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Comparative study between laparoscopic hysterectomy and abdominal hysterectomy

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ABSTRACT

Today, there are few reasons for the expert laparoscopic or vaginal surgeon to perform an abdominal hysterectomy. Abdominal hysterectomy should be done less frequently, worldwide, because LH can be used effectively to accomplish less invasive laparoscopic or vaginal hysterectomy in most cases. LH stimulated a much greater interest in proper scientific evaluation of all forms of hysterectomy. Aims of study to compare the AH and LH in terms of clinical and functional outcome, to quantify and compare metabolic and inflammatory changes after procedure, to compare intraoperative and short term post-operative complications, to rectify patient's compliance & post-operative satisfaction after procedure, to access the most beneficial & least harmful surgical approach of hysterectomy for women with gynaecological condition and to access the cost effectiveness of procedure. We have selected 60 patients randomly coming to gynaecology OPD in G.G. Hospital, Jamnagar. Out of that 30 patients undergone LH and remaining 30 patients undergone AH. Results shows that intraoperative & postoperative complications less in LH in compare to AH, duration of recovery in postoperative period less in LH compare to AH. Less post-operative morbidity, early ambulation, shorter post op hospitalisation, early recovery are some benefits that clinches patients & also surgeon towards LH rather than AH.

KEYWORDS: LH (laparoscopic hysterectomy), AH (abdominal hysterectomy), complication

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INTRODUCTION

Today, there are few reasons for the expert laparoscopic or vaginal surgeon to perform an abdominal hysterectomy. Abdominal hysterectomy should be done less frequently, worldwide, because LH can be used effectively to accomplish a less invasive laparoscopic or vaginal hysterectomy in most cases. Hysterectomy can be performed in different ways. The oldest known technique is abdominal incision. Subsequently the vaginal (performing the hysterectomy through the vaginal canal) and later laparoscopic vaginal (with additional instruments inserted through a; small hole, frequently close to the navel) techniques were developed. The abdominal technique is very often applied in difficult circumstances or when complications are expected.¹⁻³

A Cochrane review from 2009 recommends vaginal hysterectomy over other variants where possible. Laparoscopic surgery offers certain advantages when vaginal surgery is not possible but has also the disadvantage of significantly longer time required for the surgery.⁴ In direct comparison of abdominal (laparotomic) and laparoscopic techniques laparoscopic surgery causes longer operation time and substantially higher rate of major complications while offering much quicker healing.^{4,5} In direct comparison of abdominal (laparotomic) and laparoscopic techniques laparoscopic surgery causes longer operation time and substantially higher rate of major complications while offering much quicker healing.^{4,5}

Large multifibroid uteri and subtotal hysterectomies did previously require abdominal incision but with the use of in situ morcellation they can be sometimes also performed using laparoscopic or vaginal techniques.⁶ Even impacted fibroid uteri with severe adhesions, obliterated cul-de-sac and no motion whatsoever on pelvic exam can be removed laparoscopically by experienced laparoscopic surgeons.⁷

Numerous articles have been published suggesting the benefit of laparoscopic hysterectomies over the abdominal route, due to fewer complications, less blood loss, decreased hospital stay and quick return to work.⁸⁻¹¹

PATIENTS AND METHODS

60 females were included in the study which was selected randomly coming to gynaecology OPD in G.G.Hospital, Jamnagar, Gujarat, India. Out of which 30 patients had undergone AH and 30 patients had undergone LH. A questionnaire was used to collect the data in terms of past history, history related operative procedure, investigations, intraoperative & postoperative complications. . Data entry &

analysis is done using M.S.Excel & SPSS. Chi-square test was used to analyse the significant difference between LH and AH and $p < 0.05$ was considered as statistically significant value.

RESULTS & DISCUSSION

A total of 60 patients with history of hysterectomy were recruited. 30 patients had undergone AH while the other 100 had undergone LH.

Table 1: comparison of operating time (duration of surgery) between laparoscopic hysterectomy & abdominal hysterectomy.

Duration of surgery (in minutes)	LH (n=30) (%)	AH (n=30) (%)
60-90 mins	0 (0%)	21 (70%)
90-120 mins	1 (3.33%)	2 (6.66%)
120-150 mins	10 (33.3%)	4 (13.3%)
150-180 mins	14 (46.6%)	3 (10%)
180-210 mins	4 (13.3%)	0 (0%)
> 210 mins	1 (3.33%)	0 (0%)
MEAN \pm SD	169.83 \pm 25.47	89.16 \pm 42.61

Mean duration of surgery in LH is 169.83 ± 25.47 minutes, while in AH it is 89.16 ± 42.61 .

Here difference is statistically highly significant ($P < 0.001$); suggestive of duration of surgery is more in LH compared to AH.

In Comparison of LH, in AH the time duration for surgery is 60-90 mins in maximum 21 (70%) patients, while in LH it takes 150-180 mins in majority cases ($n=14$) (46.6%). In one LH it took >210mins due to bladder injury, laparoscopy is converted to abdominal hysterectomy. In AH duration of surgery can be prolonged due to adhesions, large size fibroid, obesity etc. Overall in LH duration of operating time is longer than AH.

