

Analysis of minimal access surgery for endometrial cancers; a feasibility study

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INTRODUCTION

Minimal access, laparoscopic surgery for endometrial cancers, is a way of performing surgery through small incisions made in the abdomen. Specialist surgical instruments are inserted into the incisions along with an internal telescope and camera, so that the surgeon can observe what is being done. The uterus can then be removed through the vagina. This is an alternative to open access surgery which is performed through an incision in the abdomen or vagina.

The Enhanced Recovery, evidence based, model of care focuses on less invasive surgical techniques and recommends that the option of laparoscopic surgery should be made available as much as possible [1]. The benefits of laparoscopically performed major resections for treatment of endometrial cancer have been identified as: improved survival, reduced rate of cancer recurrence, lower morbidity, and shorter hospital stay following surgery, than patients receiving open access surgery [2]. However, there have also been a number of issues reported such as: converting to open access surgery during the procedure, damage to the surrounding organs or tissue [2] and also longer operating time [3].

There are no population based studies of laparoscopic surgery for endometrial cancer, only sample case studies. However, for colorectal cancer patients, Hospital Episodes Statistics data (HES) has been used to look at variation in this surgical procedure [4]. Therefore, the feasibility of using HES data to carry out similar analysis for endometrial cancer was conducted, setting out the potential of this data to inform the Enhanced Recovery model of care for endometrial cancer patients and also to help improve the coding of this procedure in the HES data.



METHODS

Endometrial cancer cases (ICD10 C54 and C55) diagnosed in 2001 to 2009 were extracted from the 2009 version of the National Cancer Data Repository (NCDR 2009). Endometrial cancer major resection procedures were linked via NHS number using the HES for operations taking place between 2000 and 2010. Patients with sarcomas (3.8%) and mixed Mullerian tumours (MMT) (5.9%) were excluded to ensure comparability between patients and the way they are surgically treated.

A major resection was defined using the OPCS-4 codes in table 1. Surgery was only considered

relevant to the cancer if the surgery was performed up to one month (30 days) prior to the recorded date of diagnosis or up to one year (365 days) after date of diagnosis. Laparoscopically performed major resections were identified using the OPCS codes in Table 2.

Length of stay was calculated using the time difference between the first relevant surgery operation date and the discharge date. There were 150 records in 2010 that were missing a discharge date. Patient records that were missing a discharge date were not able to be included in the length of stay analysis but would still have been included in the laparoscopic resection analysis.

OPCS-4 Code	Description
Q07	Abdominal excision of uterus
Q08	Vaginal excision of uterus
Q22	Bilateral excision of adnexa of uterus
Q23	Unilateral excision of adnexa of uterus
X14	Clearance of pelvis
Q093	Other operations on uterus
Q161	Other vaginal operations on uterus
Q521	Operations on broad ligament of uterus

Table 1. Codes used to define major resections

OPCS-4 code	General Description (3 digit code)	Specific Description (4 digit code)
Y508	Approach through abdominal cavity	Other specified approach through abdominal cavity
Y714	Late operations NOC	Failed minimal access approach converted to open
Y751	Minimal access to abdominal cavity	Laparoscopically assisted approach to abdominal cavity
Y752	Minimal access to abdominal cavity	Laparoscopic approach to abdominal cavity NEC
Y753	Minimal access to abdominal cavity	Robotic minimal access approach to abdominal cavity
Y755	Minimal access to abdominal cavity	Laparoscopic ultrasonic approach to abdominal cavity
Y758	Minimal access to abdominal cavity	Other specified minimal access to abdominal cavity
Y759	Minimal access to abdominal cavity	Unspecified minimal access to abdominal cavity

Table 2. Codes used to define laparoscopic surgery

RESULTS

The rate of laparoscopically performed major resections has increased since 2001 (Figure 1) with improvements in the way the procedure was coded from 2006 onwards. The proportion of laparoscopic procedures increased from 2.3% (n= 72) for patients diagnosed in 2001 to 27.6% (n= 1,380) for patients diagnosed in 2010. Laparoscopic converted to open surgery (Y714) has also become increasingly coded in the data, from 1% or less in 2006 to 2008, to 2.5% in 2010.

More specific coding for different approaches to laparoscopic major resections have become increasingly used, for example, there were 28 procedures recorded as 'Robotic minimal access approach to abdominal cavity' in 2010.

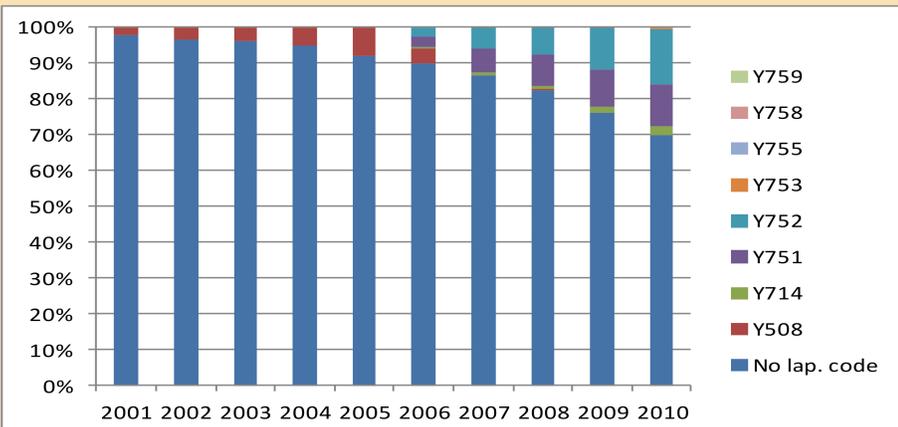


Figure 1. Trends in OPCS codes used to record laparoscopic surgery, diagnosis dates 2001-2010

By trust, there is a lot of variation in the proportion of major resections carried out laparoscopically (Figure 2). All but one of the trusts that did not carry out any laparoscopic major resections carried out less than 40 major resections; these are mainly non-specialist trusts. However, many of the trusts carrying out less than 40 major resections had a higher than average proportion of laparoscopic major resections with one trust carrying out almost 90% of the 13 major resections laparoscopically.

