (34.5)	
	6–8	12 (29.3)	8 (27.6)	
	8–10	8 (19.5)	2 (6.9)	
	10–12	4 (9.8)	2 (6.9)	
	12 or more	10 (24.4)	1 (3.4)	
3.3 Satisfaction with appearance of scar	Very satisfied	26 (63.4)	27 (93.1)	0.039*
	Fairly satisfied	12 (29.3)	2 (6.9)	
	A little unhappy	2 (4.9)	0 (0)	
	Very unhappy	1 (2.4)	0 (0)	
4.1 VAS score for severity of post-operative pain (mm)[b]	0–24 h	28 (8–75)	25 (8–54)	0.582
	24–48 h	26 (8.25–63.0)	25.3 (2–47)	0.252
	2 days–1 week	22.5 (5.3–53.0)	6 (1–41)	0.085
	1–4 weeks	9 (1–33.5)	5 (1–21)	0.404
	>4 weeks	3 (1–12)	2 (1–5)	0.646

Data expressed as absolute number (percentage of total group)

TAH total abdominal hysterectomy; *TLH* total laparoscopic hysterectomy; *VAS* visual analogue scale

[a] p value for difference between the two groups using chi^2 test for categorical data, independent t test for parametric continuous data and Mann–Whitney U test for non-parametric continuous data

[b] Median (inter-quartile range)

Discussion

We conducted a retrospective study looking at health-related well-being after total abdominal hysterectomy versus total laparoscopic hysterectomy for endometrial cancer patients. Our study concluded there was no difference in sense of well-being after either procedure. Two studies on post-operative well-being after TLH versus TAH, on patients with benign disease reported increased 'post-operative vitality' in the TLH group [10] whilst the other shared our study's conclusion that surgical approach did not affect patient's post-operative well-being [11].

Previous studies which included a similar cohort to the current study, with early stage endometrial cancer, suggest some measures of quality of life are improved but not all [12, 13]. Obermair et al. demonstrated that physical well-being and body image were improved after TLH, but emotional and social well-being were not [12]. This suggests that parameters of quality of life are not globally improved with TLH, which may explain overall well-being similar in the two arms of our study. Our positive findings include a significant difference in the number of post-operative days spent in hospital, the time taken by women to return to normal activities and overall satisfaction with their scar - all favouring the TLH group. The short length of hospital stay and reduced time taken to return to normal activities associated with TLH is in line with previous studies looking at the same parameters [3–6, 12, 13]. In addition to economic benefits, both findings illustrate a substantial effect on a patient's life through minimising the impact of surgery on work and family life. This in turn positively affects the lives of a patient's family and loved ones. The importance of this was evident in a study that focussed on the health-related concerns of patients undergoing major surgery from the perspective of patients, surgeons and health care professionals. It found that concerns about family support, the impact of major surgery on family or their spouse and spiritual support were themes frequently raised by the patients, but often overlooked by surgeons and health care professionals [16].

We also found a significantly increased level of satisfaction with scars following total laparoscopic hysterectomy when compared to total abdominal hysterectomy, this correlates with the improved body image seen in the LACE trial [12]. Although such a finding may appear mundane, research into the effect of scars, including surgical scars, on patients' emotional and psychological well-being has concluded that it can have a considerable influence over quality of life [17].

Despite previous reports of reduced pain after laparoscopic procedures, we found that there was no difference in reported pain intensity between the two groups. We asked women to rate pain intensity using a visual analogue scale in order to maintain our focus on quality of life as opposed to clinical or surgical outcomes. However, this does not take into account differences in the quantity of analgesia used between the two groups to achieve good pain control. Indeed decreased levels of analgesia use in TLH than TAH have previously been reported [4].

The free text box of our questionnaire was to give women the freedom to express their opinions without the constraints of a semi-structured or structured interview. Whilst this does not give data that can be compared easily, it helps us acknowledge themes that we have overlooked but patients have reported as important such as the impact of radiotherapy and chemotherapy on well-being, and the quality of hospital care they received during their admission.

A disadvantage of our study is that it was carried out retrospectively. Therefore we were unable to establish each group's pretest well-being and eliminate differences in baseline characteristics such as the time duration between surgery and questionnaire completion. This has a particular impact on memory of post-operative pain and the healing of scars. Notably however, the TLH group reported increased satisfaction with their scars, despite having newer and therefore less well-healed scars.

Conclusion

As the popularity of TLH increases over the traditional abdominal approach in the management of endometrial carcinoma, it is important to assess the impact not only in terms of surgical outcomes but also in terms of patient well-being and satisfaction. Our study has shown that there is no difference in reported overall well-being, although other studies suggest that only particular aspects of quality life are improved. Therefore, future studies in this area should be employing more specific questionnaires addressing individual aspects of well-being, to accurately determine the true impact of the route of surgery on patients' recovery. TLH is associated with increased satisfaction with scars, decreased hospital stay and notably a significantly faster return to normal activities which not only impacts on a woman's psychological well-being but also their ability to return to employment or role within the family.