Table 2: Compare the estimation of blood loss, requirement of blood transfusion & requirement of analgesia

	Amount of blood loss(in ml)	LH (n=30) (%)	AH (n=30) (%)
Estimated blood loss	100 – 149 ml	26(86.6%)	2 (6.66%)
	150 – 199 ml	2 (6.66%)	4 (13.3%)
	200 – 249 ml	0(0%)	5(16.6%)
	250 – 299 ml	0 (0%)	15 (50%)
	300 – 349 ml	1(3.33%)	1 (3.33%)
	350 – 399 ml	0(0%)	1 (3.33%)
	> 400 ml	1 (3.33%)	2 (6.66%)
	Requirement of blood transfusion	Yes	3 (10%)
No		27 (90%)	26 (86.6%)
Requirement of analgesia in post-operative period (At 4 hrs)	Yes	23 (76.6%)	30 (100%)
	No	7 (23.3%)	0 (0%)
Requirement of analgesia in post-operative period (At 8 hrs)	Yes	3 (10%)	28 (93.3%)
	No	27 (90%)	2 (6.66%)

Mean amount of blood loss in LH is 140.33 ± 68.95 ml, while in case of AH it is 251.67 ± 79.18 ml ($P < 0.001$), that is highly significant. It suggest that amount of blood loss in AH is more than that of LH. On an average amount of blood loss in AH 250-300 ml, as shown in 50% cases. While in case of LH it is 100-150 ml in 70% cases. Around 150 ml of less blood loss occurs in LH than AH, this shortens post-operative morbidity. In AH apart from pedicles; blood loss also occurs from incision site, subcutaneous tissue, sheath & muscle. Amount of blood loss was intraoperatively measured by (Collection of blood in suction jar) + (weight of wet mop – weight of dry mop).

Table 2 shows that in LH group only 10% patients required BT, while in AH 13.3% patients required either intra op or post op BT. Even though more blood loss in AH, requirement of BT in patients of AH is more than that of LH. Increase BT requirement increase chances of transfusion related reactions & infections. That carries major risk to patient. So in that way LH is more beneficial to patient. Table shows that after 4 hr. in all patients of AH & after 8 hr in 93.3% analgesic required; while in case of LH 76.6% patients required analgesic in first 4 hrs. Only 10% patients required analgesics after 8 hrs. As

duration of postop period increase less amount analgesic required in LH. But in patients of AH almost all patients required analgesic in first post-operative period.

Table 3: Comparison of complications of laparoscopic & abdominal hysterectomy

	Complications	LH (n=30) (%)	AH (n=30) (%)
Intra operative complications	Haemorrhage (Bleeding)	0 (0%)	2 (6.66%)
	Hematoma	0 (0%)	1 (3.33%)
	Abdominal vessel injury	1 (3.33%)	0 (0%)
	Urinary track injury (Bladder injury)	1 (3.33%)	0(0%)
Post operative complications	Febrile episode	0 (0%)	1 (3.33%)
	UTI	2 (6.66%)	0 (0%)
	Paralytic ileus	0 (0%)	1 (3.33%)
	Vault Infection	1 (3.33%)	0 (0%)
	Abdominal wound Infection	0 (0%)	2 (6.66%)

In one case of LH abdominal vessel injury had occurred during trochar insertion (3.33%) & in one case bladder injury has been occurred during separation of vesico uterine fold. This patient had developed UTI in post op period. Urinary track injury occur more in LH than AH.

During AH in 6.66% patients had got severe haemorrhage from uterine pedicel. In one patient intra op pelvic hematoma had occur diagnosed during operation. In follow up period in this patient no any significant vault complication had occurred. In LH 2 patients UTI had developed in post op period, one was having bladder injury during operation; which was converted to abdominal route than after. One patient of LH had developed vault infection in follow up period. This patient has come with complain of foul smelling discharge per vaginum. We have treat that patient with higher antibiotics & daily twice betadine wash. One patient of AH had got fever on her first post op day; was of unspecified origin. One patient had got paralytic ileus her post op period.

Table 4: Duration of recovery in post operative period

	Time (in days)	LH (n=30) (%)	AH (n=30) (%)
Time from surgery to unassisted ambulation	1 – 2	10 (33.3%)	0 (0%)
	3 – 4	17 (56.6%)	5 (16.6%)
	5 – 6	2 (6.66%)	18 (60%)
	7 – 8	0 (0%)	6 (20%)
	9 – 10	1 (3.33%)	1 (3.33%)
Time to return of normal activity in days	<=28 days	14 (46.6%)	0 (0%)
	35 – 42 days	8 (26.6%)	2 (6.66%)
	49 – 56 days	5 (16.6%)	10 (30%)
	63 – 70 days	2 (6.66%)	16 (53.3%)
	>=77 days	1 (3.33%)	2 (6.66%)

Mean time from surgery to unassisted ambulation in LH is 3.07 ± 1.39 days & in AH it is 5.37 ± 1.46 days ($P < 0.001$), which is highly significant. All patients had got early unassisted ambulation in LH compared to AH. As shown in table after LH 56.6% patients were able for unassisted ambulation within 3-4 days, while in AH 60% patients were able for unassisted ambulation within 5-6 days.

Mean time to return of full activity in LH is 38.77 ± 14.44 days & in AH it is 60.90 ± 10.74 days ($P < 0.001$), which is statistically highly significant. In this table it suggest that after LH 46.6% candidates return to full normal routine activity in less than 28 days, which is quite earlier than AH patients returned to full activity within 35-42 days ,as shown in table – 4.

CONCLUSION

When all facilities are available & with experience hands one should always go for laparoscopic surgery. Less post-operative morbidity, early ambulation, shorter post op hospitalisation, early recovery are some benefits that clinches patients & also surgeon towards LH than AH. As this is belly-button or key hole surgery, cosmetic purpose serve more in LH compared to AH. Whenever there are contraindications to LH, one will always have open techniques. Direct cost of LH is more than AH, but overall LH is less costly than AH by counting its major benefits.

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