Incidence and Significance of a Previous Hysterectomy in Women Attending for Endoscopic Investigation of Lower GI Symptoms

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Background

The incidence of hysterectomy in women with lower GI symptoms attending for flexible sigmoidoscopy and its effect on the success rate of the procedure has not been formaly studied.

Many endoscopy units, includung our own do not possess a 60 cm flexible sigmoidoscopy but instead use either an adult 165 cm long or paediatric 130 cm long colonoscope for the purpose.

Women tend to experience more pain during flexible sigmoidoscopy than men and their median insertion depth is lower [1].

Aims

Firstly, to prospectively estimate hysterectomy incidence in women attending a "fast track" endoscopy list with lower GI symptoms. Secondly, observe if the success rate for flexible sigmoidoscopy was affected by having had previous pelvic surgery. Thirdly, ascertain whether there were any detectable differences in onset of pain/discomfort relative to depth of insertion. Fourthly, see if pelvic loop size/configuration between women with (HY+ve) or without (HY-ve) a hysterectomy history differed. Fifthly, to see if there was any advantage in terms of median depth of insertion to using a paediatric endoscope in H+ve women.

	Hysterectomy	No Hysterectomy	Statistical significance
Failure to get up to or beyond sigmoid/descending colon junction	16/54 or 30%	19/146 or 13%	P=0.0112
Distance inserted before pain experienced for the first time (median and CI)	30.5 (25.8-34.3) n=30	35.8 (32.9-38.6) n=63	P=0.005
Median(CI) diameter (cm) across any sigmoid loop formed at the time that pain experienced for the first time	7.4 (7.1-9.4) n= 27	9.7(9.3-11.1) n= 58	P= 0.009

Table 1 - Effect of having had a previous hysterectomy - all female patients undergoing a non sedated flexible sigmoidoscopy with either a paediatric or adult colonoscope. The hysterectomy patients experienced pain/discomfort when less of the endoscope had been inserted. The pelvic loops were also significantly tighter – see also Figures 1 and 2.

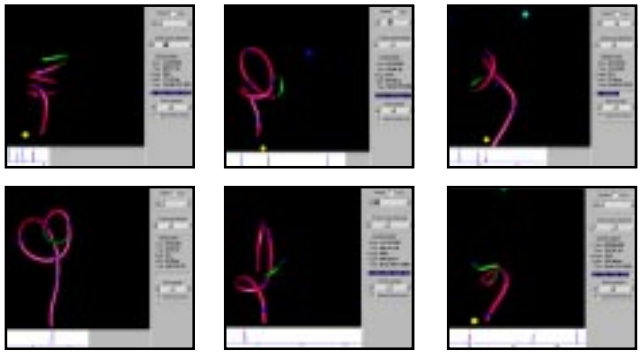

Figure 1 - Six examples of some of the tight "pig's tail" spiral loops that were frequently observed to occur in patients who had previously undergone a hysterectomy.

Methods

Over a 12 month period, a single experienced endoscopist (GDB) carried out 2 "fast track" surgical endoscopy lists per week. Non-sedated flexible sigmoidoscopy was carried out using either 165 cm full-length adult (Olympus CF230L or CF240L) or 130 cm paediatric instruments (Olympus PCF240I). The flexural rigidity of the 3 instruments was determined as described elsewhere [2].

Two hundred women underwent non sedated flexible sigmoidoscopy of whom 54 (27%) were HY+ve. In 93 of the 200 female patients we used magnetic endoscope imaging (MEI)[3-5] combined with a painometer [6]. We asked each patient to let us know as soon as any significant pain/discomfort was experienced for the first time.

One of us (SD) retrospectively analysed all the MEI files without knowledge as to a) which endoscope had been used and b) whether the patient had or had not had a previous hysterectomy. We recorded the number of cm of endoscope inserted before pain/discomfort was first felt as well as diameter (cm) across any loops formed in the sigmoid at the time that pain was first experienced.

Results

The failure rate (as defined as not reaching to at least the sigmoid/descending colon junction) was significantly higher (p=0.0112) in the HY+ve group (16/54 or 30%) compared with the HY-ve group (19/146 or 13%).