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Appendix 1

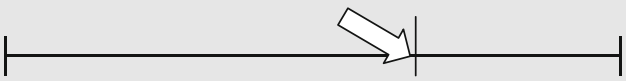
ID #_____

PATIENT SATISFACTION QUESTIONNAIRE

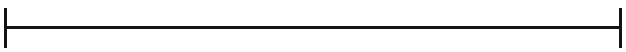
Name: _____
Age: _____
Date: _____

Please answer the following questions completely, honestly and without interruption.

1. GENERAL HEALTH
The following questions are regarding your health in general.



1.1 In general would you say your health is:
Place a vertical mark on the line below to indicate how you would say your health is generally.



1.2 Compared to one year ago, how would you rate your health in general now?
Please tick as appropriate.

- ☐ Much better now than one year ago
- ☐ Somewhat better now than one year ago
- ☐ About the same
- ☐ Somewhat worse now than one year ago
- ☐ Much worse than one year ago

2. LIMITATIONS OF ACTIVITIES

The following items are about activities you might do during a typical day.

2.1 Does your health now limit you in these activities? If so, how much?

Please tick as appropriate.

	Yes, limited a lot	Yes, limited a little	No, not limited at all
Vigorous activities (eg. running, lifting heavy objects, participating in strenuous sports)	☐	☐	☐
Moderate activities (eg. such as moving a table, pushing a vacuum cleaner, bowling, or playing golf)	☐	☐	☐
Climbing several flights of stairs	☐	☐	☐
Bathing or dressing yourself	☐	☐	☐

3. RECOVERY AFTER SURGERY

The following questions are regarding your recovery after your operation.

3.1 How many days did you remain in hospital after your operation? ____

3.2 How soon after the operation did you return to normal activities?

Please tick as appropriate.

- ☐ *0-2 weeks*
- ☐ *2-4 weeks*
- ☐ *4-6 weeks*
- ☐ *6-8 weeks*
- ☐ *8-10 weeks*
- ☐ *10-12 weeks*
- ☐ *12 weeks or more*

3.3 How satisfied are you with the appearance of your scar?

Please tick as appropriate.

- ☐ Very satisfied
- ☐ Fairly satisfied
- ☐ A little unhappy
- ☐ Very unhappy

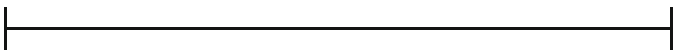
4. PAIN

The following questions are regarding any pain experienced at various stages in your recovery.

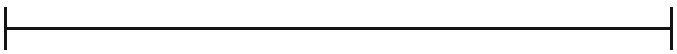
4.1 How severe was your pain after the operation?

Place a vertical mark on the line below to indicate how severe your pain was during the stated time periods.

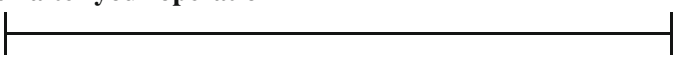
0-24 hours after your operation



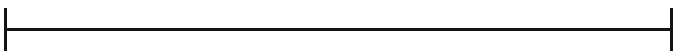
24-48 hours after your operation



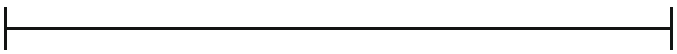
2 days – 1 week after your operation



1- 4 weeks after your operation



Over 4 weeks after your operation



5. SEXUAL HEALTH

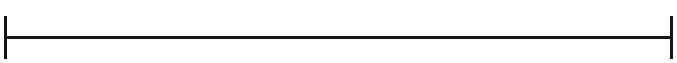
The following questions are regarding your sexual activity after the operation.
Please tick as appropriate

5.1 How would you rate your sexual activity now, compared to before your operation?

Please tick as appropriate.

- ☐ Same as before
- ☐ Worse than before
- ☐ Better than before

5.3 Upon resuming sexual activity after your operation, how painful was sexual intercourse?



6. GENERAL HEALTH

6.1 How true or false is each of the following statements for you at the moment?
Please tick as appropriate

6.2 I seem to get sick a little easier than other people.

- ☐ Definitely true
- ☐ Mostly true
- ☐ Don't know
- ☐ Mostly false
- ☐ Definitely false

6.3 I am as healthy as anybody I know.

- ☐ Definitely true
- ☐ Mostly true
- ☐ Don't know
- ☐ Mostly false
- ☐ Definitely false

6.4 I expect my health to get worse.

- ☐ Definitely true
- ☐ Mostly true
- ☐ Don't know
- ☐ Mostly false
- ☐ Definitely false

6.5 My health is excellent.

- ☐ Definitely true
- ☐ Mostly true
- ☐ Don't know
- ☐ Mostly false
- ☐ Definitely false

7. GENERAL COMMENTS

7.1 Please feel free to make any comments below that you feel were not covered by any of the questions above.

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Thank you for answering this questionnaire

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