Figure 3 shows that there may be some correlation between the proportion of major resections that are carried out laparoscopically and the median number of days that patients stay in following surgery:

- All but one of the trusts with a median length of stay greater than the national average (3 days) have less than half of all major resections carried out laparoscopically.
- Two thirds of trusts with less than the national average rate of laparoscopic major resections (27.6%) have a median length of stay that is greater than 3 days.

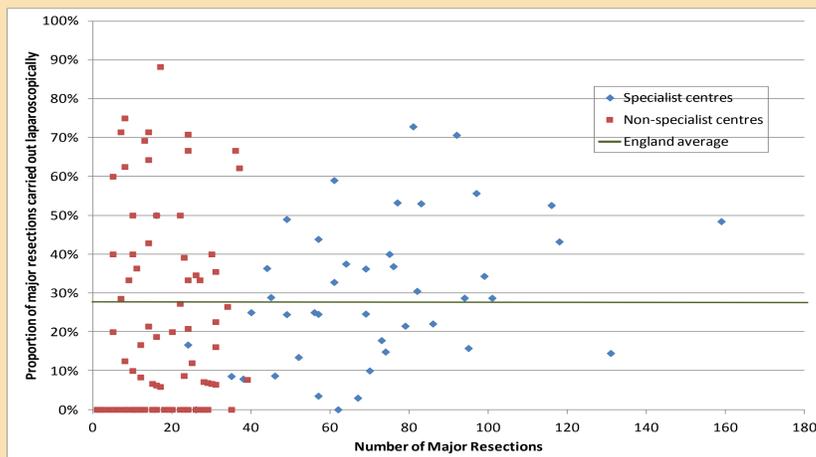


Figure 2. Proportion of major resections carried out laparoscopically against number of major resections, by trust, 2010

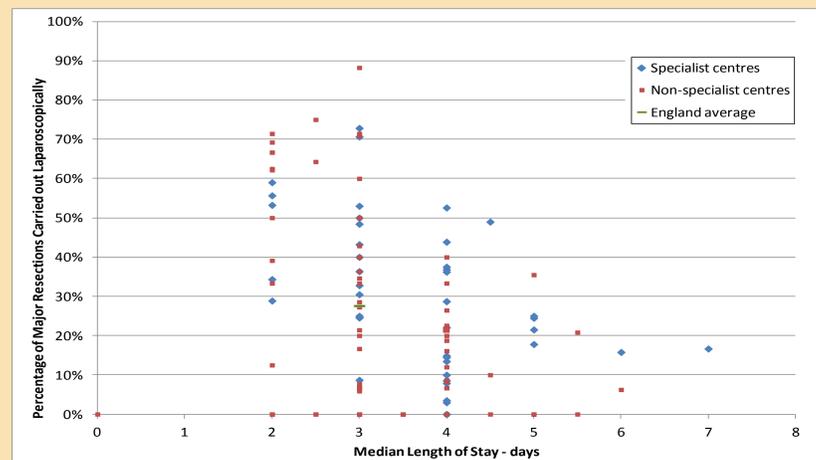


Figure 3. Proportion of major resections carried out laparoscopically against the median length of stay in days, by trust, 2010

DISCUSSION

In light of the possible benefits of laparoscopically assisted surgery, it is important to be able to identify the patients having this procedure and the effect this may have had on their length of stay and other outcomes.

In terms of the reported problem of a laparoscopic procedure conversion to open access surgery, it may be important to be able to identify such occurrences in the data. This may be important for analysis concerning quality of care but also in understanding variation in laparoscopic procedures and in case-mix analysis.

The analysis presented here suggests that HES data may be of sufficient quality from 2006 onwards and that the use of laparoscopic methods have become increasingly recorded. However, there is variation across trusts, both specialist and non-specialist centres, in the recording of this method. This suggests further work on: understanding why there is this variation; identifying trusts that represent good practice; or, whether improvements in coding may need to be made.

Initial analysis shows that there may be a relationship between laparoscopic rates and length of stay in that patients treated in those

trusts carrying out more laparoscopic procedures have shorter lengths of stay. However, a case-mix adjusted analysis which adjusts for factors such as age, co-morbidities and stage of disease, may help to understand why there is this variation in laparoscopic surgery and the effect this may have on length of stay.

CONCLUSIONS

- Laparoscopic resection rates can be calculated most effectively for patients diagnosed in 2006 and onwards using the codes as identified in Table 1.
- Laparoscopic conversions to open access surgery can also be identified in the HES data.
- Nationally, in 2010, over a quarter of all major resections were carried out laparoscopically.
- There is a lot of variation in the proportion of major resections carried out laparoscopically. This may identify trusts who represent best practice or trusts where there are issues in the coding of laparoscopic procedures.
- Further work may need to be done to measure the impact of laparoscopic surgery on length of stay as well as other patient factors.

ACKNOWLEDGEMENTS

This poster has been produced by the Public Health England Knowledge and Intelligence Team (PHE KIT) for the East Midlands, the National Cancer Intelligence Network's lead for gynaecological cancers. We would like to thank the Site Specific Clinical Reference Group for gynaecological cancers for their continued support.

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