As can be seen from Figure 1 and Tables 1 and 2, women who had had a previous hysterectomy were more likely to have relatively tight spiral "pigs tail" loops. The mean distance of endoscope inserted before pain/discomfort was first experienced was significantly less in women with a hysterectomy. Furthermore the diameter of the loops was significantly smaller in HY+ve women. In women who were HY+ve the mean insertion depth before pain was first experienced was significantly greater (p=0.0034) if a paediatric instrument was used.

	Hysterectomy	No Hysterectomy	Statistical significance
Distance inserted before pain experienced for the first time (median and CI) - Adult colonoscope	24.7** (15.2-28.8) n=11	36.2 (31.8-41.5) n=30	P=0.0002
Distance inserted before pain experienced for the first time (median and CI) - paediatric colonoscope	33.4** (30.1-39.3) n=19	35.5 (31.5-38.3) n=33	P=0.473 NS ** p=0.0034
Median (CI) diameter (cm) across any sigmoid loop formed at the time that pain experienced for the first time - adult colonoscope	7.2 (6.3-10.6) n=10	9.6 (8.9-11.8) n=30	P=0.1598 NS
Median (CI) diameter (cm) across any sigmoid loop formed at the time that pain experienced for the first time - paediatric colonoscope	7.5 (6.6-9.8) n=17	9.8 (9.0-11.2) n=28	P=0.0271

Table 2 - Effect of having had a previous hysterectomy in female patients undergoing a non sedated flexible sigmoidoscopy – differences between using an adult or paediatric colonoscope in terms of median (CI) insertion distance (cm) before pain/discomfort first felt and median(CI) diameter (cm) across any loop formed in the sigmoid colon at the time that pain/discomfort was first experienced. Pain was experienced significantly earlier in the procedure when an adult colonoscope was used. With both endoscopes the pelvic loops tended to be tighter.

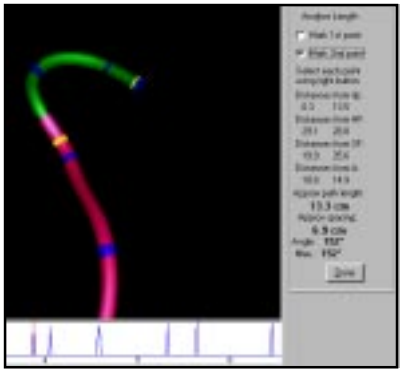

Figure 2 - Magnified example of the method used to measure a) the distance inserted when pain/discomfort first felt as well as b) the diameter of the loop c) the length of the arc and d) angle through which the arc turns. The position of the magnetic sensors is shown in blue while the distal bending section is highlighted in green. The two yellow marks are where we "clicked" on the two ends of the loop. The blue scale at the bottom of the picture is the time scale plus episodes of pain. Please also see tables 1 and 2.

Conclusion

Over 25% of female patients attending a surgical "fast track" flexible sigmoidoscopy session with lower GI investigations will have had a previous hysterectomy. These patients frequently formed tighter and at times quite bizarre sigmoid loops as the endoscope was inserted. We presume that this formation is secondary to either pelvic adhesions and/or a roomier pelvic cavity consequent to there no longer being a uterus. The PCF240I Olympus paediatric colonoscope was significantly floppier than the two adult colonoscopes used in this study (Olympus CF230L and CF240L) see Figure 3. The floppier paediatric would appear to offer distinct advantages to the 25% of women attending for flexible sigmoidoscopy who had a previous hysterectomy.

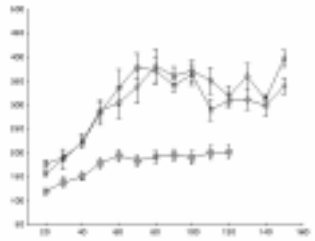

Figure 3 - Mean (SD) shaft flexural rigidity measurements (N cm²) of the three different colonoscopes used in the clinical trial a) Olympus PCF 240I (squares) b) Olympus CF230L(circle) and c) Olympus CF240L (diamond).

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